Usenet Newsgroup Archive: rec.radio.amateur.antenna

2003-07 - 2003-08

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Date span: 2003-07-01 through 2003-08-31

Source text: rec.radio.amateur.antenna.txt

Source item: https://archive.org/details/usenet-rec

Messages included in this PDF: 4,722

Message records with no readable body available in the source text: 2

Messages are presented chronologically by archived date.

Binary or encoded payloads are not printed as blocks of encoded text; a placeholder appears where such material was detected. The original source text is unchanged.

1. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 00:01:11 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F00CF47.8610EB84@uci.edu>
Source record: 113845

W5DXP wrote:
>
> Duane Allen wrote:
> > Hence, Pref1 = 25W + 25W = 50W and not the Pref1=0W you cite above.
>
> We know Pref1 = 0W because the system is matched. So something happens
> to that 50W at the impedance discontinuity to change its direction of
> travel and allow it to join Pfwd2. Here are those two 25W waves:
>
> 35.36V at zero degrees times 0.707A at 180 degrees equals 25W
>
> 35.36V at 180 degrees times 0.707A at zero degrees equals 25W
>
> Adding those two waves together yields zero volts and zero amps.

Zero power. End of story. But Cecil claims there's more:

> Those two waves engage in wave cancellation but the energy in those
> two waves cannot be canceled. It changes direction and joins the
> forward wave. I am trying to find out the official name of that
> mechanism.

Totally unsupporable speculation. There exists no mechanism in nature
that would produce such a "change in direction". The truth is the waves
do not form due to field cancellation, no energy is transferred in the
reflected direction, and the incident energy procedes to the load.

> > Similarly, Pfwd2 = 75W + 8.3W = 83.3W and not the Pfwd2=133.33W you cite
> > above.

> Since the 50W contained in the canceled waves changes direction, we
> get Pfwd2 = 75W + 8.33W + 50W = 133.33W

No. You get 133.33W in the forard direction because
75W + 8.33W + 2*sqrt(75W*8.33W)= 133.33W. That's the correct equation
for the superposition of the two waves propagating in the direction of
the load.

> The -50W is destructive interference, The +50W is constructive interference.

Your equation produces a negative value for something which can have
only positive values, and is indicative of an error in your calculation.

> The Conservation of Energy principle is satisfied.

That would remain true no matter what anyone might happen to say on the
subject.

73, ac6xg

2. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 00:25:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00D4E1.6070303@ieee.org>
Source record: 113846

Jim Kelley wrote:
> No power or energy is reflected from the discontinuity in a matched
> system, by definition.

Correction: No *NET* power or *NET* energy reaches the source in a matched system. There's plenty of reflected power as proven by the s-parameter equations. You know we are *NOT talking about *NET* anything. Why do you want to continue to beat that old dead horse? We are talking about the component energies that cause the *NET* result.

b1 is the *NET* reflected voltage and is indeed zero for a matched system. b1 = s11*a1 + s12*a2 so it is more than obvious that there are two reflected voltage components associated with the net b1=0 voltage.

> Obviously you aren't following the topic very closely. a11 is
> not a network parameter. It's a port parameter for one of the ports.

:-) s11 is the reflection coefficient, (Z1-Z0)/(Z1+Z0)

> The energy never travels rearward after the transient period.

Of course it does, Jim. Energy always travels rearward from a mismatched load. Standing waves wouldn't exist without the reflected energy traveling rearward from the load. So you next assertion must be that standing waves don't exist or demonstrate how they can exist without reflected waves.

How many times are you going to deny the reality of reflected waves being one of the absolutely necessary causes of standing waves?
--
73, Cecil http://www.qsl.net/w5dxp

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3. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 00:29:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00D5F3.3020602@ieee.org>
Source record: 113847

Jim Kelley wrote:
> The waves DIDN'T EXIST.

If the reflected wave didn't exist, then no standing waves could possibly exist.
But standing waves do exist so your assertion is false. Therefore, a reflected
wave exists between the mismatched load and the impedance discontinuity.

> No. I'm simply describing the physics, and the math.

You are describing your wet dreams. If your boss could see the bafflegab
that you are posting, you would probably be fired for incompetence.

> Wave cancellation prevents energy from being reflected, ...

Wave cancellation prevents energy from flowing toward the source.
It does that through the destruction of two reflected waves, one
of them from the mismatched load. We know the reflected wave from
the mismatched load exists because it causes standing waves. Therefore,
your premise is false.
--
73, Cecil http://www.qsl.net/w5dxp

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4. Re: Cecil's Math, i.e. Blunderous Conjecture

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 00:35:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00D75C.9070107@ieee.org>
Source record: 113848

Jim Kelley wrote:
> That you describe quotes from physics books as "bafflegab" is a fair
> summary.

Your out of context quotes from physics books are definitely bafflegab.

Here's a quote out of my physics book, Jim. deltaP2 = -deltaP1 That equation proves I am right and you are wrong. See, I can do it also. Do you agree with that equation or not?
--
73, Cecil http://www.qsl.net/w5dxp

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5. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 00:47:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00DA36.8030101@ieee.org>
Source record: 113849

Jim Kelley wrote:
>
> W5DXP wrote:
>>Good Grief, Jim, the Conservation of Energy principle states that energy
>>cannot be created or destroyed.
>
> I thought you said that it states that Pfwd1+Pref2=Pref1+Pfwd2. Make up
> your mind!

(Power In = Power Out) at a lossless impedance discontinuity incapable of storing energy is the same thing as stating that energy cannot be created or destroyed - exactly the same thing. It is unfortunate that you don't realize that fact.

>>That applies to any system around which
>>you can draw a boundary.
>
> A closed system is a pretty specific sort of thing. You can't just
> arbitrarily draw boundaries and then claim that energy must be conserved
> within them.

Of course you can, Jim. You can draw arbitrary boundaries anywhere in the universe and bet that the energy must be conserved within them. Does your boss know you are uttering complete bafflegab on this newsgroup advocating violations of the accepted laws of physics?

> The energy is not destroyed because V3 and V4 do not "materialize" in
> the first place.

You're too late, Jim. V4 has already materialized at the mismatched load and traveled back through the impedance discontinuity. If you do nothing with it, it will be incident upon the load. Given V4 has existed for a few nanoseconds already, exactly how are you going to talk it into dematerializing just because your wet dream wants it to?

It is not a question of something not materializing. It is a question of canceling something that already materialized at the load and traveled all the way from the load through the impedance discontinuity.
--
73, Cecil http://www.qsl.net/w5dxp

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6. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:12:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00E010.5040705@ieee.org>
Source record: 113850

Jim Kelley wrote:
> W5DXP wrote:
>>35.36V at zero degrees times 0.707A at 180 degrees equals 25W
>>
>>35.36V at 180 degrees times 0.707A at zero degrees equals 25W
>>
>>Adding those two waves together yields zero volts and zero amps.
>
> Zero power. End of story. But Cecil claims there's more:

Let's expand your false statements to make them true. There is zero
NET energy flowing in the direction of the load because of the destruction
of the two reflected wave components above.

We know that one of the wave components exists because it made a trip
from a mismatched load all the way back through the impedance discontinuity.
If it didn't exist, then it couldn't possibly have caused any standing waves,
but we know it did. Therefore, your premise is wrong. If it didn't transfer
any energy, it couldn't possibly cause standing waves, but it does.

That wave reflected from the load cannot disappear all by itself. It
takes another wave of equal magnitude and opposite phase to make it
disappear. Therefore, two waves exist.

We know the wave reflected from the load contains energy. We know it
is destroyed at a point. What happens to its intrinsic energy? Energy
cannot be destroyed. Energy doesn't make it rearward to the source.
There's only one possible direction - back toward the load just as
described on the Melles-Griot web page.

> There exists no mechanism in nature
> that would produce such a "change in direction".

It is possible that man has never defined such a mechanism but we know it
exists. Human knowledge is not 100% accurate or complete yet, Jim, even
if your omniscient syndrome believes yours to be. If the mechanism has really
never been defined in physics, it is my goal to define it. I'm still
thinking it has been defined and you are just ignorant of it.

> No. You get 133.33W in the forard direction because
> 75W + 8.33W + 2*sqrt(75W*8.33W)= 133.33W. That's the correct equation
> for the superposition of the two waves propagating in the direction of
> the load.

Yes, that's the correct equation where 2*sqrt(75*8.33W) is known as the
"interference term". Why do you think they call it the interference term,
Jim? Maybe because it *IS* the constructive interference term and according

to Hecht, an equal magnitude of destructive interference must exist on the other side of the impedance discontinuity? Destructive interference caused by the destruction of two reflected waves?

> Your equation produces a negative value for something which can have
> only positive values, and is indicative of an error in your calculation.

It's not negative energy, Jim. Destructive interference is energy rejected from the interference process. The rejection *direction* is why it is negative. Constructive interference is energy required by the interference process from the direction of the destructive interference. That's why it is positive. But the convention could just as easily be reversed. Either way, the destructive interference needs to carry the opposite sign of constructive interference, not because the energy is negative, but simply to denote direction of flow, which is a commonly accepted practice. If current is flowing to the left, is it negative current? Get real!

>>The Conservation of Energy principle is satisfied.
>
> That would remain true no matter what anyone might happen to say on the
> subject.

Actually, you violate the spirit of the Conservation of Energy principle quite frequently. Good thing it all happens in your mind.

You can't have it both ways, Jim. If, as you say, reflected waves transfer no energy, then they couldn't possibly cause standing waves, but they do. It takes energy to cause standing waves.
--
73, Cecil http://www.qsl.net/w5dxp

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7. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:13:04 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F00E020.95330617@uci.edu>
Source record: 113851

W5DXP wrote:
> The sun being the center of the solar system didn't make any sense to
> the Catholic priests either.

Now that you mention it, your model is rather like that of the
geocentric model of the universe. :-)

> > you can add currents, and you can add voltages, but you can not just add
> > powers.

> Hmmmmmm, you believe we cannot add scalar values? How about one quart of
> water plus one quart of water?

Don't you mean minus one quart of water plus one quart of water? (One
of the quarts undoubtedly changes direction in order to join with the
quart moving in the forward direction.) :-)

> Follow my logic and
> see if you can find a mistake instead of completely dismissing everything > without a
second thought.

Your mistake is the assumption that energy is reflected when it is not,
and then being forced to make up for that mistake by claiming the energy
reverses direction by re-reflecting without encountering a boundary from
which to re-reflect.

Faith is the only thing which might support such a belief - not unlike
the faith held by the Catholic priests of Galileo's time.

73, ac6xg

8. Re: W8JK Gain - a result of Zo ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:33:40 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0306301733.609efc6@posting.google.com>
Source record: 113852

'Doc <w5lz@cwis.net> wrote in message news:<3F008615.AB7EFB59@cwis.net>...
> Jaro,
> After checking back over the past few weeks, I see that
> you have only posted in response to two people on this NG.
> In neither case was the post 'technical' in nature. In both
> cases, your posts was to show dissatisfaction with the poster.
> Have you ever heard the old saw about the pot calling the
> kettle black?
> 'Doc

Doc, you can give but not take
He is correct..When Richard made a snide remark you took the
oportunity to jump in behind him with one too. Nothing technical
you just jumped on the bandwaggon.
And now you complain because somebody jumps on you.
He is correct you NEVER provide any technical insight
only "me to " comments. Well now you have the thread all to
yourself until Richard comes up with something like a new
thread but with the same title again....and again...and again.
Bye Bye
Art KB9MZ..XG

9. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:43:06 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0306301743.91e2225@posting.google.com>
Source record: 113853

```
Jim Kelley <jwkelley@uci.edu> wrote in message news:<3F00C13D.28C13064@uci.edu>...
> W5DXP wrote:
> >
> > Jim Kelley wrote:
> > > The Law of Conservation of Energy strictly applies to closed systems.
> > > It doesn't have to apply to open systems. A two port network is not a
> > > closed system.
> >
> > Good Grief, Jim, the Conservation of Energy principle states that energy
> > cannot be created or destroyed.
>
> I thought you said that it states that Pfwd1+Pref2=Pref1+Pfwd2. Make up
> your mind!
>
> I be you were in the physics for poets class. :-)
>
> > That applies to any system around which
> > you can draw a boundary.
>
Right
> A closed system is a pretty specific sort of thing. You can't just
> arbitrarily draw boundaries and then claim that energy must be conserved
> within them.
>
> > You are trying to tell
> > us that if energy is allowed to enter or exit a system, then the
> > Conservation of Energy principle doesn't apply.
>
> We would all be better served if you restricted yourself to saying only
> what you mean to say, and let everybody read what I am saying for
> themselves. You're almost always wrong about it.
>
> > > But you could resolve our
> > > disagreement by learning that cancelled waves transfer no energy.
>
> > You have learned some bafflegab. You have not learned a fact of physics.
> > The waves you are talking about above are not canceled at all. They
> > are merely interfered with. "Canceled", in this context means
> > destroyed. Do destroyed waves transfer no energy? How could anything
> > that is destroyed not give up its energy?
>
> The energy is not destroyed because V3 and V4 do not "materialize" in
> the first place.
>
```

> ac6xg

10. Re: Cecil's Math, i.e. Blunderous Conjecture

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:44:06 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0306301744.5d46c471@posting.google.com>
Source record: 113854

```
Jim Kelley <jwkelley@uci.edu> wrote in message news:<3F00AB65.B4705655@uci.edu>...
> W5DXP wrote:
> >
> > Jim Kelley wrote:
> > >
> > > W5DXP wrote:
> > >>I don't remember doing any of that, Jim. Would an iota of proof be
> > >>too much to ask?
> > >
> > > Do the words "Cecil's Math Error" ring a bell?
> >
> > Yep, but all your "proofs" were bafflegab about phantom waves that
> > exist without energy.
>
> That you describe quotes from physics books as "bafflegab" is a fair
> summary.

Left
```

11. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:45:16 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0306301745.7f9eca66@posting.google.com>
Source record: 113855

Left
Jim Kelley <jwkelley@uci.edu> wrote in message news:<3F00AA72.6603CFDB@uci.edu>...
> W5DXP wrote:
> >
> > Jim Kelley wrote:
> > > Or, the more correct view, energy wasn't conducted in that direction to
> > > begin with.
> >
> > Admitting that you have been seduced by the steady-state model doesn't
> > help your argument, Jim. Please prove that standing waves are possible
> > without energy-driven reflected waves. You are just digging your hole
> > deeper and deeper.
> >
> > Can an EM wave exist without energy?
>
> > >>Where does the energy in those waves go?
> > >
> > > What waves? The ones that cancelled?
>
> > Yes!!!! The waves that existed, were driven by intrinsic energy, and
> > disappeared during wave cancellation. What happened to the intrinsic
> > energy in those waves?
>
> The waves DIDN'T EXIST. They couldn't. Cancellation occurs at every
> instant of time after the transient period.
>
> > > Cancellation means no waves.
>
> > You are obviously confusing cause and effect.
>
> No. I'm simply describing the physics, and the math.
>
> > You cannot have wave cancellation without the existence
> > of waves and waves cannot exist without energy. What happens to the
> > energy in the canceled waves.
>
> Wave cancellation prevents energy from being reflected, thus allowing
> the energy to continue in the forward direction. It's very simple.
>
> ac6xg

12. Re: W8JK Gain - a result of Zo ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:47:00 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bdqp6klhh0@208.206.142.106>
Source record: 113856

Art Unwin KB9MZ wrote:

> jaroslavlipka@msn.com (jaroslav lipka) wrote in message
news:<d7855f42.0306300326.50ba073@posting.google.com>...
> > 'Doc <w5lz@cwis.net> wrote in message news:<3EFF7CE1.EF3C83C0@cwis.net>...
> > > Richard,
> > > Very little risk of that happening. It takes approximately
> > > 4 posts from Art to show how much he can be believed...
> > > 'Doc
> >
> > and it takes just "one" to show you for the clown you are.
> >
> > Sure sign the thread is coming to an end when you pop up. There
> > is no chance of you ever getting involved in any thing technical is
> > there?.
> > Jaro.
>
> You are correct the buzzards close in at the end so I'm done
> Art

Art did you stop to consider that if it's time for the buzards what must be left of the original?

13. Re: Lightning dangers from Faraday's cage comprimise while storm chasing/spotting?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:47:55 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0306301747.67d20770@posting.google.com>
Source record: 113857

Right

Keith <kilowattradio_spam@earthlink.net> wrote in message
news:<bdonma01g09@enews3.newsguy.com>...
> On Sun, 29 Jun 2003 17:50:18 GMT,
> R <who@where.net> wrote:
> > On Sun, 29 Jun 2003 05:09:02 -0500, 'Doc <w5lz@cwis.net> wrote:
> >
> >>'R',
> >> I think worrying about a scanner antenna (or any kind of
> >>mobile antenna) increasing the lightning hazard of your car
> >>is a waste of good worrying time. I seriously doubt if it
> >>would increase the likelyhood of your car being struck by
> >>lightning. a
> >
> > I'm not worried about it increasing the chance (though I'm sure it
> > does; more elevated metal means more streamers), I'm worried that by
> > not having the coax grounded to the car, any lightning that hits it
> > will follow the coax path into my car. Having a bolt of lightning
> > inside my car ain't a place I wanna go! ;)
>
> The mag mount is grounded to the car through the magnet. Doesn't
> your car have a antenna for the AM/FM radio? It is the same thing,
> if a bolt of lightening strikes your car the fact that you have
> a mag mount antenna will make no difference. You are worrying about
> nothing, you have a better chance of being in a auto wreck which
> could injury or kill you then be hit by lightening in your low
> profile car.

14. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:48:42 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0306301748.384aa481@posting.google.com>
Source record: 113858

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<9646-3EFFA53E-24@storefull-2317.public.lawson.webtv.net>...
> Richard Clark wrote:
> "You can see where this is heading - so can the bolt."
>
> Yes. The ungrounded coax lead violates the protection of the metal
> enclosure. With luck, the coax diameter is small so its exterior offers
> high surge impedance, as compared with RG-8, to the bolt. The mag-mount
> base will flashover to the car, clamping the volts on the coax to a
> shocking, but likely non-injurious value above the car body volts. I
> would not want to bet my life on the breakdown between the mag-mount and
> the car body because it is unecessary. All that`s needed for safety is a
> secure ground on the coax exterior at the point where it enters the car.
> Contrary to other posts, I would not be concerned about the coax
> center-conductor as a safety threat. The breakdown voltage of the coax
> is inconsequential when compared with the (L di/dt) of the bolt in the
> coax.
>
> Best regards, Richard Harrison, KB5WZI

Left again

15. Re: Lightning dangers from Faraday's cage comprimise while storm ch...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:50:01 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0306301750.67c55f85@posting.google.com>
Source record: 113859

Right again!

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<24307-3EFF53A7-47@storefull-2312.public.lawson.webtv.net>...
> R wrote:
> "But I still wonder how much of a risk it is to have this set up?"
>
> Inside a metal enclosure, you are safe from lightning to the extent the
> enclosure is continuous and does not have conductors insulated from the
> enclosure which penetrate it.
>
> Safety arises from the near short-circuit for lightning provided by the
> enclosure. The voltage difference between points on the enclosure is so
> small as to be non-hazardous to occupants in the usual case.
>
> A conductor charged to a high potential with respect to the vehicle
> which penetrates is hazardous.
>
> Lightning follows an easy path. Encountering a high impedance in one
> direction, it takes a new direction.
>
> Avoiding lightning is similar to avoiding noise on a much larger scale.
>
> No doubt lightning might strike an auto antenna destroying everything
> connected with it. But, there are hundreds of millions of vehicular
> antennas and such occurrences are rare indeed.
>
> The shielded lead connecting an antenna is protective if not
> overwhelmed. Its series inductance and shunt capacitance, inside and
> out, retard a surge. The surge impedance incites a flashover at the
> antenna end of the line.
>
> Auto radios have a good ground connection to the car body at the antenna
> end. This is a must for noise rejection and it helps reject lightning
> too.
>
> I`ll cite many years of commercial 2-way radio experience including
> hundreds of mobile installations of almost every sort, and no case of
> lightning damage to a mobile radio or its coax cable. No Polyphasers or
> such were ever used either. Every coax was solidly grounded at the car
> body with a sharp=pointed screw driven from the antenna-mounting
> hardware. The radio inputs had d-c continuity so no extraordinary
> gradient was produced by charge build-up.
>

> Best regards, Richard Harrison, KB5WZI

16. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 01:59:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F00EB0D.6A77ADED@uci.edu>
Source record: 113860

W5DXP wrote:
>
> Jim Kelley wrote:
> > The waves DIDN'T EXIST.
>
> If the reflected wave didn't exist, then no standing waves could possibly exist.
> But standing waves do exist so your assertion is false.

A valid question. The answer is that energy is indeed transferred between the load and the match point during the transient period, setting up the standing waves between those two points. But additional energy is not required to maintain the oscillations on the transmission line during the steady state as no energy is transferred in that direction beyond the match point, nor is that portion of it re-reflected by the match point. The oscillations are simply maintained on the transmission line by the wave which is incident upon the load boundary. You're incorrectly presuming these oscillations represent a transfer of energy, but it is clearly seen that no path exists to enable or facilitate such a transfer.

> > No. I'm simply describing the physics, and the math.

> You are describing your wet dreams. If your boss could see the bafflegab
> that you are posting, you would probably be fired for incompetence.

I have regular discussions on this subject with my colleagues, and my facts are indeed being checked by knowlegeable folks. I think you even know one of them. My interest here is in physical phenomena.

> > Wave cancellation prevents energy from being reflected, ...

> Wave cancellation prevents energy from flowing toward the source.

That's what I've been saying. There is therefore no need for it to "change direction".

> It does that through the destruction of two reflected waves, one
> of them from the mismatched load. We know the reflected wave from
> the mismatched load exists because it causes standing waves. Therefore,
> your premise is false.

Your understanding of the premis is incomplete.

73, Jim AC6XG

17. Re: Cecil's Math, i.e. Blunderous Conjecture

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 02:02:18 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F00EBAA.7A3D0F54@uci.edu>
Source record: 113861

W5DXP wrote:
>
> Jim Kelley wrote:
> > That you describe quotes from physics books as "bafflegab" is a fair
> > summary.
>
> Your out of context quotes from physics books are definitely bafflegab.
>
> Here's a quote out of my physics book, Jim. deltaP2 = -deltaP1 That
> equation proves I am right and you are wrong. See, I can do it also.
> Do you agree with that equation or not?

Well, it's part of the equation. Same equation I first posted here on
the newsgroup. I quoted it right from Born and Wolfe. How does that
make me wrong?

ac6xg

18. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 02:06:45 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F00ECD2.7040000@get.lost>
Source record: 113862

G. Doughty wrote:
> I am monitoring 10m right now and am noticing something about my rig. I have
> an htx 10 that seems to have a ground problem. I do not have the dipole
> grounded. nor is the radio but when I touch the mic cord the squelch clears up
> and I can hear much better. Is this a grounding problem

Yes.

> and if so, what is the
> best way to ground it? Sometimes when the mike gets closer to the radio it
> clears up too.

The best way is with as short as possible heavy braid to a system of
interconnected 10 ft copper ground rods.

An acceptable way, especially for receiving only, is to a simple ground
rod, or to a water pipe (provided the pipe is grounded). Even grounding
to the electrical power ground can help.

73 .... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

19. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 02:19:19 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F00EFA7.712316B2@uci.edu>
Source record: 113863

W5DXP wrote:
>
> Jim Kelley wrote:
> >
> > W5DXP wrote:
> >>Good Grief, Jim, the Conservation of Energy principle states that energy
> >>cannot be created or destroyed.
> >
> > I thought you said that it states that Pfwd1+Pref2=Pref1+Pfwd2. Make up
> > your mind!
>
> (Power In = Power Out) at a lossless impedance discontinuity incapable of
> storing energy is the same thing as stating that energy cannot be created
> or destroyed - exactly the same thing. It is unfortunate that you don't
> realize that fact.

:-) It's unfortunate you don't understand the difference between an
equality, and a law of nature.

> >>That applies to any system around which
> >>you can draw a boundary.
> >
> > A closed system is a pretty specific sort of thing. You can't just
> > arbitrarily draw boundaries and then claim that energy must be conserved
> > within them.
>
> Of course you can, Jim. You can draw arbitrary boundaries anywhere in
> the universe and bet that the energy must be conserved within them.

You cannot arbitrarily draw a boundary and expect that energy will
necessarily be conserved within that boundary. Sorry. If you really
knew what you were talking about, you would know better. Draw a boudary
around a power plant and try proving energy is conserved within the
bounded system.

> Does your boss know you are uttering complete bafflegab on this newsgroup
> advocating violations of the accepted laws of physics?

Do you neighbors know that you're beating your neice?

> V4 has already materialized at the mismatched load
> and traveled back through the impedance discontinuity.

Prove it. Measure V4 on the front side of the impedance discontinuity.

> It is not a question of something not materializing.

It was the other day. ;-)

73, ac6xg

20. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 02:34:19 UTC
From: richardharrison@webtv.net
Message-ID: <15159-3F00F32B-13@storefull-2314.public.lawson.webtv.net>
Source record: 113865

Art, KB9MZ wrote:
"Right (worry is wasted on a scanner antenna)."

Ben Franklin had a solution over two centuries ago. Erect a rod nearby which is considerably taller than the scanner antenna. Most beacon equipped towers have lightning rods to protect the beacons at the top. Often an ordinary Copperweld ground rod is inverted and used.

Best regards, Richard Harrison, KB5WZI

21. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 02:45:07 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F00F5B3.E4CA87D7@uci.edu>
Source record: 113864

W5DXP wrote:
>
> Jim Kelley wrote:
> > No power or energy is reflected from the discontinuity in a matched
> > system, by definition.
>
> Correction: No *NET* power or *NET* energy reaches the source in a
> matched system.

Also true.

> There's plenty of reflected power as proven by
> the s-parameter equations.

When solved as a network, the s-parameters show that the voltages cancel, and that the reflection coefficient of the network as a whole is zero. When you ignore most of the network then you arrive at partial solutions.

> > Obviously you aren't following the topic very closely. a11 is
> > not a network parameter. It's a port parameter for one of the ports.

> :-) s11 is the reflection coefficient, (Z1-Z0)/(Z1+Z0)

for one of the two ports. There are two ports AND a load - all of which determine the network characteristics.

> > The energy never travels rearward after the transient period.

> Of course it does, Jim. Energy always travels rearward from a mismatched
> load.

It's mismatched if we pretend the matching network isn't there. But it is there. You seem to believe it has no effect on the waves between there and the load.

> Standing waves wouldn't exist without the reflected energy traveling
> rearward from the load.

The fact that they do should be cause for some reconsideration of your point of view. How much energy do you contend it takes for the transmission line to store the amount of energy transferred there during the transient period? That is the amount of _energy_ that was reflected back to the discontinuity by the load. It remains the only energy unaccounted for in the steady state energy analysis.

73, ac6xg

22. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:07:02 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00FAD6.8090806@ieee.org>
Source record: 113866

Jim Kelley wrote:
> Your mistake is the assumption that energy is reflected when it is not,

Energy is *always* reflected from a mismatched load. If energy was not reflected from a mismatched load, standing waves couldn't exist. Your mistake is in rejecting the wave reflection model. Until you accept that model, we don't have anything left to discuss.
--
73, Cecil http://www.qsl.net/w5dxp

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23. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:12:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00FC13.3090801@ieee.org>
Source record: 113867

Jim Kelley wrote:
> A valid question. The answer is that energy is indeed transferred
> between the load and the match point during the transient period,
> setting up the standing waves between those two points. But additional
> energy is not required to maintain the oscillations on the transmission
> line during the steady state as no energy is transferred in that
> direction beyond the match point, nor is that portion of it re-reflected
> by the match point. The oscillations are simply maintained on the
> transmission line by the wave which is incident upon the load boundary.

But that is impossible. Standing waves cannot be maintained without
reflected waves. You are once again beating the *NET* energy dead horse.

> You're incorrectly presuming these oscillations represent a transfer of
> energy, but it is clearly seen that no path exists to enable or
> facilitate such a transfer.

Standing waves are impossible unless the reflected waves contain energy.
If standing waves exist, your premise is false.

> That's what I've been saying. There is therefore no need for it to
> "change direction".

Since half of the energy flowed rearward from the mismatched load,
you are just blowing smoke.

As long as you reject the wave reflection model, we will have nothing
left worth discussing.
--
73, Cecil http://www.qsl.net/w5dxp

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24. Re: Cecil's Math, i.e. Blunderous Conjecture

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:14:35 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00FC9B.1070303@ieee.org>
Source record: 113868

Jim Kelley wrote:
> I quoted it right from Born and Wolfe. How does that
> make me wrong?

Any equation, quoted completely out of context, is wrong for
the application. My five year old grandson can copy an equation
out of a book.
--
73, Cecil http://www.qsl.net/w5dxp

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25. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:19:01 UTC
From: richardharrison@webtv.net
Message-ID: <9644-3F00FDA5-308@storefull-2317.public.lawson.webtv.net>
Source record: 113772

Art, KB9MZ wrote:
"Left again."

It`s a fact. Lightning is easily imported via a wire to the outside of a protective enclosure.. It`s similar to the way in which noise is leaked in or out of a screened room.

As the outside of the coax should be grounded anyway, it is simple enough to soundly connect the coax shield at its entry point to the metal enclosure, and all done! The same lightning potential is distributed to all sides of the enclosure, leaving little difference of potential between any sides. Hazard has been avoided.

Best regards, Richard Harrison, KB5WZI

26. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:20:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F00FDF6.2020605@ieee.org>
Source record: 113769

Jim Kelley wrote:
> :-) It's unfortunate you don't understand the difference between an
> equality, and a law of nature.

As long as you continue to reject the Conservation of Energy principle,
Jim, we have nothing valid left to discuss.

> You cannot arbitrarily draw a boundary and expect that energy will
> necessarily be conserved within that boundary.

All energy is conserved. Do you think energy will be destroyed or created
within that boundary just because you will it to be?

> Prove it. Measure V4 on the front side of the impedance discontinuity.

I've done that, Jim. V4^2*Z0 is what heats up the circulator load resistor.
If reflected waves transfer no energy, how does the reflected wave heat
up a resistor?
--
73, Cecil http://www.qsl.net/w5dxp

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27. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:30:55 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F00FF60.A7DE84C@gte.net>
Source record: 113770

Zoran Brlecic wrote:

> G. Doughty wrote:
> > I am monitoring 10m right now and am noticing something about my rig. I have
> > an htx 10 that seems to have a ground problem. I do not have the dipole
> > grounded. nor is the radio but when I touch the mic cord the squelch clears up
> > and I can hear much better. Is this a grounding problem
>
> Yes.
>
> > and if so, what is the
> > best way to ground it? Sometimes when the mike gets closer to the radio it
> > clears up too.
>
> The best way is with as short as possible heavy braid to a system of
> interconnected 10 ft copper ground rods.
>
> An acceptable way, especially for receiving only, is to a simple ground
> rod, or to a water pipe (provided the pipe is grounded). Even grounding
> to the electrical power ground can help.
>
> 73 .... WA7AA
>

Could you explain why grounding the dipole helps?

Dale

28. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:33:42 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F010116.6010006@ieee.org>
Source record: 113771

Jim Kelley wrote:
> When solved as a network, the s-parameters show that the voltages
> cancel, and that the reflection coefficient of the network as a whole is
> zero.

The reflection coefficient is s11 = (Z1-Z0)/(Z1+Z0). So says the
HP AN 95-1. Sorry about that. Your "reflection coefficient of the
network as a whole" is NOT a physical reflection coefficient and
is only a mathematical construct.

>>Energy always travels rearward from a mismatched
>>load.
>
> It's mismatched if we pretend the matching network isn't there. But it
> is there. You seem to believe it has no effect on the waves between
> there and the load.

You are in a room with a hole in the wall. Through the hole comes a 150
ohm feedline. The load on the feedline is 50 ohms. The forward power is
133.33W and the reflected power is 33.33W. Is the system matched or not?

You say if it is matched, there is no energy in the reflected wave but
if it is not matched, then there is energy in the reflected wave. Again,
I ask you: Where do you find waves smart enough to know whether to carry
energy or not and where do you find waves that obey your telepathic thoughts?
Are you the reflected wave God?

Hint: The above conditions are *identical* whether the system is matched
or mismatched. ***YOU*** are not smart enough to tell the difference so
how the heck are the waves smart enough to tell the difference?
--
73, Cecil http://www.qsl.net/w5dxp

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29. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 03:56:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F010658.2030307@ieee.org>
Source record: 113773

Jim Kelley wrote:
> When solved as a network, the s-parameters show that the voltages
> cancel, and that the reflection coefficient of the network as a whole is
> zero.

This discussion is not about solutions provided by math models. I am
interested in what happens in physical reality.

So here's a question for you. What mechanism of physics keeps a
physical impedance discontinuity from causing a reflection from the
incident wave? Please be specific.
--
73, Cecil http://www.qsl.net/w5dxp

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30. Re: Lightning dangers from Faraday's cage comprimise while storm chasing/spotting?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 05:21:47 UTC
From: Roger Halstead <rdhalste@tm.net>
Message-ID: <sb52gvo1ea4ker8dg9nem7n7usl8hjfqet@4ax.com>
Source record: 113775

On 30 Jun 2003 02:48:15 GMT, "Dick Carroll;" <dixie@townsqr.com>
wrote:

>
>
>Henry Kolesnik wrote:
>
>> Several years ago Dan, N5AR was travelling down an Interstate and lightning
>> hit the 2 meter whip on his van and blew the antenna, coax, and radio to
>> pieces and scared the hell out of him. Shit happens!
>
>
>
> I think maybe now we have the definitive answer to the original inquiry!

Not the one you think.
Lightening is unpredictable.
AT most the ungrounded portion of the radio chassis can be no more
above ground than the breakdown voltage of the lowest common
denominator (plus the rise time and allowance for resistance)... That
the lightening, or rather a portion of it followed the coax to the
radio and then to ground (inside the radio) with spectacular results
is no indicator of indangering the passengers in the car. (unless it's
from heart failure.) It's unlikely the voltage that made it to the
radio was of any great magnitude, but it contained the ability to
provide very high amperage which could vaporize most of the radio.

I've been a storm chaser for over 25 years and have yet to worry about
lightening when in the car. I do have great concern when standing
beside the car with an approaching storm. Lightening can easily
strike 10 to 15 miles ahead of the storm out in clear sunshine which
is far more dangerous than driving through an area of intense cloud to
ground lightening.

A few years back I was flying from Midland Michigan (3BS) to Houghton
Lake (HTL). Gladwin (GDW is just about half way in between on a
straight line.

When we departed Midland I noted a big thunderstorm approaching
Gladwin from the west. So I headed straight north, expecting our
course would run about 15 miles east of the storm.

As we were passing due east of the storm my friend (a ham and also a
pilot) asked me how close we really dared get to a storm like that. I
was just about to answer when a bolt shot out horizontally and

directly at us at 5000 feet. About two miles to the west of us it curved down and hit the ground.

I looked at my friend and said, "You were asking what?". He remarked that he thought he'd just received one of the most remarkable answers he'd ever seen.

I have been in situations where I have a far greater concern about hail whether in a car, or airplane than I've ever had about lightening.

One other occurrence. My neighbor from across the road and I were standing out front at the end of the driveway. There was a thunder storm approaching and we were wondering just how far away it was. I had been counting and figured the last strike was about two miles from us and that meant we should probably get inside.

I'd no more than finished the sentence when lightening stuck the power pole about 20 feet from us. We bailed.

Is there a risk to lightening while in a car? Yes. How great? I don't know due to the unpredictability of lightening, but the odds are heavily weighted in your favor.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

>:-0

31. Re: Lightning dangers from Faraday's cage comprimise while storm chasing/spotting?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 05:32:55 UTC
From: Roger Halstead <rdhalste@tm.net>
Message-ID: <nt62gv0q01i980cjblsa95q33sttqak9c8@4ax.com>
Source record: 113776

On Sun, 29 Jun 2003 21:29:07 GMT, Dave Shrader
<david.shrader@attbi.com> wrote:

>Lightning is NOT an issue for the OUTER coax braid!!!
>
>The vertical element is connected directly to the coax center conductor
>not the braid!!
>
>A streamer or direct strike propagates directly on the center conductor
>and from/into the radio/passenger compartment!
>
>Solution: disconnect antenna when lightning/thunder is nearby!!

I haven't bothered disconnecting my outside antennas at the home station for years and they are the highest things around. 144 and 440 arrays at 130 feet, 7L on 6 at 115 feet, Hygain TH-5 at 100 feet, two slopers for 75 and one for 40 at 90 feet, a 144/440 Diamond repeater antenna with the base at 55 feet and a 40 meter inverted V at 45 feet.

That system gets hit an average of three times a summer. I haven't lost a radio in years.

As I said in another post. Lightening "to me" is not a concern when driving, or in the car except when I was driving a TransAm (Plastic car). <:-)) Other than the roll bar your head is the highest conductive thing around in that case.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

32. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 05:40:10 UTC
From: Roger Halstead <rdhalste@tm.net>
Message-ID: <dg72gv0j2653k9g6tnpp7gl49n98b1uq7a@4ax.com>
Source record: 113777

On Sun, 29 Jun 2003 21:49:34 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Richard Clark wrote:
>"You can see where this is heading - so can the bolt."
>
>Yes. The ungrounded coax lead violates the protection of the metal
>enclosure. With luck, the coax diameter is small so its exterior offers
>high surge impedance, as compared with RG-8, to the bolt. The mag-mount
>base will flashover to the car, clamping the volts on the coax to a
>shocking, but likely non-injurious value above the car body volts. I
>would not want to bet my life on the breakdown between the mag-mount and
>the car body because it is unecessary. All that`s needed for safety is a
>secure ground on the coax exterior at the point where it enters the car.
>Contrary to other posts, I would not be concerned about the coax
>center-conductor as a safety threat. The breakdown voltage of the coax
>is inconsequential when compared with the (L di/dt) of the bolt in the
>coax.

Not only the flash over at the base, but I'd bet the capacitance at
the base to roof would offer a much better path than the inductance of
the coax into the car. That stuff has a huge Dv/Dt, or Di/Dt if you
wish to measure current rise.

I've seen lightening strike a large, grounded tower and get off part
way down. The inductance and counter EMF was enough to quench the
arc, causing it to seek an easier path. Just stop and think about how
intense that magnetic field had to be.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>
>Best regards, Richard Harrison, KB5WZI

33. Spi-Ro Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 05:55:07 UTC
From: Brad <MYCALL@ARRL.NET>
Message-ID: <Xns93AB1C34CDF3GP@146.18.173.80>
Source record: 113774

I was given the traps and baluns to a Spi-Ro antenna. The wire connecting the traps and the balun have been cut and discarded. I am looking for some information on the wire lengths and "general" information on this antenna. It appears to match a VS-64 antenna that covers the 10,15,20,40,80,160 bands on their web page. I have one balun, T-15, T-20, T-40, and T-80 traps. Does anyone have any specs for this antenna. I have sent an e-mail to Spi-Ro but have gotten no response. Thanks.

Brad
N9NDS

34. ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 06:12:04 UTC
From: SPENCER <w1gak@cybermesa.nospam.com>
Message-ID: <3F012634.2060901@cybermesa.nospam.com>
Source record: 113778

I just moved to New Mexico. I need advice on how to put my ground rod
into this rocky soil. HELP

Spencer

35. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 06:23:57 UTC
From: Jack Twilley <jmt+usenet@twilley.org>
Message-ID: <86y8zizrwi.fsf@duchess.twilley.org>
Source record: 113779

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>>>>> "Jim" == Jim Richardson <warlock@eskimo.com> writes:

[... I can't make animate work ...]

Jim> Not sure if I follow, all I do is select "animate" from the menu,
Jim> and the currents animate.

Hmm. I wonder if it matters that I'm using VNC instead of 'real' X.

I'll give it a try at work tomorrow.

Jack.
- --
Jack Twilley
jmt at twilley dot org
http colon slash slash www dot twilley dot org slash tilde jmt slash
-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (FreeBSD)

iD8DBQE/ASkCGPFSfAB/ezgRAibAAKD7lht5VUHksgUjpiD6JtDMkTESnACgkFua
xowvUQg2A4e2W2ZlIW9o3NQ=
=Nt1l
-----END PGP SIGNATURE-----
```

36. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 06:44:18 UTC
From: Zoran Brlecic <WA7AA@comcast.net>
Message-ID: <3F012DBE.2000802@comcast.net>
Source record: 113780

Dale Parfitt wrote:

> Could you explain why grounding the dipole helps?

Grounding the entire system helps, not (necessarily) the antenna itself, by reducing the noise level. A single point ground for all the electronics in the shack makes a hell of a difference. My RX noise level rises some 10-15 dB when I untie the grounds from the RX, PC, keyer, amp, p/s, etc.

73 ... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

37. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 06:55:31 UTC
From: "rick@rickfrazier.com" <rick@rickfrazier.com>
Message-ID: <3F013063.8819A475@rickfrazier.com>
Source record: 113781

Spencer:

When you are dealing with rocky soil (or solid rock like where I live) you need to get a bit creative...

Generally, with rocky soil (or living on rock) you will not be able to pound a ground rod into the earth to get what you expect for a ground.

Unfortunately, many people living on "normal ground" rely on a single ground rod, which also reduces their ability to adequately ground their antenna system.

There are different needs for grounds for transmitting/receiving compared to grounds for lightning protection, though generally speaking, a good ground system for lightning protection does a fair to good job for hf transmitting/receiving as well.

Where I live (Hawaii) the ground is nearly solid lava, which is both a poor conductor and very very difficult to drive anything into... With a decent air hammer (Jackhammer?) you might be able to chisel a hole a few feet deep that you could pound a ground rod into, but you won't get the ground rod very deep, no matter what you do. (Think about trying to drive a ground rod into solid granite and you get the idea. Despite the fact that lava is typically pretty porous relative to water, it is a bear to try to drive anything into it...)

Think about burying radials a few inches below the soil line, or even placing them on the surface, and letting the lawn (grass, or other landscaping, or even weeds) take over and cover the wires.

When I built my workshop/studio, I placed about a thousand feet of 12 gauge wire below the vapor barrier, before the concrete was poured. It was oriented as a grid on about 5x5' covering the area of my workshop, about 32x52 feet. The individual wires are joined as they exit the concrete at a common point near the area I use for my Ham Shack. Even though none of these wires are intentionally resonant at any of the HF frequencies I use (160 to 10M), they seem to make a very effective ground system for every antenna I have tried in this location so far.

With your rocky soil, you may need to do something similar, even if you aren't planning to put up a large workshop. Get a bunch of wire at or below ground level, tied together at a common point, and give up on the "standard" 8' driven ground rod. It is typically an artifact of code requirements for AC service and not typically all that effective at HF frequencies anyway.

If you can't get out a decent grid of wire, at least consider a tuned counterpoise, (where you have at least one wire that is a quarter wavelength for each of the frequencies you plan to use) running from a common point near your shack.

However you do it, generally speaking, more is better. If all you can do is to connect to your in-house ground via a buried copper or galvanized water pipe, at least it's something. Replacing that with a tuned counterpoise or a fairly extensive grid can only help, though depending upon your circumstances, the improvement may not necessarily be worth the cost or effort....

Thanks
--Rick AH7H

SPENCER wrote:

> I just moved to New Mexico. I need advice on how to put my ground rod
> into this rocky soil. HELP
>
> Spencer

38. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 07:03:54 UTC
From: "rick@rickfrazier.com" <rick@rickfrazier.com>
Message-ID: <3F01325A.9FD874C8@rickfrazier.com>
Source record: 113782

Michael:

Unless I am mistaken, every transmission line/antenna system will have some standing wave pattern as you change the frequency... I can't imagine any system that wouldn't have some sort of standing wave pattern as you sweep from low to high frequency (Except perhaps a pure, non-inductive resistance, which isn't typically much of an antenna).

You may want to qualify your request somewhat so we can respond appropriately. Please provide the frequency range you expect to work, the amount of space you have available, and any other information that might affect the selection of the antenna/system that we would need to suggest. As you indicate, a Bazooka has "no where near the bandwidth" you are thinking of, so how about telling us the bandwith you want??? It is possible you could get a much more meaningful answer.

Thanks
--Rick AH7H

Michael Hart wrote:

> The one I am thinking of workes off the same principle as
>
> http://www.cebik.com/wbfd.html
>
> or http://www.hard-core-dx.com/nordicdx/antenna/wire/t2fd.html
>
> and http://www.paws.dircon.co.uk/draka.htm
>
> but is made from a couple of lenghts of coaxial cable. These are
> non-resonant antennas and work from just being a piece of line approximately
> the same impedance as free space with a termination at the end. There is no
> standing wave pattern set up as there is with resonant antennas. The wave
> travels from the feed to the terminating resistor getting radiated along the
> way.
>
> The Bazooka antenna has no where near the bandwidth I was thinking of. It
> is simply a modified resonant antenna and sets up standing waves like a
> normal wire dipole, except it has a modified stub feed.
>
> Michael
>
> "'Doc" <w5lz@cwis.net> wrote in message news:3F000E52.C715683D@cwis.net...
> >
> >
> > Michael,

> > Try doing a search for a 'coaxial dipole', or a
> > 'double bazooka'. Never heard of a traveling wave
> > dipole...
> > 'Doc

39. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 10:41:52 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bdrohjbss1@slb9.atl.mindspring.net>
Source record: 113783

Cecil:

[snip]
> Energy is *always* reflected from a mismatched load. If energy was not
> reflected from a mismatched load, standing waves couldn't exist. Your
> mistake is in rejecting the wave reflection model. Until you accept that
> model, we don't have anything left to discuss.
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

But "standing waves" are a purely steady state phenomena and according to
your recent
postings the steady state cannot exist.

On the other hand, "standing waves" cannot exist without a "steady state".

Until you accept that there is a "steady state" there can be no "standing
waves" and hence
there is no energy required to initiate and sustain those "standing waves".

In the transient state there are no standing waves and so one doesn't need
such specious arguments.

What?

--
Peter K1PO

40. FA: 64 Meter Coax BNC cable HP

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 11:53:41 UTC
From: minnesotatv@hotmail.com
Message-ID: <2f4200ab.0307010353.47ec552@posting.google.com>
Source record: 113784
Cross-posted to: comp.sys.hp.hardware,comp.sys.hp.misc,rec.radio.amateur.antenna,alt.ham-radio.marketplace,rec.radio.swap

For Auction:

Offered at auction one high quality 64 meter (212.5') COAX BNC cable.
Made in USA, HP Reorder number 92227G. ThinLAN cable coax with connectors.
PVC jacket. Appears to be in excellent condition.

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=3704&item=3033153632

41. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 12:05:52 UTC
From: richardharrison@webtv.net
Message-ID: <21659-3F017920-363@storefull-2311.public.lawson.webtv.net>
Source record: 113785

Roger, K8RI wrote:
"I`ve seen lightning strike a large grounded tower and get off part way down."

I`ve no doubt that happens. I know, however, that some strokes make the trip nearly all of the way in large part, from my years in broadcast stations.

Broadcast stations use transformer coupling to their towers. A grounded metal picket fence (Faraday screen) is inserted between primsary and secondary coils. Purpose of this shield is elimination of electrostatic coupling between transmission line and tower. Electrostatic coupling would favor harmonics of the broadcast frequency.

The Faraday screen is also the most effective lightning eliminator around. Any station`s screens I`ve seen were richly pitted from the many lightning strikes experienced.

Examination of the arc-gaps of the associated tower base insulator reveals pristine paint in most cases. Makes one wonder, why bother with gaps when you have a Faraday screen? It`s tradition.

Though little lightning may make it to the r-f transmission line, the transient it induces may cause an r-f arc in the transmission line. This hair-lips the signal and if sustained can damage the transmitter. To kill the arc, it is necessary to momentarily kill the transmitter. Automatically, this is usually accomplished by isolating the transmission line for d-c. A d-c supply with a relay coil in series is placed across the transmission line. When an r-f arc completes the path across the transmission line for d-c, the relay is energized removing the transmitter from the air for an instant, thus killing the arc.

Point is, the effects of lightning sometimes make it all the way to the radio.

Best regards, Richard Harrison, KB5WZI

42. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 13:01:36 UTC
From: Duane Allen <computeruser@sprintmail.com>
Message-ID: <3F0186CF.6040406@sprintmail.com>
Source record: 113786

W5DXP wrote:
> Duane Allen wrote:
>
>> Hence, Pref1 = 25W + 25W = 50W and not the Pref1=0W you cite above.
>
>
> We know Pref1 = 0W because the system is matched. So something happens
> to that 50W at the impedance discontinuity to change its direction of
> travel and allow it to join Pfwd2. Here are those two 25W waves:
>
> 35.36V at zero degrees times 0.707A at 180 degrees equals 25W
>
> 35.36V at 180 degrees times 0.707A at zero degrees equals 25W
>
> Adding those two waves together yields zero volts and zero amps.
>
> Those two waves engage in wave cancellation but the energy in those
> two waves cannot be canceled. It changes direction and joins the
> forward wave. I am trying to find out the official name of that
> mechanism.
>
>> Similarly, Pfwd2 = 75W + 8.3W = 83.3W and not the Pfwd2=133.33W you
>> cite above.
>
>
> Since the 50W contained in the canceled waves changes direction, we
> get Pfwd2 = 75W + 8.33W + 50W = 133.33W
>
>> When you put the values you provided into your equation you get
>>
>>> - [0 - 100W(0.25) - 33.33W(0.75)] = 133.33W - 100W(0.75) - 33.33W(0.25)
>>>
>>> - [0 - 25W -25W] = 133.33W - 75W -8.33W
>>>
>>> -[-50W] = +50W
>>
>
> The -50W is destructive interference, The +50W is constructive
> interference.
> The Conservation of Energy principle is satisfied.

Cecil,

If you set up the condition that on the left side of the discontinuity
that the two "waves" cancel each other, which results in no energy in

Pref1, then there is some cancellation of the waves on the right side of the discontinuity. On the right side of the discontinuity, there is 75W which came throught the discontinuity and a cancelling 8.33W (33.33W-25W). Hence, my calculation of energy on the right side is 66.67W.

Plugging this in to your equation, I get

- [0 - 100W(0.25) - (-33.33W)(0.75)]
= 66.67W - 100W(0.75) - (-33.33W)(0.25)

- [0 - 25W - (-25W)] = 66.67W - 75W - (-8.33W)

- [0] = 0

Duane
N6JPO

43. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 13:08:05 UTC
From: wess@gtii.com
Message-ID: <vg31tum4oareae@corp.supernews.com>
Source record: 113787

I am sure enjoying this thread. This Faraday screen. Is it something
that a ham can use to protect his setup? If so how, details, sources,
ect welcome.

73,wes, kc8spr

richardharrison@webtv.net (Richard Harrison) wrote:

>Roger, K8RI wrote:
>"I`ve seen lightning strike a large grounded tower and get off part way
>down."
>
>I`ve no doubt that happens. I know, however, that some strokes make the
>trip nearly all of the way in large part, from my years in broadcast
>stations.
>
>Broadcast stations use transformer coupling to their towers. A grounded
>metal picket fence (Faraday screen) is inserted between primsary and
>secondary coils. Purpose of this shield is elimination of electrostatic
>coupling between transmission line and tower. Electrostatic coupling
>would favor harmonics of the broadcast frequency.
>
>The Faraday screen is also the most effective lightning eliminator
>around. Any station`s screens I`ve seen were richly pitted from the many
>lightning strikes experienced.
>
>Examination of the arc-gaps of the associated tower base insulator
>reveals pristine paint in most cases. Makes one wonder, why bother with
>gaps when you have a Faraday screen? It`s tradition.
>
>Though little lightning may make it to the r-f transmission line, the
>transient it induces may cause an r-f arc in the transmission line. This
>hair-lips the signal and if sustained can damage the transmitter. To
>kill the arc, it is necessary to momentarily kill the transmitter.
>Automatically, this is usually accomplished by isolating the
>transmission line for d-c. A d-c supply with a relay coil in series is
>placed across the transmission line. When an r-f arc completes the path
>across the transmission line for d-c, the relay is energized removing
>the transmitter from the air for an instant, thus killing the arc.
>
>Point is, the effects of lightning sometimes make it all the way to the
>radio.
>
>Best regards, Richard Harrison, KB5WZI

--
Reply to:
Whiskey Echo Sierra Sierra AT Gee Tee EYE EYE dot COM
Lycos address is a spam trap.

44. Cargo container of Antenna Tuners. ID?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 13:09:37 UTC
From: RF_AUDIO@collectiblehelp.com
Message-ID: <f3d277fb.0307010509.398f6640@posting.google.com>
Source record: 113788

Group,
I found a cargo container of these "OLD" Mil Aircraft antenna tuners.
I bought 3 truck loads of other old tube gear from these folks but
passed on these tuners.
No body knows what they tuned. TRAILING WIRE? I think they are MF/HF.
Inside are 2 vario-ductors or (vario-couplers),
fixed caps, lots of HV ceramic switches. Coils are old cloth litz wire
on bakelite/fiber core forms.
They are extreemly lightweight for their size. Transmitter Tuning Unit
TU-10-B

Can these be used for anything worthwhile or just junk?
Maybe too narrow banded for Amateur use?

Maybe a veteran or aircraft radio buff recognizes these.

Here are 3 of them->
http://pic3.picturetrail.com/VOL18/68355/167687/28486943.jpg

I took a sample unit apart to inspect.
I have to buy the whole container or pass.
They are kind of neat, but that is a lot of tuners to get stuck with.
Even at $2.50 ea prox.

Thanks for reading,
John
www.collectiblehelp.com

45. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 13:24:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F018B80.8040009@ieee.org>
Source record: 113789

Peter Brackett wrote:
> Cecil:
>>Energy is *always* reflected from a mismatched load. If energy was not
>>reflected from a mismatched load, standing waves couldn't exist. Your
>>mistake is in rejecting the wave reflection model. Until you accept that
>>model, we don't have anything left to discuss.
>
> But "standing waves" are a purely steady state phenomena and according to
> your recent postings the steady state cannot exist.

Standing waves certainly exist with modulated waves which are not steady-
state. Feed a TV receiver with 1000 ft of open-wire line. You have ghosting
indicating there is no steady-state AND you have measurable standing waves.
So your following premise is wrong. Please try again.

> On the other hand, "standing waves" cannot exist without a "steady state".
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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46. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 13:35:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F018E21.30104@ieee.org>
Source record: 113790

Duane Allen wrote:
> If you set up the condition that on the left side of the discontinuity
> that the two "waves" cancel each other, which results in no energy in
> Pref1, then there is some cancellation of the waves on the right side of
> the discontinuity.

Not "cancellation" on the right side. It is "enhancement" on the right side, i.e. destructive interference on the left side and constructive interference on the right side. You have a sign wrong in the following.

> On the right side of the discontinuity, there is 75W
> which came throught the discontinuity and a cancelling 8.33W
> (33.33W-25W). Hence, my calculation of energy on the right side is 66.67W.

The 8.33W is enhancing, not canceling. You have the sign wrong.

> Plugging this in to your equation, I get
>
> - [0 - 100W(0.25) - (-33.33W)(0.75)]
> = 66.67W - 100W(0.75) - (-33.33W)(0.25)

Using the correct sign:

- [0 - 100W(0.25) - 33.33W(0.75) = 133.33W - 100W(0.75) - 33.33W(0.25)

-[0 - 25W - 25W] = 133.33W - 75W - 8.33W

- [- 50W] = +50W

If there is cancellation (destructive interference) on one side of the impedance discontinuity, there will always be an equal magnitude of enhancement (constructive interference) on the other side of the impedance discontinuity. _Optics_, by Hecht says that must be true to satisfy the Conservation of Energy principle.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

47. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 13:42:04 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <McgMa.40405$pH3.16648@news2.east.cox.net>
Source record: 113791

<rick@rickfrazier.com> wrote in message
news:3F013063.8819A475@rickfrazier.com...
> Spencer:
> > There are different needs for grounds for transmitting/receiving
compared
> to grounds for lightning protection, though generally speaking, a good
> ground system for lightning protection does a fair to good job for hf
> transmitting/receiving as well.
>
>

You can a good ground for lightning that will heat earthworms with
RF.. Bad rule of thumb.

Pete

48. Re: Cargo container of Antenna Tuners. ID?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 14:10:11 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87smpqjq2k.fld@barrow.com>
Source record: 113792

RF_AUDIO@collectiblehelp.com (collectiblehelp.com) wrote:
>Group,
>I found a cargo container of these "OLD" Mil Aircraft antenna tuners.
>I bought 3 truck loads of other old tube gear from these folks but
>passed on these tuners.
>No body knows what they tuned. TRAILING WIRE? I think they are MF/HF.
>Inside are 2 vario-ductors or (vario-couplers),
>fixed caps, lots of HV ceramic switches. Coils are old cloth litz wire
>on bakelite/fiber core forms.
>They are extreemly lightweight for their size. Transmitter Tuning Unit
>TU-10-B
>
>Can these be used for anything worthwhile or just junk?
>Maybe too narrow banded for Amateur use?
>
>Maybe a veteran or aircraft radio buff recognizes these.
>
>Here are 3 of them->
>http://pic3.picturetrail.com/VOL18/68355/167687/28486943.jpg
>
>I took a sample unit apart to inspect.
>I have to buy the whole container or pass.
>They are kind of neat, but that is a lot of tuners to get stuck with.
>Even at $2.50 ea prox.

They are tuning units from BC-375 and BC-191 Radio transmitter
sets designed in the late 1930's and used in B-17, B-24, B-25
and B-26 aircraft. Tuned from 150KHz to 21MHz using various
plugin tuning units, they were made by various manufacturers
(GE, WECO, etc.).

Pictures of complete radio sets:
<http://vrza.dse.nl/wc52/radios.html>
<http://www.kwarc.on.ca/hammond/waryears.html>

Here are some units that have sold recently on eBay.

TU-10-B (Frequency Range 10,000 - 12,500 KC)
<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=2181126252>
<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3020842721>

TU-8-B (Frequency Range 6200 - 7700 KC)
<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3020842715>

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>

Ukpeagvik (Barrow, Alaska) floyd@barrow.com

49. Re: Lightning dangers from Faraday's cage comprimise while storm chasing/spotting?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 14:59:39 UTC
From: Mike Luther <mike.luther@ziplog.com>
Message-ID: <vg38cihuqnb5db@corp.supernews.com>
Source record: 113793

Roger Halstead wrote:

>I have been in situations where I have a far greater concern about
>hail whether in a car, or airplane than I've ever had about
>lightening.
>
Amen, Brother Ben, pass that around and say it again..

>I'd no more than finished the sentence when lightening stuck the power
>pole about 20 feet from us. We bailed.
>
>

There was a PBS documentary on this several months ago I happened to see. Through the modern wonders of sferics and WAN work they were able to document a fascinating and yet very sad story from horizontal lightning in clear air. Per this documentary, a golfer was killed on a course in Colorado from a lightning hit in completely clear air and no storm anywhere they could see.

However, the exact time was noted, and a comparison, in this case, could be made with the area sferics WAN system. At that time there were very few possibilities for this strike, The actual hit could be verified in the system for the unique time involved. The source of the strike was absolutely confirmed, per this TV doc, to be some TWENTY miles away! The strike had traveled some TWENTY miles in clear air before killing the poor fellow on that golf course.

>Roger Halstead (K8RI EN73 & ARRL Life Member)
>www.rogerhalstead.com
>N833R World's oldest Debonair? (S# CD-2)
>
>

You own it? !! Gee .... what a treasure... It isn't, by chance, one of the acrobatic rated versions is it?

>>:-0
>>
>>
>
>
>
--

--> Sleep well; OS2's still awake! ;)

Mike Luther

50. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 15:59:12 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bdsalh$s37$1@news.service.uci.edu>
Source record: 113794

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F00FDF6.2020605@ieee.org...
> Jim Kelley wrote:
> > :-) It's unfortunate you don't understand the difference between an
> > equality, and a law of nature.
>
> As long as you continue to reject the Conservation of Energy principle,
> Jim, we have nothing valid left to discuss.

You're just adding more proof you don't understand the difference between an equality and a law of nature.

> > You cannot arbitrarily draw a boundary and expect that energy will
> > necessarily be conserved within that boundary.

> All energy is conserved. Do you think energy will be destroyed or created
> within that boundary just because you will it to be?

It has nothing to do with me. It's amazing to me that you aren't imbarassed to make such statements in a public forum. Energy is not necessarily conserved within any arbitrary boundary. Your notion of energy conservation is sophomoric.

> > Prove it. Measure V4 on the front side of the impedance discontinuity.
>
> I've done that, Jim. V4^2*Z0 is what heats up the circulator load
resistor.

:-) There is no circulator in the circuit we're discussing. If there was, it would be a different circuit and it would behave differently. Don't you know that?

> If reflected waves transfer no energy, how does the reflected wave heat
> up a resistor?

Obviously the circulator load resistor heats up when energy IS reflected. The circulator load resistor does not heat up when the source matches the load, but inserting a circulator between the match point and the load causes reflections between the source and the match point. There would no longer be an impedance match between the source and the load. Get it?

ac6xg

51. Re: Cecil's Math, i.e. Blunderous Conjecture

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 16:00:21 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bdsanl$s3a$1@news.service.uci.edu>
Source record: 113795

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F00FC9B.1070303@ieee.org...
> Jim Kelley wrote:
> > I quoted it right from Born and Wolfe. How does that
> > make me wrong?
>
> Any equation, quoted completely out of context, is wrong for
> the application. My five year old grandson can copy an equation
> out of a book.

Maybe you can get him to teach you how to.

52. Effect of materials on path loss?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 16:17:37 UTC
From: achilles03@hotmail.com
Message-ID: <fef44ceb.0307010817.2d12a37a@posting.google.com>
Source record: 113796

What are the major factors that contribute to path loss through different mediums/materials? For instance, I know moist air has a higher path loss than dry air.

The reason I ask is that I'm debating whether to transmit from inside an enclosure that is primarily styrofoam (1.5" thick), or if I should make accomodations to extend the antenna beyond the envelope of the container.

Thanks in advance for any advice or insight anyone can offer!
Dave

53. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 16:55:16 UTC
From: richardharrison@webtv.net
Message-ID: <188-3F01BCF4-529@storefull-2318.public.lawson.webtv.net>
Source record: 113799

Wes, KC8SPR wrote:
"If so, how?"

Two coils sharing the same axis and near each other will be closely coupled by shared electrostatic and magnetic lines of force. Impose an r-f signal on one coil and extract it from the second coil.

If a highly conductive sheet of significant size is put perpendicular to the axis of the coils, between them, and solidly grounded, most coupling, electric and magnetic, is eliminated.

Electric coupling is short-stopped and shunted to ground by electric lines of force striking the shield.

Magnetic coupling is short-stopped by induction of current in the shield which opposes the induction (Lenz`s law) and results in a null between the incident and reactive fields.

It is practical to allow magnetic coupling between the (transformer) coils while disallowing electrostatic coupling by using a special shield. In the broadcast transmitters I`ve worked with, the shield simply had many parallel slots cut at equal frequent intervals either from top to bottom or from side to side. The pickets formed from the slicing were firmly grounded at one end but not both. The shield made this way is called a Faraday screen.

Electrostatic lines of force from the adjacent coils sharing an axis terminate on the grounded pickets so that none can directly pass between the coils. So, there`s no capacitive coupling between the coils.

Since one end of the pickets is open-circuit, no induced current can circulate between them. Lenz`s opposing field can not be generated to nullify magnetic coupling between primary and secondary of the coupling transformer formed by the adjacent coils.

There are tens of thousands of examples in U.S. broadcast stations working perfectly at this very moment. You may be listening to a signal sieved through just such a strainer at this moment. I am.

Best regards, Richard Harrison, KB5WZI

54. Re: Antenna field strength question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 17:01:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg3fileru3sk42@corp.supernews.com>
Source record: 113797
Cross-posted to: alt.radio.amateur,fido7.hamradio,nl.radio.amateur,rec.radio,rec.radio.amateur.antenna

The one critical piece of missing information is the frequency or wavelength. Manipulating some equations from King, Mimno, and Wing's _Transmission Lines, Antennas, and Waveguides_, the field necessary to generate a particular power P in a load connected to a receiving antenna is

Erms = (1/WL) * sqrt((240*pi^2*P)/G)

where Erms is the RMS field in V/m, WL is the wavelength in meters, and G is a complex function calculated and graphed in the text. (It's f in the text; I used G to avoid confusion with frequency.) This is for an infinitely thin antenna parallel to the impinging field, terminated with the complex conjugate of its feepoint impedance. For a half wave dipole, G is about 0.82. But a half wave dipole has a gain of 1.64 relative to an antenna with 0 dBi gain. So a field sqrt(1.64) = 1.28 times greater would be required for the 0 dBi antenna. Plugging in the numbers,

Erms = 119.2/WL volts per meter.

It should be possible to confirm this with NEC-2 by modeling a terminated dipole with an applied plane wave source. (EZNEC doesn't have the capability to model the plane wave source.)

Roy Lewallen, W7EL

MCB wrote:
> I would be very grateful if someone could answer the following question:
>
>
>
> For an antenna operating in receive - What field strength present on the
> antenna will result in an power output of 3W? The gain of the antenna is 1
> (0dBi) and perfectly matched into 50ohms.
>
>

55. Re: Effect of materials on path loss?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 17:03:02 UTC
From: richardharrison@webtv.net
Message-ID: <190-3F01BEC6-68@storefull-2318.public.lawson.webtv.net>
Source record: 113800

David Harper wrote:
"For instance, I know moist air has a higher path loss than dry air."

Are you operating below 10 GHz?

Best regards, Richard Harrison, KB5WZI

56. Re: VF of 600 ohm open-wire feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 17:13:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg3ga5a8mgik3f@corp.supernews.com>
Source record: 113798

All three common formulations of antenna modeling software (MININEC, NEC, and MININEC Professional) agree quite closely that the resonant length of a square loop in free space is about 1030/f. I noticed this some time ago, and wondered about the discrepancy between it and the widely believed and repeated value of 1005/f. I got convinced by some folks who made careful measurements that the approximate 1030/f value is indeed correct, for bare wire. If a wire has normally thick plastic insulation, it'll need to be shortened by roughly 3%.

I'm guessing that the 1007/f value you got from EZNEC was that low because of proximity to ground -- if it was a free space value, please contact me, since I've always seen results around 1030/f for free space. Ground will have an effect, so modeling can probably get you closer than using a formula. But sag, stretch, and as Tam says, the difficulty in measuring the wire length accurately, will likely cause some disagreement between model and practice. So expect to do a little tweaking even if you model it first.

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> news:3EFFB2BA.3050406@ieee.org...
>
>>Tarmo Tammaru wrote:
>>
>>>Which formula are you using, 468/f, or 492/f ?
>>
>>1005/f I noticed the problem first on a loop.
>>--
>>73, Cecil http://www.qsl.net/w5dxp
>
>
> Cecil,
> Very interesting. 1005 is what Bill Orr claims you need for the driven
> element of a quad; also what the ARRL claims for a horizontal loop. On the
> other hand, the ARRL claims 1032/f for the circumference of a vertical loop
> made of #18 wire. I have a 3.8 MHz vertical loop, which I first simulated on
> EZNEC. It came up with about 265 feet when using #14 wire. That works out to
> 1007/f. The actual antenna came out to within about 2 feet of that (shorter)
> when using #14 twisted insulated wire. After the antenna had been up about a
> month, I changed the feedpoint from the bottom center to bottom corner. At
> that point I had to whack off about 5 feet. I attributed that to stretching
> and leaves growing on the trees. Now, about 3 years later, resonance has
> moved down to 3695. I am matching with a 1/4 wave section of RG11.

>
> Among other things, there is a real problem in measuring 265 feet of wire,
> while keeping it taut.
>
> Tam/WB2TT
>
>

57. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 17:28:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F01C4BD.80509@ieee.org>
Source record: 113802

Jim Kelley wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
>>As long as you continue to reject the Conservation of Energy principle,
>>Jim, we have nothing valid left to discuss.
>
> You're just adding more proof you don't understand the difference between an
> equality and a law of nature.

Uhhhhh Jim, you are the one who is implying that the energy flowing into
a lossless impedance discontinuity in a transmission line is NOT equal
to the energy flowing out of that impedance discontinuity. So who doesn't
understand the laws of nature? Can you prove your assertion?

> Energy is not necessarily conserved within any arbitrary boundary.
> Your notion of energy conservation is sophomoric.

Energy is necessarily *always* conserved, Jim. Please give us an example
where energy is not conserved.

>>If reflected waves transfer no energy, how does the reflected wave heat
>>up a resistor?
>
> Obviously the circulator load resistor heats up when energy IS reflected.

Just as obviously, the reflected wave must be smart enough to know, ahead of
time, whether to carry energy back from the mismatched load or not. How does
the wave get smart enough to know that, Jim. That wave is even smarter than
you since, from the load location, you cannot tell if a mismatched load is
located in a matched system (or not) by looking only at conditions existing
at the load.

You are located at a load outside the hamshack. You are a pretty bright fellow
and you want to tell the reflected wave whether to carry energy back to the
circulator load resistor or not. Unfortunately, neither you nor the reflected
wave have any way of knowing whether that circulator load resistor is in the
circuit or not. Why are your reflected waves smarter than you are? They have
to be able to sense the existence of that circulator resistor at faster than
light speeds to know whether to carry reflected energy or not.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

58. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 17:30:02 UTC
From: Jack Twilley <jmt+usenet@twilley.org>
Message-ID: <86isqmgnol.fsf@duchess.twilley.org>
Source record: 113801

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>>>>> "Jack" == Jack Twilley <jmt+usenet@twilley.org> writes:

[...]

Jack> Hmm. I wonder if it matters that I'm using VNC instead of
Jack> 'real' X.

Jack> I'll give it a try at work tomorrow.

Nope, still no go. Might be a FreeBSD thing.

Jack.
- --
Jack Twilley
jmt at twilley dot org
http colon slash slash www dot twilley dot org slash tilde jmt slash
-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (FreeBSD)

iD8DBQE/AcUfGPFSfAB/ezgRAr9kAKDLXz3unqP9OwWJ+D/5CTi0ney7tgCeMdK3
4MDBfKryBd2mCQsNUzeztcM=
=6CuD
-----END PGP SIGNATURE-----
```

59. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 17:46:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F01C8F0.20804@ieee.org>
Source record: 113803

Jim Kelley wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>>Any equation, quoted completely out of context, is wrong for
>>the application. My five year old grandson can copy an equation
>>out of a book.
>
> Maybe you can get him to teach you how to.

Oh, I've learned from you all I care to know about quoting
equations out of context and ignoring embarrassing questions.
It is perfectly understandable that you refuse to answer
questions when you know the answers would prove you wrong.

Speaking of embarrassing questions: Your equation said that,
"Pi = Pf + Pr", which I assume means that

Pincident = Pforward + Preflected

So given an impedance discontinuity where s11 = RHO = 0.5,
What is the law of physics mechanism that allows Pr to
be zero when the physical impedance discontinuity possesses
a physical reflection coefficient of 0.5? Please be specific.

There are a good half-dozen embarrassing questions that you
have refused to answer. One wonders why?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

60. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 18:32:00 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307011032.3b612bf2@posting.google.com>
Source record: 113804

Zoran Brlecic <WA7AA@comcast.net> wrote in message news:<3F012DBE.2000802@comcast.net>...
> Dale Parfitt wrote:
>
>
>
> > Could you explain why grounding the dipole helps?
>
>
> Grounding the entire system helps, not (necessarily) the antenna itself,
> by reducing the noise level. A single point ground for all the
> electronics in the shack makes a hell of a difference. My RX noise level
> rises some 10-15 dB when I untie the grounds from the RX, PC, keyer,
> amp, p/s, etc.
>
> 73 ... WA7AA

It shouldn't be making much of a difference though. How will grounding
reduce the noise level? Ground is a noise source. It's actually better
not to be hooked to it in my opinion. Here, with my coax fed dipoles,
adding a shack ground makes no difference in noise on any bands,
except for a slight increase in signal strength on the low bands.
160m, MW, etc. If grounding your station reduces noise, I'd be
wondering how well your balun, choke, etc, is actually working.
I don't use a shack ground at all, and I don't have noise problems.
With a balanced dipole, and properly fed with a balun or choke if
using coax, there should be no reason at all to need a ground to
reduce noise. If it does help, in my opinion, you have an
antenna/feedline decoupling problem. MK

61. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 18:43:44 UTC
From: donut <none@none.com>
Message-ID: <Xns93AB75F948F6Adonut@216.102.43.227>
Source record: 113805

"rick@rickfrazier.com" <rick@rickfrazier.com> wrote in
news:3F013063.8819A475@rickfrazier.com:

> Where I live (Hawaii) the ground is nearly solid lava, which is both a
> poor conductor and very very difficult to drive anything into...

I also live near a volcano. The ground is lava ash - not hard, but very
poor moisture retention, and lousy ground conductivity, except when wet.
Radio reception is not particularly good here, even with the elevation.

The only way to ground effectively here is a ground plane radial network.
It also helps to keep the ground wet around it.

62. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 18:59:12 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F01DA00.25D4414F@uci.edu>
Source record: 113807

W5DXP wrote:
> As long as you reject the wave reflection model, we will have nothing
> left worth discussing.

The wave reflection model is fine. You're extension of the wave reflection model to an energy analysis is not. If you don't want to discuss it any further all you have to do is stop responding to my posts. As I have said before, I am happy to end the discussion - particularly if you would allow yourself to let it end in a gentlemanly fashion.

73 de AC6XG

63. Schematic wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 18:59:17 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f01d9f4$0$48896$edfadb0f@dtext02.news.tele.dk>
Source record: 113806

Hello

I am building an antenne like this for the 2 meter band

http://www.n9vxq.org/bcara/2mtrss.html

and I need a schematic for the junction box, anybody
that knows where to find it ???

Regards Max

64. Re: VF of 600 ohm open-wire feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 19:04:53 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Hvqdnf-9frTKRpyiXTWJhg@comcast.com>
Source record: 113808

Roy,

I think my antenna is not a good example, because it is not square, but rather 80 x60.5 x 65 x 60.5 . I looked at the EZNEC file, and it was modeled with the bottom (80ft) wire at 15 feet, top (65ft) wire at 70. Trees don't always grow where you want them to. Note that the length is 266, not 265 as I thought.

You seem to be agreeing with Cecil that insulation will lower resonance. Does the insulation make any difference if the wire is in free space?

Tam/WB2TT

"Roy Lewallen" <w7el@eznec.com> wrote in message news:vg3ga5a8mgik3f@corp.supernews.com...
> All three common formulations of antenna modeling software (MININEC,
> NEC, and MININEC Professional) agree quite closely that the resonant
> length of a square loop in free space is about 1030/f. I noticed this
> some time ago, and wondered about the discrepancy between it and the
> widely believed and repeated value of 1005/f. I got convinced by some
> folks who made careful measurements that the approximate 1030/f value is
> indeed correct, for bare wire. If a wire has normally thick plastic
> insulation, it'll need to be shortened by roughly 3%.
>
> I'm guessing that the 1007/f value you got from EZNEC was that low
> because of proximity to ground -- if it was a free space value, please
> contact me, since I've always seen results around 1030/f for free space.
> Ground will have an effect, so modeling can probably get you closer than
> using a formula. But sag, stretch, and as Tam says, the difficulty in
> measuring the wire length accurately, will likely cause some
> disagreement between model and practice. So expect to do a little
> tweaking even if you model it first.
>
> Roy Lewallen, W7EL

65. Tuning your HF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 19:20:08 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <59lMa.918$eW6.428@fe03.atl2.webusenet.com>
Source record: 113809

If you want to set up your IC 706's antenna and don't want to pay $$$$$$$
for one of those fancy
"auto-positioners", then why not try one of my "tuner" modules and save that
money. Works with
base antenna manual tuners and, particularly, screwdrivers. Only $17 +
shipping--buy two and
save shipping charges AND && for $25!

73

Jerry.

66. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 19:20:15 UTC
From: richardharrison@webtv.net
Message-ID: <19655-3F01DEEF-173@storefull-2313.public.lawson.webtv.net>
Source record: 113812

Pete wrote:
"You can (have) a good ground for lightning that will heat earthworms with RF."

I`ve tried to think how?

A good lightning ground bypasses earth capacitance with low resistance. A good lightning ground must have low reactance in addition to low resistance. Lots of ground radials make a good radio ground. They also make a great lightning ground. A lone ground rod makes a lousy radio ground. It also makes a lousy lightning ground.

Much of a lightning stroke`s energy is in its abrupt start and stop. That`s why it generates a wide r-f spectrum. Heard any radio static lately?
A large inductance may vitiate an r-f ground. It will just as surely vitiate a lightning ground with the difference that it can`t be tuned out of the lightning ground.

Uncle Peter may be mistaken.

Best regards, Richard Harrison, KB5WZI

67. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 19:40:16 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <jN6dnUKMab0_fpyiRTvU2Q@crocker.com>
Source record: 113810

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F00FAD6.8090806@ieee.org...
> Jim Kelley wrote:
> > Your mistake is the assumption that energy is reflected when it is not,
>
> Energy is *always* reflected from a mismatched load. If energy was not
> reflected from a mismatched load, standing waves couldn't exist. Your
> mistake is in rejecting the wave reflection model. Until you accept that
> model, we don't have anything left to discuss.

"Energy" is *NEVER* reflected! current is reflected, electrons are what is
moving not 'energy'. power is calculated from current, and energy is
integrated from power... at each step of going from current to power to
energy you lose vital information about what is happening at the physical
level, no wonder it is so confusing.

68. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 19:41:30 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <wtmdnTAhJo52fpyiRTvU2Q@crocker.com>
Source record: 113811

"Jim Kelley" <jwkelley@uci.edu> wrote in message
news:3F00E020.95330617@uci.edu...
> W5DXP wrote:
> > The sun being the center of the solar system didn't make any sense to
> > the Catholic priests either.
>
> Now that you mention it, your model is rather like that of the
> geocentric model of the universe. :-)
>
> > > you can add currents, and you can add voltages, but you can not just
add
> > > powers.
>
> > Hmmmmmm, you believe we cannot add scalar values? How about one quart of
> > water plus one quart of water?

sure, you can add scalars, but after you add them you can't expect them to
represent the vector quantities they were calculated from.

69. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 20:00:39 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bdsp9b$34t$1@slb9.atl.mindspring.net>
Source record: 113816

Cecil:

[snip]
> > But "standing waves" are a purely steady state phenomena and according
to
> > your recent postings the steady state cannot exist.
>
> Standing waves certainly exist with modulated waves which are not steady-
> state. Feed a TV receiver with 1000 ft of open-wire line. You have
ghosting
> indicating there is no steady-state AND you have measurable standing
waves.
> So your following premise is wrong. Please try again.
>
> > On the other hand, "standing waves" cannot exist without a "steady
state".
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

Heh, heh... come on Cecil, you can't have it both ways!

Standing waves only "stand" because" of a steady state condition.

To "stand" things must first be "steady".

During the transient [build up] period when incident waves and their echos
are
sloshing back and forth "longitudinally" along the line bouncing off the
impedance
discontinuities and such there are no "standing" waves, only "travelling
waves".

After the line has become fully charged and for all practical purposes has
reached
the final "steady state" the energy "stored" on/in the line is then sloshing
from side to
side "transversally"alternatng between the distributed line capacitance
[electric field]
and distributed inductance [magnetic field] there is an observable steady
state standing
wave which is a manifestation of that transversal vibration of energy and
which stores
that energy on the line.

What's more, during the steady state regime, that stored energy in the standing wave
ain't goin nowhere [that's why it's called "standing"] until the prime mover excitation is
removed from the line and the line is allowed to discharge!

It just makes no sense to carry transient terminology and analysis through into a
steady state analysis because even though all the equations are still mathematically
correct they do not describe the physics of that steady state regime.

--
Peter K1PO

70. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 20:07:06 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F01E9EA.D3D12D40@uci.edu>
Source record: 113813

W5DXP wrote:
>
> Duane Allen wrote:
> > Is there only one value of RHO? It seems to me that in one direction
> > there is RHO and in the other direction there is -RHO. Does this affect
> > the construstion of your model?
>
> There are two values for RHO, the voltage reflection coefficient, but
> there is only one value for RHO^2, the power reflection coefficient.

From pg. 63, Born and Wolf:

For normal incidence, cos theta = -1, and n1=1 (Z0=50), then r12 and r23 are given by r12=n1-n2/n1+n2, r23=n2-n3/n2+n3, and reflectivity R = ((r12-r23)/(1-(r12*r23)))^2 = (((n1*n3) - n2^2)/((n1*n3)+n2^2))^2. "The reflectivity is then a maximum or a minimum according to whether the refractive index [~impedance] of the film [n2=1.22, ~Z1=150] is greater or smaller than the refective index of the last medium [n3=1.5, ~ZL=450]."
In the reflected direction the indices are in the reverse order.

In other words R for the matching network is a minimum in the transmitted direction and a maximum in the reflected direction. Pretty much exactly what Walter Maxwell has said. In other words, no energy is reflected back toward the source from the first boundary, and any energy reflected by the load is 100% re-reflected by the back side of the second boundary.

But Cecil will claim this is only a steady state analysis and is therefore......irrelevant? The seductive part is the accuracy I suppose.
The point is that any detailed energy analysis of what goes on within the boundaries must be completely consistant with the steady state analysis. The steady state analysis precludes energy reflected from the load from passing back through the second boundary.

73, Jim AC6XG

71. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 20:10:54 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F01EACE.7C9F8C10@uci.edu>
Source record: 113814

W5DXP wrote:
> Standing waves certainly exist with modulated waves which are not steady-
> state.

That simply illustrates the difference between standing waves and
stationary waves. Standing waves aren't necessarily stationary.

73, Jim AC6XG

72. Re: VF of 600 ohm open-wire feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 20:29:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg3rpaj7kuit07@corp.supernews.com>
Source record: 113815

Insulation does lower resonance. So to bring resonance back to where you want it, or where EZNEC predicts, you have to shorten the antenna slightly compared to the model. Yes, insulation does make a difference even when the antenna is in free space. The effect is essentially independent of the environment.

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> Roy,
>
> I think my antenna is not a good example, because it is not square, but
> rather 80 x60.5 x 65 x 60.5 . I looked at the EZNEC file, and it was modeled
> with the bottom (80ft) wire at 15 feet, top (65ft) wire at 70. Trees don't
> always grow where you want them to. Note that the length is 266, not 265 as
> I thought.
>
> You seem to be agreeing with Cecil that insulation will lower resonance.
> Does the insulation make any difference if the wire is in free space?
>
> Tam/WB2TT

73. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:21:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F01FB61.EBFF6C24@uci.edu>
Source record: 113817

W5DXP wrote:
> What mechanism of physics keeps a
> physical impedance discontinuity from causing a reflection from the
> incident wave? Please be specific.

Your paper describes a device which does that. Waves superposition?
Pref=P3+P4-2*sqrt(P3*P4)? Is that specific enough for you?

73 de AC6XG

74. Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:22:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg3us94l16bt73@corp.supernews.com>
Source record: 113818

After years of getting my coax whacked with the lawnmower, I'm going to bury it. I plan on burying some PVC water pipe and pulling the cable through. I'd appreciate any suggestions about how to make the installation trouble free. I can keep rain out with some U fittings at the ends. But am I likely to have water accumulate from condensation? If so, what's the best way to deal with it -- particularly considering that the ground here is completely saturated with water for about half the year? Can I just make sure the coax is in good condition and ignore water in the pipe? Any other suggestions?

I'll initially be running one piece of RG-213 and a multi-conductor control cable for a remote relay box, but want to leave room for a few other cables in the future.

Thanks!

Roy Lewallen, W7EL

75. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:38:43 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F01FF83.9050200@get.lost>
Source record: 113719

Mark Keith wrote:

>> > Could you explain why grounding the dipole helps?
>>
>>Grounding the entire system helps, not (necessarily) the antenna itself,
>>by reducing the noise level. A single point ground for all the
>>electronics in the shack makes a hell of a difference. My RX noise level
>>rises some 10-15 dB when I untie the grounds from the RX, PC, keyer,
>>amp, p/s, etc.
>
> It shouldn't be making much of a difference though. How will grounding
> reduce the noise level? Ground is a noise source.

A lousy, 100-ft line tied to a rusted shallow rod, maybe, because it
resonates, but a proper (short, low-impedance) ground can never generate
noise.

> It's actually better
> not to be hooked to it in my opinion. Here, with my coax fed dipoles,
> adding a shack ground makes no difference in noise on any bands,
> except for a slight increase in signal strength on the low bands.
> 160m, MW, etc. If grounding your station reduces noise, I'd be
> wondering how well your balun, choke, etc, is actually working.

Baluns and chokes have nothing to do with it (although most of my PC's
cables have dozens of snap-on chokes, btw). It is all the noise
generating devices present within the shack that need their grounds tied
together to a single point ground rod and then off to a good ground
outside. All these digital devices with SW range clocks create plenty of
harmonics and loop currents through the various cabling around the
receiver.

> I don't use a shack ground at all, and I don't have noise problems.

Well, here's what's grounded in my shack besides my rig and amp:

PC, radio i/f, electronic keyer, 12V supply

And here's more noise causing equipment that cannot be grounded directly
(but actually is by grounding the PC):

scanner, Laserjet, cable modem, router, laptop with cradle

My shack is not an ideal situation, mind you, since the antenna is
fairly close to the house, but then again, that is more of a rule than
an exception for most hams.

> With a balanced dipole, and properly fed with a balun or choke if
> using coax, there should be no reason at all to need a ground to
> reduce noise. If it does help, in my opinion, you have an
> antenna/feedline decoupling problem. MK

Probably, although that should not make a difference for receiving. All I know is, grounding has always been good for me. Especially a single point ground in the shack.

73 ... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

76. Re: Effect of materials on path loss?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:39:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg3vrppq765e5b@corp.supernews.com>
Source record: 113721

The factors are permittivity (dielectric constant), conductivity, and frequency. Styrofoam has a negligible loss up to several GHz at least, probably tens of GHz.

Note that if the styrofoam is very close to or in contact with the antenna, it might cause slight detuning because of its dielectric constant.

Roy Lewallen, W7EL

David Harper wrote:
> What are the major factors that contribute to path loss through
> different mediums/materials? For instance, I know moist air has a
> higher path loss than dry air.
>
> The reason I ask is that I'm debating whether to transmit from inside
> an enclosure that is primarily styrofoam (1.5" thick), or if I should
> make accomodations to extend the antenna beyond the envelope of the
> container.
>
> Thanks in advance for any advice or insight anyone can offer!
> Dave

77. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:39:32 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f01ff80$0$48904$edfadb0f@dtext02.news.tele.dk>
Source record: 113720

Hello Roy

> I'll initially be running one piece of RG-213 and a multi-conductor
> control cable for a remote relay box, but want to leave room for a few
> other cables in the future.

Leave the pipe, just burried them as they are, if you can lay bricks
on top to prevent digging in them. I have cabels that have been in
the ground for over 15 years and they looks better than them on
my mast.

Regards Max

78. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:56:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F02037D.7040102@ieee.org>
Source record: 113724

Jim Kelley wrote:
> W5DXP wrote:
>>As long as you reject the wave reflection model, we will have nothing
>>left worth discussing.
>
> The wave reflection model is fine.

The wave reflection model requires that waves contain energy,
contrary to your assertions.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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79. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:56:58 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F0203C9.10200@get.lost>
Source record: 113722

Roy Lewallen wrote:
> After years of getting my coax whacked with the lawnmower, I'm going to
> bury it. I plan on burying some PVC water pipe and pulling the cable
> through. I'd appreciate any suggestions about how to make the
> installation trouble free. I can keep rain out with some U fittings at
> the ends. But am I likely to have water accumulate from condensation? If
> so, what's the best way to deal with it -- particularly considering that
> the ground here is completely saturated with water for about half the
> year? Can I just make sure the coax is in good condition and ignore
> water in the pipe? Any other suggestions?

From what I've read in other forums, there is no way to prevent
moisture from entering the pipe one way or another, so use a
non-corrugated conduit and try to slope it either toward the house, the
tower or both. When I get around to doing this, I'll bury a 4" diameter
pipe, then I'll run the coax in a 1" conduit and the control cables in
another 1" conduit and then pull the whole thing through the 4" pipe.
Then seal the 4" pipe to stop bugs and rodents.

> I'll initially be running one piece of RG-213 and a multi-conductor
> control cable for a remote relay box, but want to leave room for a few
> other cables in the future.

Wouldn't you be better off with LMR-400? Only slightly more expensive
and almost 50% less attenuation than the RG-213? You can even get
LMR-600 (65% less attenuation) for less than $1/ft if you shop carefully.

73 ... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

80. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 21:56:59 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F020299.CC7DDBC9@gte.net>
Source record: 113723

Roy Lewallen wrote:

> After years of getting my coax whacked with the lawnmower, I'm going to
> bury it. I plan on burying some PVC water pipe and pulling the cable
> through. I'd appreciate any suggestions about how to make the
> installation trouble free. I can keep rain out with some U fittings at
> the ends. But am I likely to have water accumulate from condensation? If
> so, what's the best way to deal with it -- particularly considering that
> the ground here is completely saturated with water for about half the
> year? Can I just make sure the coax is in good condition and ignore
> water in the pipe? Any other suggestions?
>
> I'll initially be running one piece of RG-213 and a multi-conductor
> control cable for a remote relay box, but want to leave room for a few
> other cables in the future.
>
> Thanks!
>
> Roy Lewallen, W7EL

Hi Roy,
Without pressurizing I don't think we can keep condensation out. I leave the ends open to breathe (but pointed down so rain cannot enter). Many years of LMR400 in the ground and the loss to my 1296 MHz EME dish shows attenuation to be the same as day of installation.

Dale W4OP

81. Re: Effect of materials on path loss?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 22:03:33 UTC
From: achilles03@hotmail.com
Message-ID: <fef44ceb.0307011403.529bf8ee@posting.google.com>
Source record: 113725

richardharrison@webtv.net (Richard Harrison) wrote in message news:<190-3F01BEC6-68@storefull-2318.public.lawson.webtv.net>...
> David Harper wrote:
> "For instance, I know moist air has a higher path loss than dry air."
>
> Are you operating below 10 GHz?
>
> Best regards, Richard Harrison, KB5WZI

Yes, like in the 2m to 70cm range.

Dave

82. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 22:05:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F0205B0.1010106@ieee.org>
Source record: 113726

David Robbins wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> news:3F00FAD6.8090806@ieee.org...
>
>>Jim Kelley wrote:
>>
>>>Your mistake is the assumption that energy is reflected when it is not,
>>
>>Energy is *always* reflected from a mismatched load. If energy was not
>>reflected from a mismatched load, standing waves couldn't exist. Your
>>mistake is in rejecting the wave reflection model. Until you accept that
>>model, we don't have anything left to discuss.
>
> "Energy" is *NEVER* reflected! current is reflected, electrons are what is
> moving not 'energy'.

The wave energy is moving at the speed light. Electrons cannot move at
the speed of light.

It is impossible to reflect only the current part of a wave. There's always
a voltage component involved in the reflection. The power in the reflection
is |V*I| in joules/sec. Those joules represent energy in the reflected wave
E-field and H-field.

One more example of seduction by the steady-state model. "No such thing as
reflected power."" No such thing as reflected energy.""No such thing as
reflections."
--
73, Cecil http://www.qsl.net/w5dxp

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83. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 22:09:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F0206A3.8070109@ieee.org>
Source record: 113727

David Robbins wrote:
> "Jim Kelley" <jwkelley@uci.edu> wrote:
>
>>W5DXP wrote:
>>>Hmmmmmm, you believe we cannot add scalar values? How about one quart of
>>>water plus one quart of water?
>>
> sure, you can add scalars, but after you add them you can't expect them to
> represent the vector quantities they were calculated from.

That's exactly the problem. That's why the QEX article says
75W + 8.33W = 133.33W, assuming that the powers represent
the voltage vector quantities. That's one of my objections.
75W + 8.33W does NOT equal 133.33W under any circumstances.
--
73, Cecil http://www.qsl.net/w5dxp

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84. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 22:13:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F02076D.4020506@ieee.org>
Source record: 113728

Jim Kelley wrote:
>
> W5DXP wrote:
>>Standing waves certainly exist with modulated waves which are not steady-
>>state.
>
> That simply illustrates the difference between standing waves and
> stationary waves. Standing waves aren't necessarily stationary.

My point exactly and in direct contradiction to what Peter said.
--
73, Cecil http://www.qsl.net/w5dxp

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85. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 22:41:34 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F020E1E.B79821BB@cwis.net>
Source record: 113729

Roy,
Just a suggestion or two. Use a pipe larger than you
think you will need, cuz you'll always wish you had room
for just one more cable run. If the pipe comes out inside
your house, be sure to stuff it with something to keep the
'critters' out! Using two 45 degree 'elbows' is better than
using one 90 degree 'elbow', when you start pulling cables,
makes it lots easier. Also, don't glue the last elbow (or
two) at the tower, just another thing that makes running
cables easier.
From the sound of it, your pipe is going to have moisture
or water in it no matter what you do. Depending on how
'fancy' you want to get, keeping air moving through it from the
indie toward the tower can help. Other wise, just be sure not
to have any joints/connections inside the pipe.
Oh, make a 'loop' of fairly heavy cord to drag the cables
through the pipe and never remove it! (Sort of like the
'clothes
lines' on a pully?) Remember to replace it every year or so.
Much easier than trying to push a rope...
'Doc

86. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 22:52:36 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0210B4.5609AA2F@uci.edu>
Source record: 113730

W5DXP wrote:
> The wave reflection model requires that waves contain energy,
> contrary to your assertions.

Can you cite a reference on that? Especially the "contain energy"
part. Thanks.

ac6xg

87. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 23:21:18 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <mp54gv40k4lrddfpkskposjte7h9gu56a5@4ax.com>
Source record: 113731

On Tue, 01 Jul 2003 02:06:45 GMT, Zoran Brlecic <...WA7AA...@get.lost>
wrote:

>G. Doughty wrote:
>> I am monitoring 10m right now and am noticing something about my rig. I have
>> an htx 10 that seems to have a ground problem. I do not have the dipole
>> grounded. nor is the radio but when I touch the mic cord the squelch clears up
>> and I can hear much better. Is this a grounding problem
>
>Yes.
>
>> and if so, what is the
>> best way to ground it? Sometimes when the mike gets closer to the radio it
>> clears up too.
>
>
>The best way is with as short as possible heavy braid to a system of
>interconnected 10 ft copper ground rods.
>

Don't forget to electrically bond your new ground to the electric
service entrance ground.

>An acceptable way, especially for receiving only, is to a simple ground
>rod, or to a water pipe (provided the pipe is grounded). Even grounding
>to the electrical power ground can help.
>
>
>73 .... WA7AA

Russ

88. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 23:26:20 UTC
From: k9sqg@aol.com
Message-ID: <20030701192620.09751.00002081@mb-m01.aol.com>
Source record: 113733

Roy,

I used PVC pipe to protect the coax going to my vertical. Condensation will not be a problem, it can't accumulate enough to cause bursting of the pipe and most quality coax of the direct burial type will further protect against it. Worked out for over 10 years for me.

73s,

Evan

89. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 23:32:43 UTC
From: Eskay <sieb_kNOS@PAMyahoo.ca>
Message-ID: <3F021A1B.9010805@PAMyahoo.ca>
Source record: 113732

Instead of using plumbing pipe use Electrical conduit.
You can get sweep 90 degree bend for that and also what is called a
weatherhead to bring the cable out.
The top is removeable for future cables.
73 de Eskay...

Roy Lewallen wrote:
> After years of getting my coax whacked with the lawnmower, I'm going to
> bury it. I plan on burying some PVC water pipe and pulling the cable
> through. I'd appreciate any suggestions about how to make the
> installation trouble free. I can keep rain out with some U fittings at
> the ends. But am I likely to have water accumulate from condensation? If
> so, what's the best way to deal with it -- particularly considering that
> the ground here is completely saturated with water for about half the
> year? Can I just make sure the coax is in good condition and ignore
> water in the pipe? Any other suggestions?
>
> I'll initially be running one piece of RG-213 and a multi-conductor
> control cable for a remote relay box, but want to leave room for a few
> other cables in the future.
>
> Thanks!
>
> Roy Lewallen, W7EL
>

90. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 23:42:38 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F021C6E.8EC0AC6F@uci.edu>
Source record: 113734

W5DXP wrote:
> Speaking of embarrassing questions: Your equation said that,
> "Pi = Pf + Pr", which I assume means that
>
> Pincident = Pforward + Preflected

Why should I be embarassed about the Law of Conservation of Energy?

> So given an impedance discontinuity where s11 = RHO = 0.5,
> What is the law of physics mechanism that allows Pr to
> be zero when the physical impedance discontinuity possesses
> a physical reflection coefficient of 0.5? Please be specific.

You want me to ignore the other reflective surfaces in the system like
you have been? I've been plenty specific on this point. But your
squelch has been set to max all throughout this discussion.

> There are a good half-dozen embarrassing questions that you
> have refused to answer. One wonders why?

If either of us knew what you were talking about, maybe one of us would
know. :-)

73, ac6xg

91. Antenna??<Answer>

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 23:46:59 UTC
From: jackinariz@webtv.net
Message-ID: <22449-3F021D73-549@storefull-2132.public.lawson.webtv.net>
Source record: 113743

About a week ago I asked if anyone recognized a certain antenna......It was a three element vertical......With each element 120° apart....Several of you said it sounds like an old CB Super Scanner........And you were right....This antenna fascinates me as it is a beam with no rotor......It has a control box in the shack and a relay at the mast......In one position you make a radiator and the other two elements become reflectors and so forth in the other two directions......When you select all three elements the antenna becomes an Omni....Being a newbie I find this incredible.....Anyone have any experience with this antenna? good or bad........Anyone know if this antenna is available anywhere? Thanks Jack D.

92. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 23:49:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F021E08.7060800@ieee.org>
Source record: 113736

Jim Kelley wrote:
> W5DXP wrote:
>>What mechanism of physics keeps a
>>physical impedance discontinuity from causing a reflection from the
>>incident wave? Please be specific.
>
> Your paper describes a device which does that. Waves superposition?
> Pref=P3+P4-2*sqrt(P3*P4)? Is that specific enough for you?

P3 is the power in one of the rearward-traveling reflected waves
that you say isn't there.

P4 in the power in the other rearward-traveling reflected wave
that you say isn't there.

2*sqrt(P3*P4) is the destructive interference term that feeds the
constructive interference on the other side of the impedance
discontinuity which you say isn't there.

P3 = |s11*a1|^2 = Pfwd1*RHO^2 power associated with wave, s11*a1

P4 = |s12*a2|^2 = Pref2(1-RHO^2) power associated with wave, s12*a2

s11*a1 and s12*a2 engage in wave cancellation (destruction) such
that b1 = s11*a1 + s12*a2 = zero.

P stands for "power" and you say those two rearward-traveling
reflected waves don't possess any power.

So you need to invent another mechanism. That one proves virtually
everything you have said is wrong.
--
73, Cecil http://www.qsl.net/w5dxp

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93. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-01 23:50:20 UTC
From: Jack Smith <jsmith@mnsinc.com>
Message-ID: <n674gvg1vscsq8arkgn5ncc9o9k8gfh32d@4ax.com>
Source record: 113735

On Tue, 01 Jul 2003 14:22:16 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>After years of getting my coax whacked with the lawnmower, I'm going to
>bury it. I plan on burying some PVC water pipe and pulling the cable
>through. I'd appreciate any suggestions about how to make the
>installation trouble free. I can keep rain out with some U fittings at
>the ends. But am I likely to have water accumulate from condensation? If
>so, what's the best way to deal with it -- particularly considering that
>the ground here is completely saturated with water for about half the
>year? Can I just make sure the coax is in good condition and ignore
>water in the pipe? Any other suggestions?
>
>I'll initially be running one piece of RG-213 and a multi-conductor
>control cable for a remote relay box, but want to leave room for a few
>other cables in the future.
>
>Thanks!
>
>Roy Lewallen, W7EL

I've had 6 runs of 9913 buried in a 4" PVC pipe for 16 years without
any problem, about a 75 foot run. It's about two feet down and rests
on a gravel bed. At the tower end, I have an inverted "U"
weatherhead. At the house end, the pipe runs through the concrete wall
in the walk-out basement through two 90 degree bends, sort of a
reversed "Z". Otherwise, no special considerations for condensation.
I'm in Virgnia, near Washington DC and we get plenty of rain and it's
cold enough in the winter to freeze. I periodically check the
feedline for loss and haven't seen any problems.

Of course, leave a messenger rope in place should you wish to run
additional feedlines.

Jack K8ZOA

94. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:06:22 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bdt7lu$2si$1@sparta.btinternet.com>
Source record: 113737

For economic reasons plastic sheaths of underground phone cables replaced lead sheaths many many years ago without ingress of moisture. At least they did in the old British Post Office in the 1950's. (There was a small increase in noise induced from adjacent services such as railways and tramways.)

Phone cables are drawn into earthenware ducts only to provide mechanical protection and to allow easy replacement by different cable types when necessary. Ducts regularly contain running rain water without any effect on cable insulation which is maintained at many thousands of megohms per mile per wire.

Cables are often kept at a constant elevated dry air pressure by pumps at the terminal stations. This serves two purposes - if the duct and cable is damaged by workmen working on on adjacent services, such as water or electricity supplies, water is kept out of the cables and they carry on working normally until a repair can be organised several days later if necessary.

Also at intervals of a few hundred feet, a pressure operated switch is connected across a spare telephone pair of wires in the cable. If a hole should occur in the plastic sheath then pressure falls in the near vicinity and the reduced internal air pressure allows the nearest switch to place a short-circuit across the cable pair. An alarm is sounded at the terminal station, the time is recorded, and the repair man is called out of bed or wherever he may be.

The resistance of the short-circuited pair is measured and the distance in yards to the short-circuit is accurately determined.

Air diffuses fairly slowly along the cable. The first short-circuit to occur is the one nearest to the cable leak. The next short circuit occurs some time later on the other side of the leak. By juggling with resistance measurements and time, the location of the cable damage can be sufficiently accurately located. But phone traffic continues without interruption - air pressure keeping water at bay.

Having said all that, the fastest way of finding where the damage is is to drive along the route and look for somebody digging holes. If you can catch them in the act you may be able to obtain payment for the damage.

Many deep water submarine cables are plasic-sheathed - water pressure is tons per square inch. There's one peculiar effect - water disassociates under high pressure and pure hydrogen diffuses into polyethylene. If there are air spaces in a cable after a number of years high pressure hydrogen accumulates. Soon after ww2 a German undersea coax cable was being repaired

by a British cable-repair ship. It was picked up from the sea bottom and an undamaged length was laid across the deck. The coax insulation was partly air-spaced. The cable jointer had a blow-lamp roaring away. The jointer sawed into the cable and suddenly there was a great flare of burning hydrogen. He was not severely burned. He thought he had cut into a north sea gas main before oil had been discovered there. That's how diffusion of hydrogen through polyethylene was discovered. No Ph.D was awarded.

Why not check with cable manufacturers how fast ordinary water percolates through ordinary pvc buried directly in your wet back yard? There may be special grades. How long do you want the stuff to last anyway ?

Reg.

95. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:07:10 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <qM6dnWvVQYmsv5-iRTvU2Q@crocker.com>
Source record: 113738

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F0205B0.1010106@ieee.org...
> David Robbins wrote:
> > "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> > news:3F00FAD6.8090806@ieee.org...
> >
> >>Jim Kelley wrote:
> >>
> >>>Your mistake is the assumption that energy is reflected when it is not,
> >>
> >>Energy is *always* reflected from a mismatched load. If energy was not
> >>reflected from a mismatched load, standing waves couldn't exist. Your
> >>mistake is in rejecting the wave reflection model. Until you accept that
> >>model, we don't have anything left to discuss.
> >
> > "Energy" is *NEVER* reflected! current is reflected, electrons are what
is
> > moving not 'energy'.
>
> The wave energy is moving at the speed light. Electrons cannot move at
> the speed of light.
>
who said electrons were trying to move at the speed of light? i said
electrons are moving, i didn't say how fast... the point is that its the
electrons moving that we call current, that is the basic element and proper
starting point for discussing this stuff.

> It is impossible to reflect only the current part of a wave. There's
always
> a voltage component involved in the reflection. The power in the
reflection
> is |V*I| in joules/sec. Those joules represent energy in the reflected
wave
> E-field and H-field.

ah, but you only need to analyze EITHER the voltage OR the current, either
one is sufficient to completely specify a solution. Power or energy
computations are not sufficient to solve transmission line problems. As i
have said before, you start with current or voltage, you compute power from
that and lose phase information in the process, then you integrate power
over time to get energy, throwing away more information in the process...
then you can conserve energy, if you include the whole system with all
sources and sinks. remember the old refrigerator problem.

>
> One more example of seduction by the steady-state model. "No such thing as
> reflected power."" No such thing as reflected energy.""No such thing as
> reflections."

ah yes, the rant against the sinusoidal steady state case assumptions, this just goes to show how little you really understand of circuit analysis. you keep ranting against this because you don't understand the proper way to use it, if you did you would understand why power analysis is neither necessary nor very useful... I'll bet you even like to try to analyze complex matching problems with swr meter readings.

96. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:09:09 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <pb84gvgilp4k3dvmt404d07cim2qijirba@4ax.com>
Source record: 113739

On 30 Jun 2003 19:24:43 GMT, nightowls627@aol.comnojunk (G. Doughty)
wrote:

>I am monitoring 10m right now and am noticing something about my rig. I have
>an htx 10 that seems to have a ground problem. I do not have the dipole
>grounded. nor is the radio but when I touch the mic cord the squelch clears up
>and I can hear much better.

What do you mean when you say the squelch clears up? With the squelch,
the sound should be muted when there is not enough signal to break it,
but stronger signals should break the squealch easily. Is there a knob
to adjust the level of the squelch?

I don't think this has anything to do with grounding, or the lack of
one, especially if you are just receiving and not transmitting.

Bob
k5qwg

> Is this a grounding problem and if so, what is the
>best way to ground it? Sometimes when the mike gets closer to the radio it
>clears up too.
>
>I am not transmitting, just monitoring
>
>G. Doughty
>KI4BBL
>remove nojunk to email

97. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:13:26 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0223A6.27B6365F@uci.edu>
Source record: 113742

W5DXP wrote:
> Uhhhhh Jim, you are the one who is implying that the energy flowing into
> a lossless impedance discontinuity in a transmission line is NOT equal
> to the energy flowing out of that impedance discontinuity.

I'm sorry, Cecil, but that's an absolute lie. I have never implied
anything of the kind.

> So who doesn't
> understand the laws of nature? Can you prove your assertion?

Why don't you read a physics book, just like the rest of us.

> > Energy is not necessarily conserved within any arbitrary boundary.
> > Your notion of energy conservation is sophomoric.

> Energy is necessarily *always* conserved, Jim.

Read all of the words to yourself out loud, Cecil. Energy is not
necessarily conserved in an open system. When you draw a boundary in
such a way that the system within it is open, energy probably will not
be conserved within the boundary. Really basic stuff. Your network is
an open system that happens to be an example in which energy is
conserved within the boundary around it. But your equation describing
the equality between influx and outflux is NOT the Law of Conservation
of Energy. It is simply consistant with conservation of energy.

> Please give us an example
> where energy is not conserved.

Draw a boundary around a power plant, and see if you can prove that
energy within that boundary is conserved. (I thought I already gave
that example.)

> > Obviously the circulator load resistor heats up when energy IS reflected.

> Just as obviously, the reflected wave must be smart enough to know, ahead of
> time, whether to carry energy back from the mismatched load or not.

Ahead of what time? I don't understand your dilema here.

> You are located at a load outside the hamshack. You are a pretty bright fellow
> and you want to tell the reflected wave whether to carry energy back to the
> circulator load resistor or not. Unfortunately, neither you nor the reflected
> wave have any way of knowing whether that circulator load resistor is in the
> circuit or not. Why are your reflected waves smarter than you are? They have
> to be able to sense the existence of that circulator resistor at faster than
> light speeds to know whether to carry reflected energy or not.

Here's a simply way for you to understand this. (Requisite: simple.) Does the wave have any place that it can go? If yes, then it has a place to which it can transfer energy. If no, then it doesn't have a place to which it can transfer energy. When you put a circulator in circuit you are doing two things: one, you're eliminating the wave cancellation; and two you're providing a place to which energy can be transferred.

73, Jim AC6XG

98. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:15:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F02241B.4070205@ieee.org>
Source record: 113741

Jim Kelley wrote:
>
> W5DXP wrote:
>
>>The wave reflection model requires that waves contain energy,
>>contrary to your assertions.
>
> Can you cite a reference on that? Especially the "contain energy"
> part. Thanks.

Sure. "Transmission Lines and Networks", Walter C. Johnson, page 150,
equation (6.17).

"P = |E+|^2/Z0 - |E-|^2/Z0 We can regard the first term in this
expression as the power associated with the forward-traveling wave,
and the second term as the reflected power" (associated with the
rearward-traveling wave). Note E+ and E- are RMS values.

In other words, if a transmission line wave possesses a voltage, it
also possesses a power, V^2/Z0 or I^2*Z0 or |V*I| or ExH.
--
73, Cecil http://www.qsl.net/w5dxp

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99. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:17:14 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <ewpMa.1289$C36.2887@rwcrnsc51.ops.asp.att.net>
Source record: 113740

Try again, coherently this time.

" Uncle Peter" <radioconnectionNO@cox.netSPAM> wrote in message
news:McgMa.40405$pH3.16648@news2.east.cox.net...
>
> <rick@rickfrazier.com> wrote in message
> news:3F013063.8819A475@rickfrazier.com...
> > Spencer:
> > > There are different needs for grounds for transmitting/receiving
> compared
> > to grounds for lightning protection, though generally speaking, a good
> > ground system for lightning protection does a fair to good job for hf
> > transmitting/receiving as well.
> >
> >
>
> You can a good ground for lightning that will heat earthworms with
> RF.. Bad rule of thumb.
>
> Pete
>
>

100. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:26:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F022699.8050809@ieee.org>
Source record: 113745

Jim Kelley wrote:
> W5DXP wrote:
>
>>Speaking of embarrassing questions: Your equation said that,
>>"Pi = Pf + Pr", which I assume means that
>>
>>Pincident = Pforward + Preflected
>
> Why should I be embarassed about the Law of Conservation of Energy?

Because you mentally violate it willy-nilly. Here's a quote that
proves your "region of space" assertions wrong. From "Fundamentals
of Electric Waves", Skilling, 2nd edition, page 131.

"Consider a region of space, enclosed within an imaginary surface."

This is exactly what I did with the transmission line impedance
discontinuity point which you implied was an invalid thing to do.

"The rate at which EM energy flows out of this region is found by
integrating P over the enclosing surface. ... But, if the energy
is flowing out of the region, there must be a corresponding loss
of EM energy stored within the region." The same thing is obviously
true for energy flowing into the region. Thus, contrary to your
assertions, Pfwd1 + Pref2 = Pfwd2 + Pref1, is a statement of the
Conservation of Energy principle.

>>So given an impedance discontinuity where s11 = RHO = 0.5,
>>What is the law of physics mechanism that allows Pr to
>>be zero when the physical impedance discontinuity possesses
>>a physical reflection coefficient of 0.5? Please be specific.
>
> You want me to ignore the other reflective surfaces in the system like
> you have been?

It is you who wants to ignore the energy in the two reflected waves, Jim,
not I. I am basing my entire argument upon those other reflective surfaces
and the reflected waves generated by them. Nice try at obfuscation.
Didn't work.
--
73, Cecil http://www.qsl.net/w5dxp

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

101. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:28:21 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <vPOdnZvurva1up-iRTvU2Q@crocker.com>
Source record: 113744

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F02241B.4070205@ieee.org...
> Jim Kelley wrote:
> >
> > W5DXP wrote:
> >
> >>The wave reflection model requires that waves contain energy,
> >>contrary to your assertions.
> >
> > Can you cite a reference on that? Especially the "contain energy"
> > part. Thanks.
>
> Sure. "Transmission Lines and Networks", Walter C. Johnson, page 150,
> equation (6.17).
>
> "P = |E+|^2/Z0 - |E-|^2/Z0 We can regard the first term in this
> expression as the power associated with the forward-traveling wave,
> and the second term as the reflected power" (associated with the
> rearward-traveling wave). Note E+ and E- are RMS values.
>
> In other words, if a transmission line wave possesses a voltage, it
> also possesses a power, V^2/Z0 or I^2*Z0 or |V*I| or ExH.

a line can have a voltage but not 'possess' any power, or be transmitting
any power.... but it could still have energy... I'll leave the derivation as
an exercise for the student.

102. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:32:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <j8f2gvkkt8icp7n1p8p6e6c3s194i0b5f2@4ax.com>
Source record: 113748

On 30 Jun 2003 19:24:43 GMT, nightowls627@aol.comnojunk (G. Doughty)
wrote:

>I am monitoring 10m right now and am noticing something about my rig. I have
>an htx 10 that seems to have a ground problem. I do not have the dipole
>grounded. nor is the radio but when I touch the mic cord the squelch clears up
>and I can hear much better. Is this a grounding problem and if so, what is the
>best way to ground it? Sometimes when the mike gets closer to the radio it
>clears up too.
>
>I am not transmitting, just monitoring
>
>G. Doughty
>KI4BBL
>remove nojunk to email

Hi OM,

Is the feed point choked from the transmission line?

Are you running with an external power supply or batteries?

73's
Richard Clark, KB7QHC

103. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:33:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qol3gvoq4mh99t99blap2hmmhks75luobj@4ax.com>
Source record: 113749

On 1 Jul 2003 11:32:00 -0700, nm5k@wt.net (Mark Keith) wrote:

>Zoran Brlecic <WA7AA@comcast.net> wrote in message news:<3F012DBE.2000802@comcast.net>...
>> Dale Parfitt wrote:
>>
>>
>>
>> > Could you explain why grounding the dipole helps?
>>
>>
>> Grounding the entire system helps, not (necessarily) the antenna itself,
>> by reducing the noise level. A single point ground for all the
>> electronics in the shack makes a hell of a difference. My RX noise level
>> rises some 10-15 dB when I untie the grounds from the RX, PC, keyer,
>> amp, p/s, etc.
>>
>> 73 ... WA7AA
>
>It shouldn't be making much of a difference though. How will grounding
>reduce the noise level? Ground is a noise source. It's actually better
>not to be hooked to it in my opinion. Here, with my coax fed dipoles,
>adding a shack ground makes no difference in noise on any bands,
>except for a slight increase in signal strength on the low bands.
>160m, MW, etc. If grounding your station reduces noise, I'd be
>wondering how well your balun, choke, etc, is actually working.
>I don't use a shack ground at all, and I don't have noise problems.
>With a balanced dipole, and properly fed with a balun or choke if
>using coax, there should be no reason at all to need a ground to
>reduce noise. If it does help, in my opinion, you have an
>antenna/feedline decoupling problem. MK

Hi Mark,

Well put.

73's
Richard Clark, KB7QHC

104. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:33:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a4o3gvooec7eln662belst2qff4ga0qksd@4ax.com>
Source record: 113750

On 1 Jul 2003 11:32:00 -0700, nm5k@wt.net (Mark Keith) wrote:

>Zoran Brlecic <WA7AA@comcast.net> wrote in message news:<3F012DBE.2000802@comcast.net>...
>> Dale Parfitt wrote:
>>
>>
>>
>> > Could you explain why grounding the dipole helps?
>>
>>
>> Grounding the entire system helps, not (necessarily) the antenna itself,
>> by reducing the noise level. A single point ground for all the
>> electronics in the shack makes a hell of a difference. My RX noise level
>> rises some 10-15 dB when I untie the grounds from the RX, PC, keyer,
>> amp, p/s, etc.
>>
>> 73 ... WA7AA
>
>It shouldn't be making much of a difference though. How will grounding
>reduce the noise level? Ground is a noise source. It's actually better
>not to be hooked to it in my opinion. Here, with my coax fed dipoles,
>adding a shack ground makes no difference in noise on any bands,
>except for a slight increase in signal strength on the low bands.
>160m, MW, etc. If grounding your station reduces noise, I'd be
>wondering how well your balun, choke, etc, is actually working.
>I don't use a shack ground at all, and I don't have noise problems.
>With a balanced dipole, and properly fed with a balun or choke if
>using coax, there should be no reason at all to need a ground to
>reduce noise. If it does help, in my opinion, you have an
>antenna/feedline decoupling problem. MK

Hi Mark,

Well put.

73's
Richard Clark, KB7QHC

105. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:33:20 UTC
From: funkbastler <funkbastler@yahoo.com>
Message-ID: <fo94gv8hp20d75too94b4j7ss11vupigq4@4ax.com>
Source record: 113746

On Tue, 01 Jul 2003 17:41:34 -0500, 'Doc <w5lz@cwis.net> wrote:

> Oh, make a 'loop' of fairly heavy cord to drag the cables
>through the pipe and never remove it! (Sort of like the
>'clothes
>lines' on a pully?) Remember to replace it every year or so.
>Much easier than trying to push a rope...
> 'Doc

Never tried to push a rope....

Tie a lightweight cord to a wadded up kleenex or two and suck
it through the pipe with a shop vac. Then use that cord to
pull a heavier cord (or the cable) back through the pipe.

-fb-

106. Re: Antenna??<Answer>

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:33:51 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <DuudnY0XRa7stZ-iRTvU2Q@crocker.com>
Source record: 113747

"jack D" <jackinariz@webtv.net> wrote in message
news:22449-3F021D73-549@storefull-2132.public.lawson.webtv.net...
About a week ago I asked if anyone recognized a certain antenna.....It
was a three element vertical.....With each element 120°
apart....Several of you said it sounds like an old CB Super
Scanner.....And you were right....This antenna fascinates me as it is
a beam with no rotor.....It has a control box in the shack and a relay
at the mast.....In one position you make a radiator and the other two
elements become reflectors and so forth in the other two
directions.....When you select all three elements the antenna becomes
an Omni....Being a newbie I find this incredible.....Anyone have any
experience with this antenna? good or bad.....Anyone know if this
antenna is available anywhere? Thanks Jack D.

```
i don't know about that one, but steering patterns with arrays of verticals
is a common procedure. i use that for a 4 vertical array on 40m and another
on 80m, and a 2 element one for 160m.
```

107. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:42:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F022A5B.4050301@ieee.org>
Source record: 113751

Peter Brackett wrote:
> Standing waves only "stand" because" of a steady state condition.

Absolutely false. How do you explain TV ghosting and measurable standing
waves occurring at the same time?

> After the line has become fully charged and for all practical purposes has reached
> the final "steady state" the energy "stored" on/in the line is then sloshing from side to
> side ...

Please describe how standing waves are even possible in a single source,
single feedline, single load system without a forward-traveling wave and
a rearward-traveling wave. This is a very large hole in your argument.
The two traveling-wave components are the *cause* of the standing wave and
do not cease to exist merely because you superpose them in your head.
(Unless you are God, and in that case, I apologize. :-)

> It just makes no sense to carry transient terminology and analysis through
> into a steady state analysis because even though all the equations are still
> mathematically correct they do not describe the physics of that steady state regime.

On the contrary, they describe it exactly. That's why you guys are afraid of it.

Mentally hitch a ride on a forward source wave in a matched system with reflections.
You are approaching the physical impedance discontinuity point. What is the first
thing you encounter? - not waves, the first thing you encounter is the physical
impedance discontinuity with its reflection coefficient, e.g. 0.5. Why doesn't the
forward wave react to the physical impedance discontinuity? answer: it does and that's
why the s-parameter equations work perfectly. s11 is really there, a1 is really there,
s12 is really there, a2 is really there. The forward wave doesn't see any reflected
waves because s11*a1 engages in wave cancellation with s12*a2. Those wave components
actually exist, at least for a dt of time in the case of s11*a1. Mother Nature is
actually superposing those four s-parameter wave components.

You have been seduced by the steady-state math model and you enjoyed it.
--
73, Cecil http://www.qsl.net/w5dxp

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108. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:42:36 UTC
From: richardharrison@webtv.net
Message-ID: <24307-3F022A7C-157@storefull-2312.public.lawson.webtv.net>
Source record: 113756

Michael Hart wrote:
"---design of a HF traveling wave broadband HF dipole made from coaxial cable."

You have been well directed to Cebik`s pages. Cebik is a treasure and I won`t touch the coax bazooka stuff.

Michael has been introduced to a broadband folded dipole with a load resistor opposite its feedpoint. It has much to commend it for certain applications. It is inefficient for others. Barker&Williamson make commercial versions and have a loyal group of customers.

A traveling wave antenna is intended to be less periodic or resonant than a standing wave antenna such as a dipole. It is usually long in terms of wavelengths and is terminated in its characteristic impedance so as to not make waves.

One of the oldest traveling wave antennas is the horizontal rhombic. A transmission line is fairly independent of frequency but it is a poor radiator because its parallel wires are balanced and close together. The rhombic idea was to gradually widen the space between the wires so as to not make waves but to induce radiation by wide spacing.

The wires could then be brought together again just as they had been separated to restore the original line impedance.

The divergent / convergent wires could be raised to a height as needed for low-angle radiation.

The angles of the diamond-section antenna could be optimized for best alignment of radiation from its four sides.

Finally, the far end of the diamond antenna / transmission line could be terminated in its characteristic impedance, usually a dummy load, to avoid a reflection which would produce radiation back toward the sending end of the antenna.

The rhombic works best when its sides are each several wavelengths (often 3,4 or 5) long. Its gain is high and usually most energy is radiated before reaching the sink which is its termination.

The loaded, folded dipole isn`t so fortunate. It has neither the gain nor the efficiency of the rhombic, but it does take a lot less space and hardware.

Best regards, Richard Harrison, KB5WZI

109. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 00:50:04 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F022C3C.582268A1@uci.edu>
Source record: 113752

W5DXP wrote:
>
> Jim Kelley wrote:
> > W5DXP wrote:
> >>What mechanism of physics keeps a
> >>physical impedance discontinuity from causing a reflection from the
> >>incident wave? Please be specific.
> >
> > Your paper describes a device which does that. Waves superposition?
> > Pref=P3+P4-2*sqrt(P3*P4)? Is that specific enough for you?
>
> P3 is the power in one of the rearward-traveling reflected waves
> that you say isn't there.

If you were to solve the equation, you would certainly see that no
energy is conveyed as a result of its interaction with P4.

> P4 in the power in the other rearward-traveling reflected wave
> that you say isn't there.

Also conveys no energy, as a result of its interaction with P3.

> 2*sqrt(P3*P4) is the destructive interference term that feeds the
> constructive interference on the other side of the impedance
> discontinuity which you say isn't there.

The interference term "feeds" nothing. It is simply part of an
expression for either the forward or the reverse power. In this example
it gives the reverse power. P1 and P2 can be used to calculate the
forward power.

But it's true that the wave reflection model would instead (and more
appropriately) use the voltage expression, Vfwd^2 = V1^2 + V2^2 +
2*(V1*V2) to calculate the resultant forward voltage. That result would
then be divided by the impedance in order to calculate the forward
power. As we know from the first paragraph in any treatment on
interference, powers and intensities don't simply add.

> P3 = |s11*a1|^2 = Pfwd1*RHO^2 power associated with wave, s11*a1
>
> P4 = |s12*a2|^2 = Pref2(1-RHO^2) power associated with wave, s12*a2

P3 and P4 are really only mathematical constructs since V3 and V4
cancel. But since P3 and P4 effectively do the same thing, there really
is no difference in the outcome.

> s11*a1 and s12*a2 engage in wave cancellation (destruction) such
> that b1 = s11*a1 + s12*a2 = zero.

> P stands for "power" and you say those two rearward-traveling
> reflected waves don't possess any power.

How much power does b1 represent? I still have never said anything about waves having possessions. I deliberately try to refrain from using anthropomorphic terms.

73, ac6xg

110. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:01:13 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <opidnfvwqPBGs5-iRTvUrg@crocker.com>
Source record: 113753

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F022A5B.4050301@ieee.org...
> Peter Brackett wrote:
> > Standing waves only "stand" because" of a steady state condition.
>
> Absolutely false. How do you explain TV ghosting and measurable standing
> waves occurring at the same time?
>

TV signals can almost never be considered to be in steady state so would not satisfy the requirements to use that method. this has been explained to you before. real world meters will average the transients so that you can read forward and reflected power, but if you study them in detail there is no steady state.

> > After the line has become fully charged and for all practical purposes
has reached
> > the final "steady state" the energy "stored" on/in the line is then
sloshing from side to
> > side ...
>
> Please describe how standing waves are even possible in a single source,
> single feedline, single load system without a forward-traveling wave and
> a rearward-traveling wave. This is a very large hole in your argument.
> The two traveling-wave components are the *cause* of the standing wave and
> do not cease to exist merely because you superpose them in your head.
> (Unless you are God, and in that case, I apologize. :-)

no, it is entirely consistent with the sinusoidal steady state solutions when you properly satisfy the conditions to use that method.

>
> > It just makes no sense to carry transient terminology and analysis
through
> > into a steady state analysis because even though all the equations are
still
> > mathematically correct they do not describe the physics of that steady
state regime.
>
> On the contrary, they describe it exactly. That's why you guys are afraid
of it.

he's got you there... you can always use the complete solution, it is just too ugly to use most of the time in systems that are at steady state conditions.... but then again, he just said exactly what you said, so cecil, you are now agreeing with peter, he said you could use the transient

analysis, and so you agreed with him... oh what a twisted web we weave.

> Mentally hitch a ride on a forward source wave in a matched system with reflections.
> You are approaching the physical impedance discontinuity point. What is the first
> thing you encounter? - not waves, the first thing you encounter is the physical
> impedance discontinuity with its reflection coefficient, e.g. 0.5. Why doesn't the
> forward wave react to the physical impedance discontinuity? answer: it does and that's
> why the s-parameter equations work perfectly. s11 is really there, a1 is really there,
> s12 is really there, a2 is really there. The forward wave doesn't see any reflected
> waves because s11*a1 engages in wave cancellation with s12*a2. Those wave components
> actually exist, at least for a dt of time in the case of s11*a1. Mother Nature is
> actually superposing those four s-parameter wave components.
>
> You have been seduced by the steady-state math model and you enjoyed it.

yes, oh yes, its sooooo gooooood.... don't stop, please don't stop!

111. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:03:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F022F51.3060903@ieee.org>
Source record: 113754

Jim Kelley wrote:
> For normal incidence, cos theta = -1, and n1=1 (Z0=50), then r12 and r23
> are given by r12=n1-n2/n1+n2, r23=n2-n3/n2+n3, and reflectivity
> R = ((r12-r23)/(1-(r12*r23)))^2 = (((n1*n3) - n2^2)/((n1*n3)+n2^2))^2.
> "The reflectivity is then a maximum or a minimum according to whether
> the refractive index [~impedance] of the film [n2=1.22, ~Z1=150] is
> greater or smaller than the refective index of the last medium [n3=1.5,
> ~ZL=450]." In the reflected direction the indices are in the reverse order.

Those are light reflection indices which are not the same as transmission line power reflection coefficients. They are equivalent to the voltage reflection coefficients in a transmission line and indeed, for voltage reflection coefficients, the signs are different looking in opposite directions. But that is not true for power reflection coefficients which depend upon RHO^2. Every RHO^2 is positive. The same percentage of power is reflected in both directions at an impedance discontinuity in a transmission line so your point is irrelevant.

> In other words R for the matching network is a minimum in the
> transmitted direction and a maximum in the reflected direction. Pretty
> much exactly what Walter Maxwell has said.

Your Rmaximum and Rminimum at any one plane have the same magnitude and opposite signs. Walter Maxwell said nothing remotely resembling that. He said the reflection coefficient for the forward wave is zero and the reflection coefficient for the reflected wave is unity. Those are calculated mathematical reflection coefficients, not physical reflection coefficients.

> In other words, no energy is
> reflected back toward the source from the first boundary, and any energy
> reflected by the load is 100% re-reflected by the back side of the
> second boundary.

You are bending the truth to the breaking point. R for forward and reverse directions are equal in magnitude and opposite in sign. One is NOT zero and the other is NOT unity.

> The point is that any detailed energy analysis of what goes on within
> the boundaries must be completely consistant with the steady state
> analysis.

There's that old "math model dictates reality" mentality again, Jim. The exact opposite should be true. The steady-state analysis is supposed to agree with reality, not vice versa. The steady-state analysis is a short-cut method that represents reality on the macro level but not at the micro level.

For instance: Standing waves are impossible in a single source, single feedline, single load system unless a forward traveling wave exists and a rearward traveling wave exists. Once the standing waves are calculated, you guys forget or deliberately ignore the existence of the cause of the standing waves. That may give you the correct macro answer to your problems, but it certainly confuses you about what is actually happening in reality.

You guys need to attend a chapter of "Steady-Staters Anonymous" and rid yourselves of your addictions. Until you do that, you will never be able to face reality like a man.
--
73, Cecil http://www.qsl.net/w5dxp

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112. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:08:28 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F02308C.7093175B@uci.edu>
Source record: 113755

David Robbins wrote:
>
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> news:3F02241B.4070205@ieee.org...
> > Jim Kelley wrote:
> > >
> > > W5DXP wrote:
> > >
> > > >>The wave reflection model requires that waves contain energy,
> > > >>contrary to your assertions.
> > >
> > > Can you cite a reference on that? Especially the "contain energy"
> > > part. Thanks.
> >
> > Sure. "Transmission Lines and Networks", Walter C. Johnson, page 150,
> > equation (6.17).
> > "P = |E+|^2/Z0 - |E-|^2/Z0 We can regard the first term in this
> > expression as the power associated with the forward-traveling wave,
> > and the second term as the reflected power" (associated with the
> > rearward-traveling wave). Note E+ and E- are RMS values.

They could be peak values if you include the rest of the wave equation
for each term. But as we know, power doesn't actually flow in a
transmission line, and no energy flows when E+ equals E- because the
resulting electric field is zero. By the way, the equation doesn't
express what you said it does.

> > In other words, if a transmission line wave possesses a voltage, it
> > also possesses a power, V^2/Z0 or I^2*Z0 or |V*I| or ExH.

> a line can have a voltage but not 'possess' any power, or be transmitting
> any power.... but it could still have energy...

Absolutely true. Cecil has a problem with the fact that a transmission
line can have EM energy stored within it without there necessarily being
a continuous transfer of EM energy somewhere. Understandable though,
being that the idea is counterintuitive to some extent.

73, ac6xg

113. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:17:11 UTC
From: richardharrison@webtv.net
Message-ID: <24302-3F023297-506@storefull-2312.public.lawson.webtv.net>
Source record: 113761

Reg, G4FGQ wrote:
"That`s how diffusion of hydrogen through polyethylene was discovered."

Fascinating! A cheap low-pollution energy source is at hand!

We can run the world from sea water with fresh water as the combustion product. We don`t need to be troubled by Middle-Easterners anymore!

Is it too late to buy DuPont or ICI stock? Since it was German cable, maybe we need to buy BASF shares. The way the world is moving, China, Inc. will make all the processing equipment and profits too.

Best regards, Richard Harrison, KB5WZI

114. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:27:48 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <j7d4gv0apfdfdi63m861kpvgi4t0g2ssvq@4ax.com>
Source record: 113757

On Tue, 01 Jul 2003 14:22:16 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>After years of getting my coax whacked with the lawnmower, I'm going to
>bury it.

Hi Roy,

If you are going to use pipe, I would use the gray electrical conduit.
One reason, as another poster mentioned, you can get the long sweeps
for the corners. Even with those it is very difficult to pull cables
through if you make a few bends. Second, the gray pipe noted for
electrical wires will be less likely to be cut by someone installing
phone lines, sprinklers etc. They will think it contains electrical
wires and will leave it alone.

If planning on pulling more wires latter, use a VERY large pipe unless
you will have no corners in it.

I have a run of about 120 feet that goes under the drive way and
around the back of the house. I put in 3 runs of 7/8 hard line
directly buried. I also have some 2" (or 2 1/2") conduit with 2 or 3
runs of RG8 and several runs of multiconductor control cables.

I did run a nylon cord for future cable pulling but it is so difficult
to pull that I know I will never be able to pull anything else
through.

When I put the cables in I ran them through the pipe before I glued
the pipe joints. Good thing too as I would have never been able to get
them through all the bends. Even though I have the long sweeps on all.
I had to open most of the bends to pull the cables around at that
point.

To terminate the lines I mounted a large plastic "J" box (available
from electrical supply houses) on the wall and brought the conduit up
into it. I also come back out the bottom of the box with the jumpers
to go inside the house. Same at the tower end. The boxes provide a
nice water proof junction for connectors and to attach grounds,
lightning protectors etc. to the cables. Also makes for easy changes
while keeping everything dry.

73
Gary K4FMX

115. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:28:25 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307011728.193a095@posting.google.com>
Source record: 113758

Roy Lewallen <w7el@eznec.com> wrote in message news:<vg3us94l16bt73@corp.supernews.com>...
> After years of getting my coax whacked with the lawnmower, I'm going to
> bury it. I plan on burying some PVC water pipe and pulling the cable
> through. I'd appreciate any suggestions about how to make the
> installation trouble free. I can keep rain out with some U fittings at
> the ends. But am I likely to have water accumulate from condensation? If
> so, what's the best way to deal with it -- particularly considering that
> the ground here is completely saturated with water for about half the
> year? Can I just make sure the coax is in good condition and ignore
> water in the pipe? Any other suggestions?
>
> I'll initially be running one piece of RG-213 and a multi-conductor
> control cable for a remote relay box, but want to leave room for a few
> other cables in the future.
>
> Thanks!
>
> Roy Lewallen, W7EL
I have about 100 feet of 6 in dia plastic pipe thru which are about 6
coax lines and a few control multi wires. I did not secure the pipes,
just pushed them into each other. After a few years some mud got into
it but not to a point that I had to do anything about it(frost
heaving perhaps). I have 3/8 stiff (not flexible) steel cable that is
left inside for pulling e.t.c. If I had to do it all again I think I
would use two plastic tubes so that control wires were in a separate
pipe on top of the other pipe.Rather have water in the coax tubing and
let it provide drainage around the control wires pipe.Inlet and exit
are angled to the surface to make pulling easier.
One time I had a dozen wires thru the pipe and one of them tangled
with a coax,
not a big deal but it did happen. My pipe has been in the ground for
about 20 years and it is always nice to have the extra coax available
for comparison purposes.
Art

116. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:33:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F023678.3000105@ieee.org>
Source record: 113759

David Robbins wrote:
> ... the point is that its the
> electrons moving that we call current, ...

Not exactly. Current moves at the speed of light, electrons don't.

> Power or energy
> computations are not sufficient to solve transmission line problems.

Power or energy computations are sufficient to solve for any voltage, current, or power around an impedance discontinuity match point. Did you realize that? All voltages and currents are either at zero degrees reference or at 180 degrees.

> I'll bet you even like to try to analyze complex matching
> problems with swr meter readings.

It works pretty well. The only thing I can't calculate is the sign of the reactance. Adding a cap and noting which way the meter moves tells me the sign of the reactance. How do you think the great minds of 200 years ago managed to come up with what they did without $20,000 network analyzers? Not only are you guys seduced by the steady-state model, you are also spoiled by modern technology. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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117. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:49:24 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87d6gtvgt7.fld@barrow.com>
Source record: 113760

Roy Lewallen <w7el@eznec.com> wrote:
>After years of getting my coax whacked with the lawnmower, I'm going to
>bury it. I plan on burying some PVC water pipe and pulling the cable
>through. I'd appreciate any suggestions about how to make the
>installation trouble free. I can keep rain out with some U fittings at
>the ends. But am I likely to have water accumulate from condensation? If
>so, what's the best way to deal with it -- particularly considering that
>the ground here is completely saturated with water for about half the
>year? Can I just make sure the coax is in good condition and ignore
>water in the pipe? Any other suggestions?

I have no experience with buried coax... only with buried comm
cable.

The trick is usually to put gravel in the trench below the
cable, supposedly to drain water away from the conduit. But
obviously if you have standing water higher than the level of
the conduit, it is not going to drain. You probably don't want
splices in such an area if it can be helped, and you do want to
do a very good job of making waterproof junctions when
necessary. (Steel conduit is commonly used, rather than PVC,
because it can be sealed better and is less fragile, but that
might be going a bit farther than you'd want.)

Condensation should not be a problem. Typically you want the
ends sealed in a way that allows air, but wards off moisture and
things that crawl. A U filled with foam material at the end and
a rubber cap with a hole just large enough for the coax to exit
is typically used here.

Under no circumstance to you want water to enter the conduit!
I'm not sure where you live, but if it were to freeze the
pressure could destroy your coax.

>I'll initially be running one piece of RG-213 and a multi-conductor
>control cable for a remote relay box, but want to leave room for a few
>other cables in the future.

Install the conduit. Then use a foam ball with a string
attached to blow (using compressed air) a string through the
conduit. The string is used to pull a 1/4" poly rope through.
Have another length of rope, and any time you pull a wire, pull
a rope along with it. That way you always have a pull rope for
the next time. Pulling 200-300 feet of 3/4" comm cable through
a 4" conduit is actually very easy (particularly if you stand
there and watch a couple young fellows do it!).

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

118. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:53:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F023B1C.6030401@ieee.org>
Source record: 113762

Jim Kelley wrote:
> W5DXP wrote:
>>P3 is the power in one of the rearward-traveling reflected waves
>>that you say isn't there.
>
> If you were to solve the equation, you would certainly see that no
> energy is conveyed as a result of its interaction with P4.

More bafflegab. I solved the equation P3=V3*I3=25W. P3 contains
25 joules/sec. P4 contains 25 joules/sec. Those joules/sec cannot
be destroyed except in your mind.

>>P4 in the power in the other rearward-traveling reflected wave
>>that you say isn't there.
>
> Also conveys no energy, as a result of its interaction with P3.

It certainly conveys energy from the destructive interference event to
the constructive interference event just as described on the Melles-
Griot web page.

> The interference term "feeds" nothing.

So you disagree with _Optics_, by Hecht. Why don't you take it up
with him? Hecht says the destructive interference event feeds energy
to the constructive interference event.

> P3 and P4 are really only mathematical constructs since V3 and V4
> cancel. But since P3 and P4 effectively do the same thing, there really
> is no difference in the outcome.

Sorry, Jim, the intrinsic energy in a wave cannot and does not cancel
when the voltages and currents cancel. That is what you are missing.
You are mentally violating the Conservation of Energy principle.

If we filter out some coherent light from Alpha Centauri, create two
equal magnitude, out of phase waves, and cause them to cancel to zero,
are you saying that light from Alpha Centauri never contained any
energy. Preposterous!

> How much power does b1 represent? None, because all the associated
> energy headed back the other direction, i.e. it changed directions.
--
73, Cecil http://www.qsl.net/w5dxp

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119. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 01:59:20 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vg4f0rrm6cdsa6@corp.supernews.com>
Source record: 113763

Dear Roy:
Let me come at this from a different direction and with a different experience.
I have several 400+ foot runs of Heliax that are just on the ground plus some control cables. Never a problem. One of the runs is about 30 years old and it was measured a couple of years ago to be within original specifications.
One secret is to use Heliax. One receives what one pays for. Use proper connectors.
The other secret is to use a mower. One needs to use a mower that has a floating cutting head that stays 3 inches above the ground. My guess is that you are using too aggressive a cut (too short) with a head that is able to be other than parallel to the ground.
Lowest cost engineering solution: Use Heliax. Get, and use, a real mower.

We do not have quite the rain fall that you have, however things stay green. Leave the grass a bit taller. Save yourself a lot of work.
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

120. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:07:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F023E68.2000307@ieee.org>
Source record: 113764

Jim Kelley wrote:
>
> W5DXP wrote:
>
>>Uhhhhh Jim, you are the one who is implying that the energy flowing into
>>a lossless impedance discontinuity in a transmission line is NOT equal
>>to the energy flowing out of that impedance discontinuity.
>
> I'm sorry, Cecil, but that's an absolute lie. I have never implied
> anything of the kind.

Of course you did, Jim. I said "Pfwd1+Pref2=Pfwd2+Pref1" and you
argued with me.

> Read all of the words to yourself out loud, Cecil. Energy is not
> necessarily conserved ...

Yes, it is, Jim.

> When you draw a boundary in
> such a way that the system within it is open, energy probably will not
> be conserved within the boundary. Really basic stuff.

Yes, in direct contradiction to a quote I provided in another thread.

> Draw a boundary around a power plant, and see if you can prove that
> energy within that boundary is conserved. (I thought I already gave
> that example.)

Exactly what energy is created or destroyed in a power plant?

>
>>>Obviously the circulator load resistor heats up when energy IS reflected.
>>
>>Just as obviously, the reflected wave must be smart enough to know, ahead of
>>time, whether to carry energy back from the mismatched load or not.
>
> Ahead of what time? I don't understand your dilema here.

That's obvious. The wave is in the act of being reflected from the load. It
doesn't know what to expect at the source end of the line when it arrives
there. It might have to dissipate power and it might not have to. But that
is 100 nanoseconds into the future. You say the reflected wave carries energy
if energy is needed but the wave doesn't know if it will be needed or not
in 100 nanoseconds. The reflected wave must predict the future. If energy is
needed to heat a resistor, it must take energy with it. If energy is not needed,
you say it doesn't take any energy with it. So how does it predict the future,

Jim, when you, with your high IQ, are incapable of predicting the future? Your scenario has a large contradiction built in. It not only requires smart waves, it requires waves smarter than you, smart enough to predict the future.

> When you put a circulator in
> circuit you are doing two things: one, you're eliminating the wave
> cancellation; and two you're providing a place to which energy can be
> transferred.

The wave contains energy either way, Jim, because it cannot know what will happen in the future at the source. For one case, the wave delivers its energy to a circulator load. For the other case, the wave delivers its energy to the destructive interference event. Both ways, the energy is delivered. (Just as explained on the Melles-Griot web page and in _Optics_ by Hecht.)
--
73, Cecil http://www.qsl.net/w5dxp

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121. Re: Effect of materials on path loss?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:13:12 UTC
From: richardharrison@webtv.net
Message-ID: <15155-3F023FB8-595@storefull-2314.public.lawson.webtv.net>
Source record: 113670

David Harper wrote:
"I`m debating whether to transmit from inside an enclosure that is primarily styrofoam---."

Fog, mist, and light rain have almost undetectable effect on propagation below about 10 GHz. Microwave fades are caused by stratified air in stagnant conditions which produce fog, not by the fog itself.

Dishes use plastic radomes with almost unmeasurable effect. But, plastics are lossier than air. That`s why spiral-lines and foam-lines, and other configurations to minimize plastic insulation are used.

Sure, losses can be contrived and some practitioners can fall on hard times without really trying, but with a little bit of luck, it won`t be you.

Best regards, Richard Harrison, KB5WZI

122. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:17:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F0240D0.5020106@ieee.org>
Source record: 113765

David Robbins wrote:
> a line can have a voltage but not 'possess' any power, or be transmitting
> any power.... but it could still have energy... I'll leave the derivation as
> an exercise for the student.

Of course, I am talking about RF voltage in a transmission line that is an appreciable percentage of a wavelength. A 1WL transmission line cannot have an RF voltage devoid of energy content. Every wave requires energy. Waves devoid of energy are not possible. Even the energy in a super-conducting transmission line wave is still there and can burn your fingers if the power is high enough and you grab it. Real waves devoid of any energy content are just supernatural wet dreams that apparently occur during the steady-state seduction process.
--
73, Cecil http://www.qsl.net/w5dxp

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123. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:24:10 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <878yrhvf79.fld@barrow.com>
Source record: 113766

Floyd Davidson <floyd@barrow.com> wrote:
>Roy Lewallen <w7el@eznec.com> wrote:
>>After years of getting my coax whacked with the lawnmower, I'm going to
>>bury it. I plan on burying some PVC water pipe and pulling the cable
>>through. I'd appreciate any suggestions about how to make the
>>installation trouble free. I can keep rain out with some U fittings at
>>the ends. But am I likely to have water accumulate from condensation? If
>>so, what's the best way to deal with it -- particularly considering that
>>the ground here is completely saturated with water for about half the
>>year? Can I just make sure the coax is in good condition and ignore
>>water in the pipe? Any other suggestions?
>
>I have no experience with buried coax... only with buried comm
>cable.

I forgot to mention something that is extremely important. *Mark*
the path of that conduit very well.

The 200-300 foot pull I mentioned was because the last comm
cable I helped install wasn't marked well, and 2 years later the
power company wanted to put in a pole. I showed 'em where I
thought it was (*they* had dug the trench, and didn't know!) and
said I wouldn't drill within 25 feet of that. So I was wrong.
They drilled 15 feet away and hit it dead center...

We got to pull another cable through...

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

124. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:29:35 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F02438F.3090204@ieee.org>
Source record: 113767

Jim Kelley wrote:
> They could be peak values if you include the rest of the wave equation
> for each term. But as we know, power doesn't actually flow in a
> transmission line, and no energy flows when E+ equals E- because the
> resulting electric field is zero.

The electric field is zero only at one infinitesimal point, Jim. On each side of that point, the electric field is alive and well. 1/4WL away from that point, the electric field is at its MAXIMUM value. That electric field cannot exist without a forward traveling wave and a rearward traveling wave each of which contains energy.

What you are saying is that no energy is flowing when two light waves engage in destructive interference and a dark ring results. Does you boss know you make stupid assertions like that one? Come on, Jim. You know that normal interference has absolutely no effect on energy flow. The two waves don't even know the other wave exists.

> By the way, the equation doesn't express what you said it does.

But we can assume it expresses what Johnson says it does and he disagrees with you. :-)

> Cecil has a problem with the fact that a transmission
> line can have EM energy stored within it without there necessarily being
> a continuous transfer of EM energy somewhere.

You can prove your point by offering an example of a single source, single feedline, single load system that has standing waves without reflected waves. Your response to that challenge has, so far, been nonexistent. When are you going to provide any proof of your assertions?
--
73, Cecil http://www.qsl.net/w5dxp

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125. Carolina Cyclone Antennas (screwdriver)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:34:33 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <PwrMa.2167$eW6.1163@fe03.atl2.webusenet.com>
Source record: 113768

For those looking for a well-built, great-operating mobile HF antenna,
please consider the Carolina
Cyclone I and II antennas. I can also save you some money as well. Don't
worry about using power on these antennas, go ahead as per the website--800
watts and 1500 watts respectively.
Even the coil covers are heavy duty. Instead of the flimsy butyl covers that
come with *some*
screwdrivers, mine are 1/8" wall Lexan. And I will include the IC 706
tuning module for FREE.
So please visit http://www.qsl.net/k4kwh

Also you can type into google, "Carolina Cyclone" for a review or on Eham.

73

Jerry
K4KWH

126. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:41:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F02464F.5090501@ieee.org>
Source record: 113669

David Robbins wrote:
> TV signals can almost never be considered to be in steady state so would not
> satisfy the requirements to use that method. this has been explained to you
> before. real world meters will average the transients so that you can read
> forward and reflected power, but if you study them in detail there is no
> steady state.

My point exactly, David. Given the noise that exists in every real system, steady-state *NEVER* exists. However, standing waves *DO* exist even if steady-state never exists. And you can track the noise all the way up and down the transmission line if you really want to.

> he's got you there... you can always use the complete solution, it is just
> too ugly to use most of the time in systems that are at steady state
> conditions.... but then again, he just said exactly what you said, so cecil,
> you are now agreeing with peter, he said you could use the transient
> analysis, and so you agreed with him... oh what a twisted web we weave.

Point is, one cannot afford to forget the complete solution if one really wants to know what is happening in reality. The steady-state math model does NOT dictate reality no matter how strong you guys truly believe in your heart of hearts that it does. Noise transients continue to occur even during "steady-state" and they do NOT obey the steady-state shortcut rules.
--
73, Cecil http://www.qsl.net/w5dxp

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127. Screwdriver coil covers

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:43:28 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <9FrMa.2228$eW6.1807@fe03.atl2.webusenet.com>
Source record: 113671

Have you "busted" your screwdriver coil cover? Is it cracked or broken, and you can't find a replacement? Then visit www.qsl.net/k4kwh and you will find coil covers of several sizes and types. I have to provide these anyway for my Carolina Cyclone antennas, so it is a natural off-shoot as I have the material in stock.

73

Jerry
K4KWH

128. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 02:51:44 UTC
From: Jim Richardson <warlock@eskimo.com>
Message-ID: <0vt9t-c6i.ln1@grendel.myth>
Source record: 113672

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

On Tue, 01 Jul 2003 10:30:02 -0700,
Jack Twilley <jmt+usenet@twilley.org> wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
>>>>>> "Jack" == Jack Twilley <jmt+usenet@twilley.org> writes:
>
> [...]
>
>Jack> Hmm. I wonder if it matters that I'm using VNC instead of
>Jack> 'real' X.
>
>Jack> I'll give it a try at work tomorrow.
>
> Nope, still no go. Might be a FreeBSD thing.
>
>

What are you expecting to happen? what you get, is an animation
representing the current direction, and magnitude, on the antenna, you
sometimes have to look really close to see it if you have the radiation
pattern showing, as it's a lot smaller than the rp scale.

-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (GNU/Linux)

iD8DBQE/AkjAd90bcYOAWPYRAmmkAJ9Yi+FDC7jshQQWu2DBTzaEH41aQwCfeRD1
IFr2KiqGw7E0oGfPcaxgLMQ=
=XwwS
-----END PGP SIGNATURE-----

--
Jim Richardson http://www.eskimo.com/~warlock

Linux, because eventually, you grow up enough to be trusted with a fork()
```

129. Re: 10m contact

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 03:39:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <muk4gvo8p3v01nkhkg6m4tl3uaj6c477lj@4ax.com>
Source record: 113673

On 1 Jul 2003 11:32:00 -0700, nm5k@wt.net (Mark Keith) wrote:

>Zoran Brlecic <WA7AA@comcast.net> wrote in message news:<3F012DBE.2000802@comcast.net>...
>> Dale Parfitt wrote:
>>
>>
>>
>> > Could you explain why grounding the dipole helps?
>>
>>
>> Grounding the entire system helps, not (necessarily) the antenna itself,
>> by reducing the noise level. A single point ground for all the
>> electronics in the shack makes a hell of a difference. My RX noise level
>> rises some 10-15 dB when I untie the grounds from the RX, PC, keyer,
>> amp, p/s, etc.
>>
>> 73 ... WA7AA
>
>It shouldn't be making much of a difference though. How will grounding
>reduce the noise level? Ground is a noise source. It's actually better
>not to be hooked to it in my opinion. Here, with my coax fed dipoles,
>adding a shack ground makes no difference in noise on any bands,
>except for a slight increase in signal strength on the low bands.
>160m, MW, etc. If grounding your station reduces noise, I'd be
>wondering how well your balun, choke, etc, is actually working.
>I don't use a shack ground at all, and I don't have noise problems.
>With a balanced dipole, and properly fed with a balun or choke if
>using coax, there should be no reason at all to need a ground to
>reduce noise. If it does help, in my opinion, you have an
>antenna/feedline decoupling problem. MK

Hi Mark,

Well put.

73's
Richard Clark, KB7QHC

130. Heathkits

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 04:21:00 UTC
From: Gary Wood <gary@heathkits.com>
Message-ID: <M4tMa.74520$lo.6969848@newsread2.prod.itd.earthlink.net>
Source record: 113674

Learn about Heathkits www.heathkits.com

131. Re: Buried feedline suggestions - Thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 04:22:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg4nfea3ni9m22@corp.supernews.com>
Source record: 113675

Thanks, everyone, for all the good suggestions. Picked up some pipe today, and the trench is being dug as I speak. (Mac, I am saving myself some work -- my nephew needed a job, so he gets his job and I get my buried cable.) Maybe now I'll be spurred to get back to operating once in a while!

Thanks again, I really appreciate all the advice.

Roy Lewallen, W7EL

132. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 04:28:25 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <6pn4gvgicj6l23nvclvaic03nmnrkhp08q@4ax.com>
Source record: 113676

On Tue, 01 Jul 2003 14:22:16 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

|After years of getting my coax whacked with the lawnmower, I'm going to
|bury it. I plan on burying some PVC water pipe and pulling the cable
|through. I'd appreciate any suggestions about how to make the
|installation trouble free. I can keep rain out with some U fittings at
|the ends. But am I likely to have water accumulate from condensation? If
|so, what's the best way to deal with it -- particularly considering that
|the ground here is completely saturated with water for about half the
|year? Can I just make sure the coax is in good condition and ignore
|water in the pipe? Any other suggestions?
|
|I'll initially be running one piece of RG-213 and a multi-conductor
|control cable for a remote relay box, but want to leave room for a few
|other cables in the future.

I would forget the pipe for enclosing the coax and use Heliax instead
of the '213. Since you're never going to keep water out of your
conduit, why not just use perforated drainage pipe and not worry about
it. This will also force you to use 4" pipe which makes pulling
future cable much easier. Your conduit will never be big enough :)

133. Re: Lightning dangers from Faraday's cage comprimise while storm chasing/spotting?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 05:17:58 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bdtpu6$lr4$1@208.206.142.108>
Source record: 113677

Roger Halstead wrote:

> On 30 Jun 2003 02:48:15 GMT, "Dick Carroll;" <dixie@townsqr.com>
> wrote:
>
> >
> >
> >Henry Kolesnik wrote:
> >
> >> Several years ago Dan, N5AR was travelling down an Interstate and lightning
> >> hit the 2 meter whip on his van and blew the antenna, coax, and radio to
> >> pieces and scared the hell out of him. Shit happens!
> >
> >
> >
> > I think maybe now we have the definitive answer to the original inquiry!
>
> Not the one you think.
> Lightening is unpredictable.

Hey Roger, THAT is the definitive answer!

134. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 05:35:48 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bdtqvkqvr0@208.206.142.108>
Source record: 113678

Wes Stewart wrote:

> On Tue, 01 Jul 2003 14:22:16 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
> |After years of getting my coax whacked with the lawnmower, I'm going to
> |bury it. I plan on burying some PVC water pipe and pulling the cable
> |through. I'd appreciate any suggestions about how to make the
> |installation trouble free. I can keep rain out with some U fittings at
> |the ends. But am I likely to have water accumulate from condensation? If
> |so, what's the best way to deal with it -- particularly considering that
> |the ground here is completely saturated with water for about half the
> |year? Can I just make sure the coax is in good condition and ignore
> |water in the pipe? Any other suggestions?
> |
> |I'll initially be running one piece of RG-213 and a multi-conductor
> |control cable for a remote relay box, but want to leave room for a few
> |other cables in the future.
>
> I would forget the pipe for enclosing the coax and use Heliax instead
> of the '213. Since you're never going to keep water out of your
> conduit, why not just use perforated drainage pipe and not worry about
> it. This will also force you to use 4" pipe which makes pulling
> future cable much easier. Your conduit will never be big enough :)

Agreed! If you use anything less than 4 inch you'll regret it. Two inch is virtually impossible to work with for any distance.
One professional installation I'm familiar with used a pair of two inch conduits in the initial construction, and the installers had to use a small tractor to complete the original cable pull. Several years later when I drew the job of making some upgrades we installed a pair of four inch schedule 40 PVC tubes, and now there's still room for future EASY upgrades.

Dick

135. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 07:40:49 UTC
From: Jack Twilley <jmt+usenet@twilley.org>
Message-ID: <864r25e5q6.fsf@duchess.twilley.org>
Source record: 113679

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>>>>> "Jim" == Jim Richardson <warlock@eskimo.com> writes:

[... animate doesn't work for me ...]

Jim> What are you expecting to happen? what you get, is an animation
Jim> representing the current direction, and magnitude, on the
Jim> antenna, you sometimes have to look really close to see it if you
Jim> have the radiation pattern showing, as it's a lot smaller than
Jim> the rp scale.

The only settings I change is to select 'animate', and then I zoom way
way in so the j-pole fills the screen. Nothing moves. When I select
'current', I get pretty colors but they don't move.

If you've lost patience with me, that's totally okay. I understand.
If you're still motivated enough to try again to help me, I'd
appreciate it. It might help to give me a click-by-click set of
instructions. (you run the command 'xnecview animate.*' and you get
two windows. select the window with the antenna in it. Change the
top button from 'none' to 'animate', etc.)

Again, if I've only succeeded in demonstrating my incompetence with
the program, then I'll understand if you want to throw your hands in
the air and surrender.

Jack.
- --
Jack Twilley
jmt at twilley dot org
http colon slash slash www dot twilley dot org slash tilde jmt slash
-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (FreeBSD)

iD8DBQE/AoyFGPFSfAB/ezgRAjxaAJ9ZRcEH4y100L1cdHsMGfaon/flGgCeJr1I
sZluMzzP6gClG3b+6ELg9c0=
=fwmz
-----END PGP SIGNATURE-----
```

136. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 08:45:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bdu62vmsr1@titan.btinternet.com>
Source record: 113680

```
We don`t need to be troubled by Middle-Easterners anymore!
==========================
And we don't need to trouble the Middle-Easterners. ;o)
```

137. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 09:54:24 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bdua4grsp1@titan.btinternet.com>
Source record: 113681

> One of the oldest traveling wave antennas is the horizontal rhombic.

==========

The terminating resistor has NO effect on the radiation pattern of a Rhombic in the desired direction of transmission.

If unterminated a Rhombic radiates and receives equally well in the opposite direction. The radiation pattern is bi-directional.

The antenna is terminated only to suppress radiation and reception in the reverse direction. The power which would be radiated in the reverse is absorbed in the termination. The enemy and the competition can't hear you. And you do not cause interference to other services in the opposite direction.

When receiving in the terminated condition the signal-to-noise and interference ratio in the desired direction improves by a few dB.

If a unidirectional beam is desired then a Rhombic could be considered to be very wasteful of Tx power - 1/2 of it disappears in the termination. There are more efficient ways of achieving the same horizontally-polarised objective (but perhaps less compact).

Reg, G4FGQ

138. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 11:18:14 UTC
From: "Gary P. Fiber" <g.fiber@verizon.net>
Message-ID: <rgf5gvs30ale6qd99ra6nukil54be1id69@4ax.com>
Source record: 113682

On 2 Jul 2003 05:35:48 GMT, "Dick Carroll;" <dixie@townsqr.com> wrote:

>
>
>Wes Stewart wrote:
>
>> On Tue, 01 Jul 2003 14:22:16 -0700, Roy Lewallen <w7el@eznec.com>
>> wrote:
>>
>> |After years of getting my coax whacked with the lawnmower, I'm going to
>> |bury it. I plan on burying some PVC water pipe and pulling the cable
>> |through. I'd appreciate any suggestions about how to make the
>> |installation trouble free. I can keep rain out with some U fittings at
>> |the ends. But am I likely to have water accumulate from condensation? If
>> |so, what's the best way to deal with it -- particularly considering that
>> |the ground here is completely saturated with water for about half the
>> |year? Can I just make sure the coax is in good condition and ignore
>> |water in the pipe? Any other suggestions?
>> |
>> |I'll initially be running one piece of RG-213 and a multi-conductor
>> |control cable for a remote relay box, but want to leave room for a few
>> |other cables in the future.
>>
>> I would forget the pipe for enclosing the coax and use Heliax instead
>> of the '213. Since you're never going to keep water out of your
>> conduit, why not just use perforated drainage pipe and not worry about
>> it. This will also force you to use 4" pipe which makes pulling
>> future cable much easier. Your conduit will never be big enough :)
>
> Agreed! If you use anything less than 4 inch you'll regret it. Two inch is
>virtually impossible to work with for any distance.
> One professional installation I'm familiar with used a pair of two inch
>conduits in the initial construction, and the installers had to use a small
>tractor to complete the original cable pull. Several years later when I drew
>the job of making some upgrades we installed a pair of four inch schedule 40
>PVC tubes, and now there's still room for future EASY upgrades.
>
>Dick

Never have more that 360 degrees in bends in the run otherwise you
should install a pull J-box. With careful planning you should be able
to achieve a nice run with few bends or install a pull j-box just at
one end before you do the final bends to get the conduit to where you
require it. The j-box could double as a ground plate holder or
transition from hardline to flexible coax junction.

There are several cable lubes out there, They are nasty, slippery to use but do work well. Most electrical supply firms have conduit pull lines or one might consider submersible well pump rope to use as a pull line.

Gary K8IZ
Registered Linux User # 312991

139. Re: Buried feedline suggestions - Thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 11:42:31 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vg5h6bbkgq6b72@corp.supernews.com>
Source record: 113683

Dear Roy:
Outstanding! Once again I overlooked the most obvious best
solution. One is never too old to learn from this group.
Hope to hear you on the air.
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vg4nfea3ni9m22@corp.supernews.com...
> Thanks, everyone, for all the good suggestions. Picked up some pipe
> today, and the trench is being dug as I speak. (Mac, I am saving
myself
> some work -- my nephew needed a job, so he gets his job and I get my
> buried cable.) Maybe now I'll be spurred to get back to operating once
> in a while!
>
> Thanks again, I really appreciate all the advice.
>
> Roy Lewallen, W7EL
>

140. Re: Schematic wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 11:45:07 UTC
From: "G.Beat" <spamcatcher@comcast.net>
Message-ID: <7BzMa.17929$Xm3.3443@sccrnsc02>
Source record: 113684

Max -

The Super Scanner CB antenna was originally mfg. by Antenna Specialists.
http://dxcorner.s5.com/photo3.html

Scanned manual
http://www.cbtricks.com/ant_manuals/ant_spec/super-scanner.pdf

w9gb
--
Do not use Reply (spam logger & catcher).
Reply only through ARRL forwarding service to W9GB

The easiest way to make one of these antennas is to find an old set that is set up for 11 meters. However, if you decide to build one from scratch, it can be done by following the picture. You will need, in addition, to the antenna a relay box and a control box to electrically switch the elements direction. These boxes can be fabricated form parts available from local supply stores. To build these you will need one of the original super scanner instruction manuals which contains the diagram showing the relay switching.
This antenna offers omni and three (3) direction operation. Rejection is good. Direction is good. I have used mine for my base station antenna and works well on low and high power. Please refer to the picture for dims and lengths.

Enjoy, 73 KB9RPS, Steve

"Max" <Max_Jens@post9.tele.dk.invalid> wrote in message
news:3f01d9f4$0$48896$edfadb0f@dtext02.news.tele.dk...

> Hello
>
> I am building an antenne like this for the 2 meter band
>
> http://www.n9vxq.org/bcara/2mtrss.html
>
> and I need a schematic for the junction box, anybody
> that knows where to find it ???
>
> Regards Max
>
>

141. Re: Lightning dangers from Faraday's cage comprimise while storm ...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 13:23:13 UTC
From: richardharrison@webtv.net
Message-ID: <26134-3F02DCC1-9@storefull-2313.public.lawson.webtv.net>
Source record: 113686

Henry Kolesnik wrote:
"---Dan, N5AR was travelling down an interstate and lightning hit the 2 meter whip on his van and blew the antenna, coax, and radio to pieces---."

It is likely N5AR`s 19-in whip and appurtenances would have been spared if he had 36-in extensions of grounded whips at the corners of his van`s roofline. The air terminals made by these corner whips would have relieved the short 2-meter band whip of stress.

It is surprising that the lightning created such havoc, especially if the antenna was not a mag-mount but was mounted on a through the roof fitting. The spacing between center conductor and roof or inside the fitting or coax is so small. RG-58 breaks down at not much more than 1400 volts peak. Evaporation of the antenna fitting or coax at the fitting should have kept the lightning from the radio.

Impedance and velocity factor discourage lightning propagation inside coax. A gas tube may save a radio from an antenna contact with a power line, but it`s superfluous for a strong lightning transient in every case I`ve seen. First problem is the delay in gas firing time. In power and audio circuits, capacitance can slow the voltage rise giving the gas tube time to fire. This is an unavailable tactic in an r-f circuit.

Best regards, Richard Harrison, KB5WZI

142. Save our shortwave from white noise at S9 ☐ stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 13:50:16 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307020550.1fadf70b@posting.google.com>
Source record: 113685

Save our shortwave from white noise at S9 ï¿½ stop BPL/PLC

Comments are due on or before July 7, 2003. The FCC now is accepting
electronically filed comments via its Electronic Comment Filing System
(ECFS).

http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi

In the "Proceeding" field, enter "03-104" and complete the required
fields. Comments may be typed into a form or you may attach a file
containing your comments.

Full details are here;
http://www.arrl.org/news/features/2003/06/19/2/?nc=1

Many good comments have been filed, some you may like to review are
here;
Links may have line wrapped ï¿½ cut and paste in two parts or visit;
http://www.eham.net/articles/5876

IEEE comment
http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514283353

North American Shortwave Association
http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514282987

Ham - good overview
http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514156997

Aura communications
http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514282951

Amherst Alliance
http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514147416

More information on this issue can be found at:
http://www.eham.net/articles/5769

143. High Sierra screwdriver

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 14:19:11 UTC
From: Bill Grimwood <bill@grimwood.net>
Message-ID: <vg5qet5gholc86@corp.supernews.com>
Source record: 113687

I am contemplating purchasing a High Sierra screwdriver antenna to mount on the rear of a motorhome. Does anyone have any experience with this antenna?

Would you recommend something different?

Thanks

Bill Grimwood
W4WEG

144. Re: Carolina Cyclone Antennas (screwdriver)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 14:20:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f02ec1f_7@corp.newsgroups.com>
Source record: 113688

Jim Higgins wrote:
> Polybutylene terapthalate (assume that's what you mean by
> "butyl") is inherently UV resistant, but Lexan (tm) is not.

Isn't Lexan used for commercial airplane windows?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

145. Re: Buried feedline suggestions - Thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 15:18:10 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307020718.956080b@posting.google.com>
Source record: 113689

Roy Lewallen <w7el@eznec.com> wrote in message news:<vg4nfea3ni9m22@corp.supernews.com>...
> Thanks, everyone, for all the good suggestions. Picked up some pipe
> today, and the trench is being dug as I speak. (Mac, I am saving myself
> some work -- my nephew needed a job, so he gets his job and I get my
> buried cable.) Maybe now I'll be spurred to get back to operating once
> in a while!
>
> Thanks again, I really appreciate all the advice.
>
> Roy Lewallen, W7EL

Forgot to mention I always use hardline so the cable does not generate
'loops'.
At the end of the messenger I have a 'Keller' wire puller which is an
expandable and retractable mesh wire type tubing. This stops the end
of the coax bending at the pulling point and makes for an easier and
non snagging pull. (actually used the mower tractor to pull mine
thru.)
One day I will pull the discontinued forms of wiring
Art

146. Re: Long Transmission Line Ideas Wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 15:25:05 UTC
From: Rick Karlquist N6RK <richard@karlquist.removethis.com>
Message-ID: <IPCMa.19843$fG.9813@sccrnsc01>
Source record: 113690

My web site (www.n6rk.com) has photos of my 850 foot open
wire line feeder for my big vertical. I use 4 AWG stranded
insulated aluminum wire (XHHN) on 5 inch centers. There
is a 50 ohm to 450 ohm balun at each end of the line. Loss
including baluns is only tenths of a dB.

I considered the remote amplifier idea, but that requires
an amplifier at each antenna site. After you consider
all the alternatives, the open wire line is the way to go
for that kind of distance.

At "several" hundred feet, whatever that means, you may be
able to use 1 5/8 inch Heliax if you can scrounge roll ends
and don't have to pay real money for it. K9DX claims
to have done this.

FWIW, I just installed a new tower for a tribander only
100 feet from the shack, so I could just use big coax
like LMR600. I was originally going to locate it
back on the property but didn't want to fool with another
open wire line.

Rick N6RK

"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:vfrfq1lnjp6v08@corp.supernews.com...
> I will be moving into a home in a couple of months that
> has a fair amount of property to the back. I am planning
> on putting all or most of my antennas back several hundred feet from the
> house and radio equipment. Due to the high cost of Heliax, I am looking
for
> ideas on what
> methods to use to get the RF to the antennas. Openwire
> feeder that goes to some sort of termination box that
> converts to shorter coax runs? Ways to feed the openwire, if that is the
> way I go? Maybe there are cheaper sources of Heliax (hardline) I have
seen?
>
> Doug N4IJ
> Central VA
>
>
>

147. Antennas for Kites

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 15:51:10 UTC
From: "William H. O'Hara, III" <whoohara@yahoo.com>
Message-ID: <Xns93AC78BD32A0AAX2A3DA5M1512AODKAMO@65.100.3.61>
Source record: 113691

Would someone like to comment on their
favorite antenna for a kite setup. Would
you please give reasons such as VSWR,
ERP, and ease of use.

Thanks
Bill

148. Why is it called a 'screwdriver' antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 16:32:51 UTC
From: Wedgew <wedgew@rochester.rr.com>
Message-ID: <3F030933.4090506@rochester.rr.com>
Source record: 113692

Can anyone explain why it's called a 'screwdriver' antenna

149. Re: Why is it called a 'screwdriver' antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 16:36:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <db26gv063v96jmmj17i2o3qkktqqsobq5e@4ax.com>
Source record: 113693

On Wed, 02 Jul 2003 16:32:51 GMT, Wedgew <wedgew@rochester.rr.com>
wrote:
>Can anyone explain why it's called a 'screwdriver' antenna

Hi OM,

First models (and perhaps even current ones) used popular battery
powered screwdriver motors to perform the tuning. An example of form
following function (both are cylindrical designs).

73's
Richard Clark, KB7QHC

150. Re: Why is it called a 'screwdriver' antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 16:43:51 UTC
From: Guessing <Guessing@connectnet.net>
Message-ID: <bZDMa.86680$Pc5.25382@fed1read01>
Source record: 113694

From URL: http://home.earthlink.net/~jimlux/radio/antenna/screwdriver.htm

Sez:

"Generically, the screwdriver antenna is a vertical with a tuning/loading coil adjuted by a cordless screwdriver . The bottom of the antenna is a piece of tubing big enough to cover the motor, the top is a straight whip. There are a bunch of firms selling plans or antennas, a search for "screwdriver antenna" will turn them up."

So my understanding is that at first homebrewers used cordless screwdriver motors to tune the antenna. The name stuck even though commercial manufactures may use a different motor.

But as my moniker indicates -- just guessin - educated tho !!

"Wedgew" <wedgew@rochester.rr.com> wrote in message news:3F030933.4090506@rochester.rr.com...
> Can anyone explain why it's called a 'screwdriver' antenna
>

151. Re: Newbie antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 17:08:50 UTC
From: Michalkun <buranko2000@yahoo.com>
Message-ID: <Xns93AC713B2B12Emichalkunyahoocom@128.233.192.251>
Source record: 113695

richardharrison@webtv.net (Richard Harrison) wrote in news:19655-3F00AFA7-105@storefull-2313.public.lawson.webtv.net:

> Yes. Coax shields and antenna masts are usually grounded for safety and
> performance.
>
> Antenna system grounds on sites served by commercial power must be
> connected to the commercial power ground system by law in most
> jurisdictions and it makes sense, too.

What do you do with an antenna cable when you are not listening. Should you ground it as well? I wonder, when lighting strikes the antenna, will it go to your mast and through the grouding cable to the earth or it will go to your radio, or both? If the antenna cable which goes to the radio inside the house would be grounded in the house, wouldn't that pose some fire risk, even though you have your outer part of the coax and mask grounded to outside source?

152. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 17:17:13 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307020917.5f905ffc@posting.google.com>
Source record: 113696

Wes Stewart <n7ws@_arrl.net> wrote in message
news:<6pn4gvgicj6l23nvclvaic03nmnrkhp08q@4ax.com>...
> On Tue, 01 Jul 2003 14:22:16 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
> |After years of getting my coax whacked with the lawnmower, I'm going to
> |bury it. I plan on burying some PVC water pipe and pulling the cable
> |through. I'd appreciate any suggestions about how to make the
> |installation trouble free. I can keep rain out with some U fittings at
> |the ends. But am I likely to have water accumulate from condensation? If
> |so, what's the best way to deal with it -- particularly considering that
> |the ground here is completely saturated with water for about half the
> |year? Can I just make sure the coax is in good condition and ignore
> |water in the pipe? Any other suggestions?
> |
> |I'll initially be running one piece of RG-213 and a multi-conductor
> |control cable for a remote relay box, but want to leave room for a few
> |other cables in the future.
>
> I would forget the pipe for enclosing the coax and use Heliax instead
> of the '213. Since you're never going to keep water out of your
> conduit, why not just use perforated drainage pipe and not worry about
> it. This will also force you to use 4" pipe which makes pulling
> future cable much easier. Your conduit will never be big enough :)

Do not use perforated pipe!
It collects mud plus presents jamming points for pulling thru
Art

153. Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:06:43 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vg67pofad27f61@corp.supernews.com>
Source record: 113697

I've got a friend who is trying to get on 3882 with this antenna and he claims it needs a 6 foot whip in addition to the mast. I don't know anything about Hustler resonators and wonder what it could be. Do the resonators have anything in them besides a coil?
tnx
hank wd5jfr

154. Re: Schematic wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:16:50 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f03217d$0$48895$edfadb0f@dtext02.news.tele.dk>
Source record: 113698

Hello W9GB

> Scanned manual
> http://www.cbtricks.com/ant_manuals/ant_spec/super-scanner.pdf

Just what I needed, many thank's to you for the help.

Regards Max

155. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:23:36 UTC
From: Guessing <Guessing@connectnet.net>
Message-ID: <IqFMa.61491$1e.38251@fed1read04>
Source record: 113699

Henry -- for a photo see URL:

http://www.universal-radio.com/catalog/hamantm/2696.jpg

Possible helpful article at URL:
http://www.arrl.org/news/features/2000/03/27/1/?nc=1

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:vg67pofad27f61@corp.supernews.com...
> I've got a friend who is trying to get on 3882 with this antenna and he
> claims it needs a 6 foot whip in addition to the mast. I don't know
> anything about Hustler resonators and wonder what it could be. Do the
> resonators have anything in them besides a coil?
> tnx
> hank wd5jfr
>
>

156. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:29:40 UTC
From: Jim Richardson <warlock@eskimo.com>
Message-ID: <ktkbt-fnb.ln1@grendel.myth>
Source record: 113707

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

On Wed, 02 Jul 2003 00:40:49 -0700,
Jack Twilley <jmt+usenet@twilley.org> wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
>>>>>> "Jim" == Jim Richardson <warlock@eskimo.com> writes:
>
> [... animate doesn't work for me ...]
>
>Jim> What are you expecting to happen? what you get, is an animation
>Jim> representing the current direction, and magnitude, on the
>Jim> antenna, you sometimes have to look really close to see it if you
>Jim> have the radiation pattern showing, as it's a lot smaller than
>Jim> the rp scale.
>
> The only settings I change is to select 'animate', and then I zoom way
> way in so the j-pole fills the screen. Nothing moves. When I select
> 'current', I get pretty colors but they don't move.
>
> If you've lost patience with me, that's totally okay. I understand.
> If you're still motivated enough to try again to help me, I'd
> appreciate it. It might help to give me a click-by-click set of
> instructions. (you run the command 'xnecview animate.*' and you get
> two windows. select the window with the antenna in it. Change the
> top button from 'none' to 'animate', etc.)
>
> Again, if I've only succeeded in demonstrating my incompetence with
> the program, then I'll understand if you want to throw your hands in
> the air and surrender.
>
>

No, it's fine. I don't know what to tell you though. I start xnecview
with the --animation option, or select anim from the struct menu, and I
get the animation of the currents. I have no explanation for why it
doesn't work under FBSD, I don't have an FBSD machine I can test it on,
the ones I have are all servers :) Are you trying it with the test.nec I
supplied? Or rather, with the output file from that? I do know that nec2
needs to include the current info in the output for the anim to work.

-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (GNU/Linux)
```

```
iD8DBQE/AySTd90bcYOAWPYRApF/AJwPvt2MDiFlx8JRbIdeuAr93x0t+gCggPmV
hTQJijOaP9Kq7HSDQMSuEQA=
=AhSF
-----END PGP SIGNATURE-----

--
Jim Richardson http://www.eskimo.com/~warlock

Linux, because eventually, you grow up enough to be trusted with a fork()
```

157. Re: Tower Climbing Info

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:34:57 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vg69bkt8lp3vb9@corp.supernews.com>
Source record: 113701

Dear Phillips:
Many thanks for injecting a reality check!
The real cost of projects such as these has to include the cost for things going wrong (as well as the cost of doing the job right the first time). Insurance is the conventional way to do that. If nothing goes wrong or the owner is not collectable, that is one thing. When the owner is collectable and things go wrong, the "inexpensive" work becomes very expensive indeed. Can one say: bankruptcy?
It would be desirable to have a registry of firms willing to do tower work.

Thanks again, 73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

<phamilton@cellsource.com> wrote in message
news:3EFBAE90.F7D15A0B@cellsource.com...
> Matt,
>
> It cost me every year at the beginning of the year approximately
> $125,000 to insure a professional 4 man tower crew. This is before
> salaries, per diem, vehicles, winches, expensive specialized tools. I
> have to budget for OSHA rules adherence, a full time certified safety
> man, project manager, and so many hidden costs - I can't remember.
>
> I was a career paramedic/ firefighter for 20 yrs, went to med school,
> got the diploma, and started a cellular engineering and construction
> company after school. I am also a ham radio op, had previous
experience
> as a TV and AM radio broadcast engineer and saw an opportunity to get
> paid to do what I did for a hobby - play radio......bad decision. I
have
> never played radio less and had so many headaches.
>
> We have lost in the last year alone 5-10 tower climbers in the
industry,
> falls being the most prevalent cause. Some from 800-1000 feet, some
from
> 30 feet - all caused death! The tower industry has consolidated so
much
> in the last 5 years, that if you were not a known quantity before
> consolidation, it will be real hard to garner enough work to pay for
the

> insurance alone. I have had as many as 4 (4) man crews on the road as
> recently as 2 summers ago. I am now down to (1) 4 man crew and (1) 2
man
> crew.
>
> If I could gracefully get out of the business of towers - I would! I
> have a 0.73 workers comp mod rating - it doesn't get much better than
> this, and I still pay 36 cents on every dollar paid to employees to
> workers comp. Even the big tower companies are closing offices all
over
> the country as we speak.
>
> The first 2 quarters this year put several small tower companies out
of
> business. The reason is that to get any real quantity of work, to pay
> the bills, you have to work for the big guys. They withheld payment to
> most tower vendors the first and second quarters to make their stocks
> look good on wall street (cash reserves). I had to fund the cash flow
> through the middle of second quarter out of my own pocket. By the time
> you look at all costs to operate, be prepared at a minimum for
$100,000
> float budget, this will last only 60-90 days and doesn't include all
of
> the start up costs, which at a minimum would be ~$250,000 - if you
have
> been around long enough to know which corners you can SAFELY trim. It
> will take you on average 60-90 days if you are lucky, to get paid.
>
> OSHA will be your constant companion, and help you empty your pockets
of
> cash in a heart beat. I go through two full body harnesses per man per
> year. If one essential thread is bare in the stitching, you have to
> paint the harness red and cut it up. Then tool damage and constant
loss.
> Test gear will run you 10-$20k to start and need yearly calibration.
>
> Become a member of NATE (the National Assn. of Tower Erectors), It is
> costly but well worth the membership dues for all of the OSHA related
> help they provide.
>
> Didn't mean to sound so negative, but wanted to give you a taste of
the
> truth. Unless you have 2 million handy and really know the current
> issues in the industry, you will remain a POOR man.
>
> My suggestion would be to go to college, get an Electrical Engineering
> degree and go to work making $60-$100k to start depending on your
skills
> base and specialization.
>

> I currently make 1/2 of what I would make as a graduate physician, and
> 1/4 if I were an attending physician. I'm 47 and currently thinking
> about retirement cash reserves. Just like EMS and Fire, I am still
> looking at the reality of retiring to the poor house. That was why I
> went to grad school...to have a livable retirement plan....I'm not
> laughing!
>
> Matt,
>
> Good luck in your endeavors, what ever they may be!
>
> Regards,
>
> Phillips
>

158. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:44:11 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <iPKdnQDOZ7Rhup6iRTvU2Q@crocker.com>
Source record: 113702

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F0240D0.5020106@ieee.org...
> David Robbins wrote:
> > a line can have a voltage but not 'possess' any power, or be
transmitting
> > any power.... but it could still have energy... I'll leave the
derivation as
> > an exercise for the student.
>
> Of course, I am talking about RF voltage in a transmission line that is an
appreciable
> percentage of a wavelength. A 1WL transmission line cannot have an RF
voltage devoid of
> energy content. Every wave requires energy. Waves devoid of energy are not
possible.

oh, so you do have restrictions... i thought you liked your method because it was not constrained like the stead state solution is. i never said that a wave didn't require energy, i said that a line doesn't necessarily have to be 'possessing'(however a line possesses something is beyond me) any power or transmitting any power... unless of course your new 'possessive' term means that it contains energy.

159. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:48:57 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <3umdnXHHI62HtJ6iRTvU2Q@crocker.com>
Source record: 113703

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F02438F.3090204@ieee.org...
> Jim Kelley wrote:
> > They could be peak values if you include the rest of the wave equation
> > for each term. But as we know, power doesn't actually flow in a
> > transmission line, and no energy flows when E+ equals E- because the
> > resulting electric field is zero.
>
> The electric field is zero only at one infinitesimal point, Jim. On
> each side of that point, the electric field is alive and well. 1/4WL
> away from that point, the electric field is at its MAXIMUM value. That
> electric field cannot exist without a forward traveling wave and a
> rearward traveling wave each of which contains energy.
>
> What you are saying is that no energy is flowing when two light waves
> engage in destructive interference and a dark ring results. Does you
> boss know you make stupid assertions like that one? Come on, Jim. You
> know that normal interference has absolutely no effect on energy flow.
> The two waves don't even know the other wave exists.
>
> > By the way, the equation doesn't express what you said it does.
>
> But we can assume it expresses what Johnson says it does and he disagrees
> with you. :-)
>
> > Cecil has a problem with the fact that a transmission
> > line can have EM energy stored within it without there necessarily being
> > a continuous transfer of EM energy somewhere.
>
> You can prove your point by offering an example of a single source, single
> feedline, single load system that has standing waves without reflected
> waves. Your response to that challenge has, so far, been nonexistent. When
> are you going to provide any proof of your assertions?

the answer is trivial. 50 ohm line, 50 ohm load, 50v DC source. i see a 1A
peak standing wave and no reflections.

160. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:54:03 UTC
From: Bill Ogden <ogden@us.ibm.com>
Message-ID: <3F032A4B.62C3FC11@us.ibm.com>
Source record: 113700

> Just a suggestion or two. Use a pipe larger than you
> think you will need, cuz you'll always wish you had room
> for just one more cable run. If the pipe comes out inside

Amen. Don't even *think* about 2" PVC. Two coaxes and a control cable look small in a 2" pipe, but it is almost impossible to pull anything else through if there are a few bends in the pipe.

I drilled a bunch of holes in the bottom of my pipe. Don't know if it did any good, but my ground is not nearly as wet as your area.

Good luck

Bill
W2WO

161. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:57:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f032d32_6@corp.newsgroups.com>
Source record: 113705

David Robbins wrote:
> the answer is trivial. 50 ohm line, 50 ohm load, 50v DC source. i see a 1A
> peak standing wave and no reflections.

Trivial is right. The context is RF waves. But, of course, you knew
that already. Please feel free to try again.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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162. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 18:59:14 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <ueSdne6Uh_pYtp6iRTvUqg@crocker.com>
Source record: 113704

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3F02464F.5090501@ieee.org...
> David Robbins wrote:
> > TV signals can almost never be considered to be in steady state so would
not
> > satisfy the requirements to use that method. this has been explained to
you
> > before. real world meters will average the transients so that you can
read
> > forward and reflected power, but if you study them in detail there is no
> > steady state.
>
> My point exactly, David. Given the noise that exists in every real system,
> steady-state *NEVER* exists. However, standing waves *DO* exist even if
> steady-state never exists. And you can track the noise all the way up and
> down the transmission line if you really want to.
>
> > he's got you there... you can always use the complete solution, it is
just
> > too ugly to use most of the time in systems that are at steady state
> > conditions.... but then again, he just said exactly what you said, so
cecil,
> > you are now agreeing with peter, he said you could use the transient
> > analysis, and so you agreed with him... oh what a twisted web we weave.
>
> Point is, one cannot afford to forget the complete solution if one really
wants to
> know what is happening in reality. The steady-state math model does NOT
dictate
> reality no matter how strong you guys truly believe in your heart of
hearts that
> it does. Noise transients continue to occur even during "steady-state" and
they
> do NOT obey the steady-state shortcut rules.
>
now you are really digging for reasons to use your methods. in 'reality'
the steady state solutions are used every day and provide real world answers
with much less computational complexity than using the complete solution.
where do you think the basic thumbrules that we all know about 1/4 and 1/2
wave line impedance transformations come from? would you like to try to
teach the calculus needed to understand the complete solution of what
happens when you apply rf to a 1/4 wave stub to the average ham?? how many
of them do you think would be able to apply that method to a real world
problem? are you saying that the whole smith chart idea is worthless

because it doesn't carry through the noise transients you see in your detailed analysis? remember, the smith chart is based on steady state solutions, as are most of the common impedance transformation programs and other rf design tools in common use.

well, thats enough of this for me for this go around... time to go back to lurking and work on some real antennas.

163. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:00:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f032dde$1_6@corp.newsgroups.com>
Source record: 113706

David Robbins wrote:
> i never said that a wave didn't require energy, ...

OK, I'll buy that. So if a wave indeed does require energy,
what happens to that energy when that wave ceases to exist?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

164. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:04:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f032ec0$1_6@corp.newsgroups.com>
Source record: 113708

Bill Ogden wrote:
> I drilled a bunch of holes in the bottom of my pipe. Don't know if it
> did any good, but my ground is not nearly as wet as your area.

Around here, in East Texas, more water flows into the pipe than flows
out of the pipe. *NOBODY* around here has a basement for obvious reasons.
Empty swimming pools have been known to float a mile away while emulating
a boat.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

165. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:17:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0331f1_6@corp.newsgroups.com>
Source record: 113709

David Robbins wrote:
> now you are really digging for reasons to use your methods.

You are mistaken to think I am pushing my methods. What I am trying to do is understand the underlying physics. I don't care if it results in anything useful. I just want to understand.

> in 'reality'
> the steady state solutions are used every day and provide real world answers
> with much less computational complexity than using the complete solution.

I am not interested in shortcut answers to practical problems. I am interested in understanding the underlying physics. There is a big hole in the shortcut methods that don't explain anything of value to me. Phantom waves that exist without any energy are the stuff of religion, not physics.

> where do you think the basic thumbrules that we all know about 1/4 and 1/2
> wave line impedance transformations come from? would you like to try to
> teach the calculus needed to understand the complete solution of what
> happens when you apply rf to a 1/4 wave stub to the average ham??

I am not the average ham, Dave. Did Einstein worry about teaching relativity to the average ham? When Roy asked me for a transmission line length and a load value, did I give him 1/4WL with a resistive value? No, that would have been too easy!

If you are not interested in the underlying physics of the discussion, then feel free not to participate in the discussion. If you are interested, then offer something of value to that discussion. Energyless waves are a paradox. There's got to be a better explanation than phantom waves.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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166. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:28:14 UTC
From: dplatt@radagast.org
Message-ID: <vg6cieau0ae130@corp.supernews.com>
Source record: 113710

In article <ktkbt-fnb.ln1@grendel.myth>,
Jim Richardson <warlock@eskimo.com> wrote:

>No, it's fine. I don't know what to tell you though. I start xnecview
>with the --animation option, or select anim from the struct menu, and I
>get the animation of the currents. I have no explanation for why it
>doesn't work under FBSD, I don't have an FBSD machine I can test it on,
>the ones I have are all servers :) Are you trying it with the test.nec I
>supplied? Or rather, with the output file from that? I do know that nec2
>needs to include the current info in the output for the anim to work.

Could this be a graphics-card X issue?

It's possible that the animation feature works on in an X Window
environment when the video card is set to 8-bit (256-color) mode,
using the graphic's card's color palette. On a screen of this sort, the
values written into the card's frame buffer are not the actual RGB
values - they are indices into a hardware translation table which
holds the actual color values.

It's possible to do color animation without actually redrawing the
pixels in the window - you just change or rotate the values in the
color palette (changing the pixel-value-to-color-mapping), and the
colors on-screen change automatically.

On screens set into "true color" mode (typically 16 or 24 bit modes),
the values written into the frame buffer are the actual RGB colors.
You can't animate a screen of this sort without actually redrawing the
area you want animated.

I'm guessing that Xnecview might animate OK on your system, if you
switch your X server into 8-bit indexed-color mode.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

167. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:28:36 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6ic6gvo6r58v1h8nmc6ljph21sl91ju39g@4ax.com>
Source record: 113711

On Wed, 02 Jul 2003 14:17:56 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>
>If you are not interested in the underlying physics of the discussion,
>then feel free not to participate in the discussion.

Blame the reader.

168. Re: Antenna??<Answer>

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:33:23 UTC
From: wp20032@aol.com
Message-ID: <20030702153323.18363.00000018@mb-m26.aol.com>
Source record: 113712

>About a week ago I asked if anyone recognized a certain antenna......It
>was a three element vertical......With each element 120=B0
>apart....Several of you said it sounds like an old CB Super
>Scanner.........And you were right....This antenna fascinates me as it is
>a beam with no rotor......It has a control box in the shack and a relay
>at the mast......In one position you make a radiator and the other two
>elements become reflectors and so forth in the other two
>directions......When you select all three elements the antenna becomes
>an Omni....Being a newbie I find this incredible.....Anyone have any
>experience with this antenna? good or bad.........Anyone know if this
>antenna is available anywhere? Thanks Jack D.
>
What you have described reminds me of an antenna that has been called a
"sloper". This would be a single support, guyed with 3 dipoles. The dipoles
all have open center stubs that lower the resonance to that required by a
reflector. The dipole in the desired direction is fed, and the other two are
left open as reflectors.

I haven't seen one of these in years, and have no idea of their performance.
73 Wayne

169. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:41:08 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <XKidnX6_s7ToqJ6iRTvUpQ@crocker.com>
Source record: 113714

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f032dde$1_6@corp.newsgroups.com...
> David Robbins wrote:
> > i never said that a wave didn't require energy, ...
>
> OK, I'll buy that. So if a wave indeed does require energy,
> what happens to that energy when that wave ceases to exist?

it becomes some other form of energy. heat is most likely, but it could be
converted to any other form you needed.

170. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:41:52 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F033580.202ADEF8@uci.edu>
Source record: 113713

W5DXP wrote:
>
> Jim Kelley wrote:
> >
> > W5DXP wrote:
> >>Standing waves certainly exist with modulated waves which are not steady-
> >>state.
> >
> > That simply illustrates the difference between standing waves and
> > stationary waves. Standing waves aren't necessarily stationary.
>
> My point exactly and in direct contradiction to what Peter said.

You didn't mention anything about stationary waves.

ac6xg

171. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 19:56:23 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0338E7.87401B87@uci.edu>
Source record: 113715

W5DXP wrote:

> 75W + 8.33W does NOT equal 133.33W under any circumstances.

Not even if the circumstances include the constructive interference
term? ;-)

73, ac6xg

172. Re: Antenna??<Answer>

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 20:14:03 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f033cf5$0$48905$edfadb0f@dtext02.news.tele.dk>
Source record: 113716

Hello Jack

>directions......When you select all three elements the antenna becomes
>an Omni....Being a newbie I find this incredible.....Anyone have any
>experience with this antenna? good or bad.....Anyone know if this
>antenna is available anywhere? Thanks Jack D.

I also find that antenna interesting, at the moment I am building me
one for 2 meter. I do not think that they can be bought anyway today.

Look here for more info on the antennatype

http://www.n9vxq.org/bcara/2mtrss.html

http://www.cbtricks.com/ant_manuals/ant_spec/super-scanner.pdf

http://www.cebik.com/a10/ant31.html

Regards Max

173. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 20:15:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f033f5f_8@corp.newsgroups.com>
Source record: 113717

Jim Kelley wrote:
> You didn't mention anything about stationary waves.

That's because staionary waves do not exist *in reality*. Every
standing wave that exists *in reality* possesses jitter that
can be measured. Use the delayed sweep on your o'scope and
run the scale up to nS while looking at a voltage minimum
point in a standing wave. Jitter is guaranteed. Jitter is
a *transient condition* which should be completely missing in
a steady-state environment - but it's not missing. Steady-state
exists *only* in human minds, not in reality. Therefore, there
is no real Catch-22 associated with it since the steady-state
model does NOT match reality. Sorry to burst your bubble.

Your steady-state shortcut model leaves out a very important
step in understanding the match point at an impedance discontinuity
in a transmission line. If it hasn't been defined before, it's high
time that someone defines it. I am reluctant to do so, but if it has
to be me, so be it. However, it will do me no good. I would much rather
that you obtain fame for this discovery. Think about how famous you
could be.
--
73, Cecil http://www.qsl.net/w5dxp

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174. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 20:16:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f033fc4_8@corp.newsgroups.com>
Source record: 113718

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>If you are not interested in the underlying physics of the discussion,
>>then feel free not to participate in the discussion.
>
> Blame the reader.

Not blaming the reader, Richard, just begging him to contribute something
of value or nothing at all. Same goes for you.
--
73, Cecil http://www.qsl.net/w5dxp

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175. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 20:23:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f034141$1_8@corp.newsgroups.com>
Source record: 113619

Jim Kelley wrote:

> W5DXP wrote:
>>75W + 8.33W does NOT equal 133.33W under any circumstances.
>
> Not even if the circumstances include the constructive interference
> term? ;-)

If it includes the constructive interference term, then let's add
the constructive interference term.

75W + 8.33W + 50W = 133.33W

Yep, I like it, but Dr. Best denied that is what happens. He said
the source somehow anticipates the increased need for energy and
increases its output accordingly. No reply to my question: "What if
the source is nine light years away from the interference." Before you
reply, consider that the 50W is defined as the "interference term",
and obviously being constructive interference, requires an equal
magnitude of destructive interference somewhere else, according to
Optics, by Hecht. Your hole just gets deeper and deeper with every
posting.
--
73, Cecil http://www.qsl.net/w5dxp

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176. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 20:25:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0341cd$1_8@corp.newsgroups.com>
Source record: 113620

David Robbins wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>>So if a wave indeed does require energy,
>>what happens to that energy when that wave ceases to exist?
>
> it becomes some other form of energy. heat is most likely, but it could be
> converted to any other form you needed.

There is no temperature rise and no energy conversion - then what?
Can you spell r-e-f-l-e-c-t-i-o-n ?
--
73, Cecil http://www.qsl.net/w5dxp

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177. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 20:40:41 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <72g6gv4scte7fe489gosrhktofjuq6pq9l@4ax.com>
Source record: 113621

On Wed, 02 Jul 2003 15:16:55 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>If you are not interested in the underlying physics of the discussion,
>>>then feel free not to participate in the discussion.
>>
>> Blame the reader.
>
>Not blaming the reader, Richard, just begging him to contribute something
>of value or nothing at all. Same goes for you.

Hi Cecil,

Your track record is miserable. To this date you have dismissed or
deflected all criticism and ignored contributions that did not conform
to your thesis. Your habit of blaming the reader is one that is most
pernicious and reveals how hollow your purpose is.

Inviting a correspondent to
>>>then feel free not to participate in the discussion.
is cynical and does not move you one jot away from your poor writing
style. You could have just effectively not responded and allowed the
writer to pursue or abandon the topic according to his own
inclination. To presume this negative offering upon him is simply
condescension.

Your included mandate
>Same goes for you.
imposes no obligation on me. Given you continue to be an unreliable
correspondent, then I am not interested in playing your foil to
propagate your brand of myth.

73's
Richard Clark, KB7QHC

178. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 21:27:33 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <1JSdnZIla8ra056iRTvU2Q@crocker.com>
Source record: 113622

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f0341cd$1_8@corp.newsgroups.com...
> David Robbins wrote:
>
> > "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
> >>So if a wave indeed does require energy,
> >>what happens to that energy when that wave ceases to exist?
> >
> > it becomes some other form of energy. heat is most likely, but it could
be
> > converted to any other form you needed.
>
> There is no temperature rise and no energy conversion - then what?
> Can you spell r-e-f-l-e-c-t-i-o-n ?

r-e-f-l-e-c-t-i-o-n does not cause a wave to 'cease to exist'.

179. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 22:11:14 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bdvla6$11u77c$1@ID-134747.news.dfncis.de>
Source record: 113623

And plan on some sort of tuner so your transmitter
can load. The feedpoint resistance will be so low
that your transmitter will not se a load. They
work great, but you will need a small tuner or
matching network to get any power into it in the
first place. Then if you take the length of the
radiating elements as a fraction of 65 feet and
multiply the power out of the transmitter by that
you will get an idea of what your erp will look
like. That said years ago I used a FT7 with 15
watts out into that set up and was pleased with
the results, once I started using the matching
unit.

--
73 es cul

wb3fup
a Salty Bear

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in
message news:vg67pofad27f61@corp.supernews.com...
> I've got a friend who is trying to get on 3882
with this antenna and he
> claims it needs a 6 foot whip in addition to the
mast. I don't know
> anything about Hustler resonators and wonder
what it could be. Do the
> resonators have anything in them besides a coil?
> tnx
> hank wd5jfr
>
>

180. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 22:14:02 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vg6m9dbbv3bh88@corp.supernews.com>
Source record: 113624

I was in Farmington, NM for a couple of years and understand your problem.
I could not find an easy solution except a commercial auger if your "soil or
lack of it is an abundance of boulders". I spent many an hour trying to
wash a 6 foot ground rod in and after countless attempts I gave up. I laid
a bunch radials but was disappointed. But you can enjoy the marvelous
climate! I'm in Tulsa where it's 90 plus temp and humidty but good grounds
are easy. Trade you any day.
73
hank wd5jfr
"SPENCER" <w1gak@cybermesa.nospam.com> wrote in message
news:3F012634.2060901@cybermesa.nospam.com...
> I just moved to New Mexico. I need advice on how to put my ground rod
> into this rocky soil. HELP
>
> Spencer
>

181. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 23:05:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f036750_2@corp.newsgroups.com>
Source record: 113625

Richard Clark wrote:
> Your track record is miserable.

Maybe, Richard, but if I were you, I wouldn't dare look
myself in the mirror after comparing our two track records.
--
73, Cecil http://www.qsl.net/w5dxp

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182. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 23:09:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f036824$1_2@corp.newsgroups.com>
Source record: 113626

David Robbins wrote:
> r-e-f-l-e-c-t-i-o-n does not cause a wave to 'cease to exist'.

No, but wave cancellation does. And when wave cancellation occurs, the energy in the canceled waves cannot continue in the same direction and cannot be destroyed. When only one other possible direction exists, wonder what direction the energy takes? It ain't rocket science.
--
73, Cecil http://www.qsl.net/w5dxp

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183. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 23:14:07 UTC
From: wess@gtii.com
Message-ID: <vg6ppo6t5u9fc8@corp.supernews.com>
Source record: 113627

I assume that you have either city water, (lotsa pipe), a well (casing
down to water table) or tanks and trucking. The first two seem like
they would give a ground. What am I missing on this?

73, wes, kc8spr

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote:

>I was in Farmington, NM for a couple of years and understand your problem.
>I could not find an easy solution except a commercial auger if your "soil or
>lack of it is an abundance of boulders". I spent many an hour trying to
>wash a 6 foot ground rod in and after countless attempts I gave up. I laid
>a bunch radials but was disappointed. But you can enjoy the marvelous
>climate! I'm in Tulsa where it's 90 plus temp and humidty but good grounds
>are easy. Trade you any day.
>73
>hank wd5jfr
>"SPENCER" <w1gak@cybermesa.nospam.com> wrote in message
>news:3F012634.2060901@cybermesa.nospam.com...
>> I just moved to New Mexico. I need advice on how to put my ground rod
>> into this rocky soil. HELP
>>
>> Spencer
>>
>

--
Reply to:
Whiskey Echo Sierra Sierra AT Gee Tee EYE EYE dot COM
Lycos address is a spam trap.

184. Re: Buried feedline suggestions - Thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 23:16:34 UTC
From: wess@gtii.com
Message-ID: <vg6puc14u6cv0e@corp.supernews.com>
Source record: 113628

aunwin@insightbb.com (Art Unwin KB9MZ) wrote:

> One day I will pull the discontinued forms of wiring
>Art

When you get a round tuit? The last job I worked was filled with triax, arcnet cable, thinnet, and utp along with 25pair telco. I was responsible for everything other than the 25 pair and nothing ever got pulled.

Now in another profession, I work maintenace and the spaces are filled with twinax, thinnet, Tbase2, 25 pair, and cat5 (abandoned) and cat5e (new stuff). Nothing has ever come down. I think I remember thinnet being 50ohm so maybe a piece or three might come down if it has radio use.

Then there are conduit runs with wires last powered in the 70's going to places that don't exist.....

Wire is forever...

73, wes, kc8spr

--
Reply to:
Whiskey Echo Sierra Sierra AT Gee Tee EYE EYE dot COM
Lycos address is a spam trap.

185. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 23:25:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fdq6gvkrtgre80nn4ns0kibc4empcroi5i@4ax.com>
Source record: 113629

On Wed, 02 Jul 2003 18:05:37 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Your track record is miserable.
>
>Maybe, Richard, but if I were you, I wouldn't dare look
>myself in the mirror after comparing our two track records.

I have no fear of that, and I offer no maybes.

186. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 23:43:31 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <v--cnYcO05ut856iRTvUqw@crocker.com>
Source record: 113630

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f036824$1_2@corp.newsgroups.com...
> David Robbins wrote:
> > r-e-f-l-e-c-t-i-o-n does not cause a wave to 'cease to exist'.
>
> No, but wave cancellation does. And when wave cancellation occurs, the
> energy in the canceled waves cannot continue in the same direction and
> cannot be destroyed. When only one other possible direction exists,
> wonder what direction the energy takes? It ain't rocket science.

no, it's physics... what is the wave equation that describes this
cancellation phenomena and the determination of the 'other possible
direction'??

187. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-02 23:46:28 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <2dmcnaVe-qUL856iRTvUqA@crocker.com>
Source record: 113631

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:fdq6gvkrtgre80nn4ns0kibc4empcroi5i@4ax.com...
> On Wed, 02 Jul 2003 18:05:37 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> wrote:
>
> >Richard Clark wrote:
> >> Your track record is miserable.
> > >
> > >Maybe, Richard, but if I were you, I wouldn't dare look
> > >myself in the mirror after comparing our two track records.
> >
> > I have no fear of that, and I offer no maybes.

well, that ends this discussion... when it degenerates to personal insults
it means that both sides have run out of logical arguments and will never
see eye to eye.

188. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 00:16:50 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F03757D.9060704@comcast.net>
Source record: 113632

Don't bet on it!! This thread is not DEAD!

There are some very good physics questions and principles being discussed here. Some questions have been posed that are challenging to the physics community.

Comments that are Ad Hominem don't add to the discussion and only detract from the discussions. Let's stop the personal attacks and try to understand what happens to the energy!!

I read the posts and think about what is being said. I don't have an answer. But I know that some really sharp Physicists are reading the significant parts of this thread and pondering the question that has raised.

I'm interested in a good answer based on Physics. I would like to see the question resolved.

I quote a comment from a recent post and I hope it is not true.

> well, that ends this discussion... when it degenerates to personal insults
> it means that both sides have run out of logical arguments and will never
> see eye to eye.
>
>

Deacon Dave, W1MCE

189. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 00:26:51 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0377D5.9040503@comcast.net>
Source record: 113633

No! They just have a coil! Your friend will need a 'stinger' that
fastens to the top of the RM-75. The Hustler mobile antennas are
designed for a working length of 7 to 8 feet. It's length is adjusted to
bring the antenna to resonance. A good antenna analyzer will help at
this point.

There is another post that states a tuner is needed and that is correct.
The feedpoint impedance is very low and the tuner will allow a match for
reasonable power transfer to the antenna.

Deacon Dave, W1MCE
+ + +

Henry Kolesnik wrote:
> I've got a friend who is trying to get on 3882 with this antenna and he
> claims it needs a 6 foot whip in addition to the mast. I don't know
> anything about Hustler resonators and wonder what it could be. Do the
> resonators have anything in them besides a coil?
> tnx
> hank wd5jfr
>
>

190. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 00:34:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg6ugco5i3nf07@corp.supernews.com>
Source record: 113634

This is a very succinct statement of what I feel is the fundamental problem with Cecil's analysis. Only average powers are being dealt with, and all information about the time variation and movement of power and energy is lost in the averaging process.

Roy Lewallen, W7EL

David Robbins wrote:
>
> sure, you can add scalars, but after you add them you can't expect them to
> represent the vector quantities they were calculated from.

191. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 00:46:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jju6gv4p5r5ccbpfv9u8s4e2unrc2g40ug@4ax.com>
Source record: 113635

On Thu, 03 Jul 2003 00:16:50 GMT, Dave Shrader
<david.shrader@comcast.net> wrote:

>Don't bet on it!! This thread is not DEAD!
>
>There are some very good physics questions and principles being
>discussed here. Some questions have been posed that are challenging to
>the physics community.
>

>>The mother science of RF, Optics, has always had the answer:
>> "Optics," Miles Klein, John Wiley & Sons,
>> Chptr. 5.2 "Two-Beam Interference"
>>page 185 shows illustration for "Intensity Distribution" that you can
>>do for yourself with simple math:
>> I = 2 * I1 * (1 + cos(phi2 - phi1 - delta))
>> ave(I) = 2*I1 for an integral number of waves
>> where:
>> I: The intensity over the variation in phase (delta)
>> I1: The intensity of each, coherent source (being equal)
>> phi2: source2 phase (fixed over interval of delta)
>> phi1: source1 phase (fixed over interval of delta)
>> delta: vary phase to observe full 360ï¿½ interference pattern
>>

Per my source, "Optics," Miles V. Klein:
"...we shall use the generic term "intensity," I, instead
of the more correct, and awkward "flux density,"
"radiation incidence," or "irradiance,"

"Radiant Incidence" is expressed in terms of watts/mï¿½

This math represents a total statement covering all issues of
interference for any form of radiation in any situation. Simpler
solutions that abandon phase to scalar representation also abandon
access to a phase argument.

When you see the two (simplified math and phase) mixed in an argument
that FOLLOWS the loss of phase information, you will also find answers
that are not sustainable in practice nor theory.

The formulas from Optics are not generally used in our field, but the
math is from Maxwell's observations that preceded the introduction of
RF by decades. Historically, even his work is derived from others
that long precedes RF. Either way, our community observes the same
physics and simply couches the expression in terms related to our

field. The Math is not so dense nor impractical to evade simple comparison.

Good luck fellows.

73's
Richard Clark, KB7QHC

192. Re: Newbie antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 00:50:06 UTC
From: richardharrison@webtv.net
Message-ID: <29715-3F037DBE-145@storefull-2311.public.lawson.webtv.net>
Source record: 113638

Michalkun wrote:
"What do you do with an antenna cable when you are not listening?"

An amateur has an option to avoid operation during troubled times and to disconnect equipment during those times and during times he won`t be available to choose to disconnect.

I worked decades with commercial installations which operated 24-7 and could almost never be disconnected.

An outside antenna connected with equipment inside often is disconnected by the amateur when not in use and he tosses the cables outside. This is usually quite safe and requires little worry about grounding the lightning bolt. It will find its own way. There are more elegant grounding schemes, but few are more simple.

An antenna on a grounded conductive support will likely shift most of the surge current to the support. The antenna cable almost certainly has higher impedance than a supporting structure to which the coax shield should be grounded at the top and at the botton of the structure. The structure base should be well grounded immediately onsite.

For highest protection, the goal is minimum potential difference as the result of a surge. This is the point of bringing the antenna ground, power system ground, and equipment grounds together at the point where the antenna cables enter the shack. The instantaneous voltage on all grounding systems should rise and fall together keeping the risk of injury or damage low.

Best regards, Richard Harrison, KB5WZI

193. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 00:52:57 UTC
From: dplatt@radagast.org
Message-ID: <vg6vj9hrb6gmb2@corp.supernews.com>
Source record: 113636

>No! They just have a coil! Your friend will need a 'stinger' that
>fastens to the top of the RM-75. The Hustler mobile antennas are
>designed for a working length of 7 to 8 feet. It's length is adjusted to
>bring the antenna to resonance. A good antenna analyzer will help at
>this point.
>
>There is another post that states a tuner is needed and that is correct.
>The feedpoint impedance is very low and the tuner will allow a match for
>reasonable power transfer to the antenna.

Would a suitable un-un do the job as well? Just how low is the
feedpoint Z on these?

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

194. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 00:58:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg6vu9huocpc4e@corp.supernews.com>
Source record: 113637

The question is: what's the question that's to be resolved? I fear it was lost long ago, somewhere along the path from transmission lines to optics, quantum physics, scattering parameters, and personal insults.

If there are indeed two conflicting interpretations of observable physical phenomena, surely one or both parties can produce an example or experiment whose results can be adequately explained with one method and not the other.

I'm not aware of any transmission line problems that can't be solved completely using conventional and accepted methods. Engineers have been doing so for over a century now, producing predictable results and devices that reliably work in practice. As far as I'm able to determine, Cecil is proposing that there's something deficient with the methods that have been used for this period. So it seems to me that it's up to Cecil to produce an example or experiment that demonstrates how the existing methods are wrong and will produce an incorrect result, while his method will lead to a verifiably correct result.

A traditional forum for presenting ideas that advance the level of understanding is professional publications. I encouraged Cecil earlier to write up his analysis for an IEEE publication. Hopefully, he's pursuing this and we can all look forward to seeing a paper that's been professionally reviewed.

It's hard to tell for sure, but superficially at least, it appears that Cecil has failed to convince many of the active participants of this newsgroup of his interpretation. It might be because of an inadequately clear explanation, it might be because we're particularly dense or ignorant, it might be because we've been "seduced by the steady state" -- or it might be because Cecil's wrong. A professionally reviewed paper, which would invite responses from true experts, worldwide, would certainly be a positive step in sorting out which possibility is true.

Roy Lewallen, W7EL

Dave Shrader wrote:
> Don't bet on it!! This thread is not DEAD!
>
> There are some very good physics questions and principles being
> discussed here. Some questions have been posed that are challenging to
> the physics community.
>
> Comments that are Ad Hominem don't add to the discussion and only
> detract from the discussions. Let's stop the personal attacks and try to
> understand what happens to the energy!!

>
> I read the posts and think about what is being said. I don't have an
> answer. But I know that some really sharp Physicists are reading the
> significant parts of this thread and pondering the question that has
> raised.
>
> I'm interested in a good answer based on Physics. I would like to see
> the question resolved.
>
> I quote a comment from a recent post and I hope it is not true.
>
>> well, that ends this discussion... when it degenerates to personal
>> insults
>> it means that both sides have run out of logical arguments and will never
>> see eye to eye.
>>
>>
>
> Deacon Dave, W1MCE
>

195. Re: Carolina Cyclone Antennas (screwdriver)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 01:24:23 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <HALMa.7529$AK1.6948@fe04.atl2.webusenet.com>
Source record: 113639

Jim Higgins <UseAddressBelow@pandora.orbl.org> wrote in message
news:q6p5gv4t9giuku4598c8094m4i4ntir97k@4ax.com...
> On Tue, 1 Jul 2003 22:34:33 -0400, in
> <PwrMa.2167$eW6.1163@fe03.atl2.webusenet.com>, "Jerry Oxendine"
> <joxendi@bellsouth.net> wrote:
>
> >For those looking for a well-built, great-operating mobile
> >HF antenna, please consider the Carolina Cyclone I and
> >II antennas. I can also save you some money as well.
> >Don't worry about using power on these antennas, go
> >ahead as per the website--800 watts and 1500 watts
> >respectively. Even the coil covers are heavy duty.
> >Instead of the flimsy butyl covers that come with *some*
> >screwdrivers, mine are 1/8" wall Lexan.
>
> Polybutylene terapthalate (assume that's what you mean by
> "butyl") is inherently UV resistant, but Lexan (tm) is not.
> Exactly what type of polycarbonate are you using?

All I can tell you is to ask owners of screwdrivers with that thin
"don't-squeeze- the charmin' stuff.
It is will crack and split within a year. The Lexan is 1/8" wall. It
takes YEARS for my covers to
even fade to a slight dullness much crack and split. I have one on my
personal vehicle (Cyclone II)
that is 6+ years old. It has stayed in the sun, snow, rain, 0 temps, and it
is still good. If I wanted to
skimp on material I WOULD use that thin stuff, but if I want my own antennas
to be protected from the WX, then I want the others I make to be long-lived
for customers.

Jerry
K4KWH
>

196. Re: High Sierra screwdriver

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 01:48:38 UTC
From: "Gary P. Fiber" <g.fiber@verizon.net>
Message-ID: <jl27gvo0jel53cdq7722cujvnieiditkm2@4ax.com>
Source record: 113640

On Wed, 2 Jul 2003 09:19:11 -0500, "Bill Grimwood" <bill@grimwood.net>
wrote:

>I am contemplating purchasing a High Sierra screwdriver antenna to mount on
>the rear of a motorhome. Does anyone have any experience with this antenna?
>
>Would you recommend something different?
>
>Thanks
>
>Bill Grimwood
>W4WEG
>
>
I bought on at the Seapac convention, I am quite pleased with the
HS-1800. I also bought the An-Com controller it works good with the
HS-1800. Used 1 inch copper strap to ground the mounting.

.
Gary K8IZ
Registered Linux User # 312991

197. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 01:54:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f038ed3_7@corp.newsgroups.com>
Source record: 113642

Richard Clark wrote:
> This math represents a total statement covering all issues of
> interference for any form of radiation in any situation. Simpler
> solutions that abandon phase to scalar representation also abandon
> access to a phase argument.

Richard, please apply that math to the following experiment. We have
a two watt laser emitting coherent light. The beam is broken into
two one watt beams. One beam travels 180 degrees farther than the other.
The two beams are then recombined along exactly the same vector path
such that the waves cancel 100%. What happens to the energy and
momentum in the two canceled beams?
--
73, Cecil http://www.qsl.net/w5dxp

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198. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 01:56:48 UTC
From: Jack Twilley <jmt+usenet@twilley.org>
Message-ID: <86vfukbcf3.fsf@duchess.twilley.org>
Source record: 113641

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>>>>> "Dave" == Dave Platt <dplatt@radagast.org> writes:

Jim> No, it's fine. I don't know what to tell you though. I start
Jim> xnecview with the --animation option, or select anim from the
Jim> struct menu, and I get the animation of the currents. I have no
Jim> explanation for why it doesn't work under FBSD, I don't have an
Jim> FBSD machine I can test it on, the ones I have are all servers :)
Jim> Are you trying it with the test.nec I supplied? Or rather, with
Jim> the output file from that? I do know that nec2 needs to include
Jim> the current info in the output for the anim to work.

Dave> Could this be a graphics-card X issue?

Doubtful, as I've tried multiple cards.

I finally remembered how to make screen dumps, so here's what I see:

http://www.twilley.org/~jmt/animate.jpg

That's what's on my screen when I zoom in on the antenna and select
'anim.'. The command line includes Jim's test NEC input file and the
output file generated by my local nec2dx build. Those files are also
available at:

http://www.twilley.org/~jmt/animate.nec.gz
http://www.twilley.org/~jmt/animate.out.gz

The output file is roughly 1.5M compressed.

It's possible that my nec2dx build is doing something wrong, but I'm
pretty sure that's not the case.

Jack.
- --
Jack Twilley
jmt at twilley dot org
http colon slash slash www dot twilley dot org slash tilde jmt slash
-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (FreeBSD)

iD8DBQE/A41lGPFSfAB/ezgRAtNvAKCAMxDBsOmEfaIlRfcGsT7EzNniygCgw09Z
PoGWOp2wKwjOZcE/05Flnek=
=jEXE
-----END PGP SIGNATURE-----
```

199. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 01:58:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f038fb5$1_7@corp.newsgroups.com>
Source record: 113643

Roy Lewallen wrote:
> As far as I'm able to determine,
> Cecil is proposing that there's something deficient with the methods
> that have been used for this period.

So Roy, what do you think is the mechanism by which all the rearward-
traveling reflected power is 100% re-reflected back toward the load
in a matched system? Please be specific.
--
73, Cecil http://www.qsl.net/w5dxp

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200. Re: Carolina Cyclone Antennas (screwdriver)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 01:58:37 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <E4MMa.5036$Sy1.794@fe02.atl2.webusenet.com>
Source record: 113644

Jim Higgins <UseAddressBelow@pandora.orbl.org> wrote in message >
> I should have asked if the stock tubing used for the Carolina
> Cyclone can survive a whack with a hammer.

If I am anything I am honest. The short answer is NO! But why would anyone want to do
that? The cover is supposed to protect the motor and drive system. Many people like the clear
covers and seem to prefer them. I have had gravel slung on to my personal antenna cover and it
made a little "ding" or scratch on it. It takes a solid thwack to break one, but I have been using the
stuff for years--took a lot of experimenting to find the right combo. I am not a plastics engineer, I
just use what works. I have been making antennas since 1993. I recently took one back in trade that was built around '94 or so. In those days, I used stainless steel for the lower masts because it
was more durable. (The customer wanted a larger diameter coil.) The old DK3 style with PVC
and the usual construction techniques still looks like new and the cover still looks fine.I kept it because it looks good and I have it on another vehicle.

Anyone who stays with a product makes changes. The Cyclone I has evolved. For one thing, I
didn't want to copy the generic DK3. I wanted something that would handle power, look good
while doing it, and provided value for the price. I felt (and still do) that screwdrivers cost too much.
I know how much it costs to make one.

Over the years I have had quite a few arguments with engineer types who criticize my materials. I
had to change to aluminum because stainless costs too much. Some argue that one should only
use copper. I found that aluminum, copper (yes, I have made some with copper), and stainless
work about equally well. People argue over PVC (bad), Micarta, and Nylon. I use a kind of
black Nylon that works well and costs less. The Micarta is more expensive and comes off the
lathe in long, messy strings that have to be cleaned up after turning. I have had people criticize
me for using the Nylon. Can I tell you exactly what's in it? No. But my plastics supplier can.

I can tell you this: I'd hate to get smacked with a stick of it--that stuff is HARD, and almost im-
possible to break.

It all boils to this: No one can please everybody. Someone is going to complain, even it is just for
the sake of complaining. Just read EHAM, and read my reviews from 2 of my customers.

73

Jerry
K4KWH

>

201. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 02:13:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f039372$1_7@corp.newsgroups.com>
Source record: 113646

Roy Lewallen wrote:

> This is a very succinct statement of what I feel is the fundamental
> problem with Cecil's analysis. Only average powers are being dealt with,
> and all information about the time variation and movement of power and
> energy is lost in the averaging process.

Irradiance in optics is "only average powers" and optical physicists
don't seem to have any problems with it, Roy. In fact, the Poynting
Vector is an energy averaging process. Instantaneous energy in EM
waves is not very useful and difficult if not impossible to measure.

From _Optics_, by Hecht: "Since the the power arriving cannot be measured
instantaneously, the detector must integrate the energy flux over some
finite time, T... If T is divided out, a highly practical quantity results,
one that corresponds to the *average* energy per unit area per unit time,
namely, I (irradiance)."

Forward power and reflected power in a transmission line are similar to
irradiance in optics.
--
73, Cecil http://www.qsl.net/w5dxp

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202. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 02:15:53 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg74erbcpm4oa0@corp.supernews.com>
Source record: 113645

You've failed to convince me that there are one or more waves of average power traveling and reflecting within a transmission line. So your question is something like asking me to explain the mechanism by which ghosts levitate.

Can you propose a problem which can be solved to yield a demonstrable result only if such an assumption is made?

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> As far as I'm able to determine, Cecil is proposing that there's
>> something deficient with the methods that have been used for this period.
>
>
> So Roy, what do you think is the mechanism by which all the rearward-
> traveling reflected power is 100% re-reflected back toward the load
> in a matched system? Please be specific.

203. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 02:19:42 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0394cb$1_7@corp.newsgroups.com>
Source record: 113647

David Robbins wrote:
> no, it's physics... what is the wave equation that describes this
> cancellation phenomena and the determination of the 'other possible
> direction'??

There's only two directions in a transmission line. If RF energy exists
and it is not flowing in one direction, it is flowing in the other
direction. Does that sound like rocket science?

Wave1 = 35.36V at zero degrees and 0.707A at 180 degrees = 25W

Wave2 = 35.36V at 180 degrees and 0.707A at zero degrees = 25W

Wave1 superposed with wave2 = 0V and 0A. What happens to the energy?
Does that sound like rocket science?
--
73, Cecil http://www.qsl.net/w5dxp

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204. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 02:29:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f039719$1_7@corp.newsgroups.com>
Source record: 113648

Roy Lewallen wrote:
> You've failed to convince me that there are one or more waves of average
> power traveling and reflecting within a transmission line.

From "Transmission Lines and Networks", by Walter Johnson.
"P = |E+|^2/Z0 - |E-|^2/Z0"

Power delivered to the load equals forward power minus reflected
power.

Johnson continues: "We can regard the first term in this
expression as the power associated with the forward-traveling wave,
and the second term as the reflected power (associated with the
rearward-traveling wave)"

What do you think a Bird wattmeter is reading?
--
73, Cecil http://www.qsl.net/w5dxp

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205. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 03:01:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg77411hht4o5b@corp.supernews.com>
Source record: 113649

W5DXP wrote:
> Roy Lewallen wrote:
>
>> You've failed to convince me that there are one or more waves of
>> average power traveling and reflecting within a transmission line.
>
>
> From "Transmission Lines and Networks", by Walter Johnson.
> "P = |E+|^2/Z0 - |E-|^2/Z0"
>
> Power delivered to the load equals forward power minus reflected
> power.
>
> Johnson continues: "We can regard the first term in this
> expression as the power associated with the forward-traveling wave,
> and the second term as the reflected power (associated with the
> rearward-traveling wave)"
>
> What do you think a Bird wattmeter is reading?

Voltage and current.

Roy Lewallen, W7EL

206. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 03:10:00 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f03a02e_4@news1.prserv.net>
Source record: 113650

Go to the Polyphaser web site and read up on "Ufer" grounds. Invented for
exactly your situation.

--
Crazy George
Remove NO and SPAM from return address
"SPENCER" <w1gak@cybermesa.nospam.com> wrote in message
news:3F012634.2060901@cybermesa.nospam.com...
> I just moved to New Mexico. I need advice on how to put my ground rod
> into this rocky soil. HELP
>
> Spencer
>

207. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 03:31:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f03a58c$1_7@corp.newsgroups.com>
Source record: 113651

Roy Lewallen wrote:
> W5DXP wrote:
>> What do you think a Bird wattmeter is reading?
>
> Voltage and current.

What is voltage times current when they are in phase?

How much power will a 50 ohm load accept from a 150 ohm
feedline with 100W of forward power?
--
73, Cecil http://www.qsl.net/w5dxp

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208. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 03:39:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg79bj15acve56@corp.supernews.com>
Source record: 113652

W5DXP wrote:
>
> Irradiance in optics is "only average powers" and optical physicists
> don't seem to have any problems with it, Roy. In fact, the Poynting
> Vector is an energy averaging process. Instantaneous energy in EM
> waves is not very useful and difficult if not impossible to measure.
> . . .

Huh? The first two texts I looked at (King, Mimno, and Wing's _Transmission Lines, Antennas, and Wave Guides_, and Kraus' _Electromagnetics_), define a complex Poynting vector, which is time varying. I think you mean that instantaneous energy in EM waves is inconvenient so should be discounted and ignored.

Roy Lewallen, W7EL

209. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 03:44:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg79k9tm15l1c4@corp.supernews.com>
Source record: 113653

Cecil, you're very skilled at agressively deflecting an argument away from an area that's difficult for you, but I won't play that game. Where's that example or experiment? Or is the Bird wattmeter, a voltage-current reading instrument with a meter calibrated in watts, the only example you can produce? Do you claim that the reading given by a Bird wattmeter can be explained only by assuming the existence of traveling and reflecting waves of average power which follow your rules of interference and direction reversal?

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
> > W5DXP wrote:
>
>>> What do you think a Bird wattmeter is reading?
>>
>>
>> Voltage and current.
>
>
> What is voltage times current when they are in phase?
>
> How much power will a 50 ohm load accept from a 150 ohm
> feedline with 100W of forward power?

210. windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 03:48:56 UTC
From: Sarge <sarge43@ev1.net>
Message-ID: <vg79uinqv3s946@corp.supernews.com>
Source record: 113654

I'd like to build a carolina windom type antenna for 10-80 metres.
Can anyone point me to some good instructions and possible parts sources?

Thank you,
Sarge

211. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 03:59:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f03ac3e$1_7@corp.newsgroups.com>
Source record: 113655

Roy Lewallen wrote:
> Where's that example or experiment?

I gave it to you last week, Roy. Here it is again:

source-----50 ohm feedline----+-----150 ohm feedline--------load
Pfwd1=100W, Pref1=0W Pfwd2=133.33W
--
73, Cecil http://www.qsl.net/w5dxp

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212. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 04:10:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f03aedf$1_7@corp.newsgroups.com>
Source record: 113656

Roy Lewallen wrote:
> Huh? The first two texts I looked at (King, Mimno, and Wing's
> _Transmission Lines, Antennas, and Wave Guides_, and Kraus'
> _Electromagnetics_), define a complex Poynting vector, which is time
> varying. I think you mean that instantaneous energy in EM waves is
> inconvenient so should be discounted and ignored.

I am, of course, referring to the time-averaged Poynting vector which
is equal to 1/2 Re(ExH*). Why does a ham need to know the instantaneous
energy in EM waves? What is the use of such a value? Hecht, in _Optics_
says that instantaneous power in light waves cannot be measured.
--
73, Cecil http://www.qsl.net/w5dxp

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213. Re: Xnecview rocks!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 04:22:15 UTC
From: Jim Richardson <warlock@eskimo.com>
Message-ID: <nknct-5nk.ln1@grendel.myth>
Source record: 113661

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

On Wed, 02 Jul 2003 18:56:48 -0700,
Jack Twilley <jmt+usenet@twilley.org> wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
>>>>>> "Dave" == Dave Platt <dplatt@radagast.org> writes:
>
> Jim> No, it's fine. I don't know what to tell you though. I start
> Jim> xnecview with the --animation option, or select anim from the
> Jim> struct menu, and I get the animation of the currents. I have no
> Jim> explanation for why it doesn't work under FBSD, I don't have an
> Jim> FBSD machine I can test it on, the ones I have are all servers :)
> Jim> Are you trying it with the test.nec I supplied? Or rather, with
> Jim> the output file from that? I do know that nec2 needs to include
> Jim> the current info in the output for the anim to work.
>
>Dave> Could this be a graphics-card X issue?
>
> Doubtful, as I've tried multiple cards.
>
> I finally remembered how to make screen dumps, so here's what I see:
>
> http://www.twilley.org/~jmt/animate.jpg
>
> That's what's on my screen when I zoom in on the antenna and select
> 'anim.'. The command line includes Jim's test NEC input file and the
> output file generated by my local nec2dx build. Those files are also
> available at:
>
> http://www.twilley.org/~jmt/animate.nec.gz
> http://www.twilley.org/~jmt/animate.out.gz
>
> The output file is roughly 1.5M compressed.
>
> It's possible that my nec2dx build is doing something wrong, but I'm
> pretty sure that's not the case.
>
>

Your image looks like a still from the anim, with the currents frozen
for the snapshot, and when I give the output file you have, to
xnecview, and select anim, I see the currents cycle. So at this point, I
```

am at a loss. I have no idea of what the problem is.

-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (GNU/Linux)

iD8DBQE/A692d90bcYOAWPYRArZbAJ4qZG5nPWV7rcMC0VCdvlD1TyF3XgCfYMc3
HEH+bfO9+AM/GaVFCvdkg40=
=YrTj
-----END PGP SIGNATURE-----

--
Jim Richardson http://www.eskimo.com/~warlock

Linux, because eventually, you grow up enough to be trusted with a fork()

214. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 04:26:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg7c3e7i3ema03@corp.supernews.com>
Source record: 113657

You presented that to illustrate your concept of "complete wave cancellation". If you're now presenting it as an example of a measurable physical phenomenon that requires your concept of traveling, reflecting, and reversing average power waves to explain, please specify what quantity it is that can't be calculated correctly without using your concepts and methods.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> Where's that example or experiment?
>
>
> I gave it to you last week, Roy. Here it is again:
>
> source-----50 ohm feedline----+-----150 ohm feedline--------load
> Pfwd1=100W, Pref1=0W Pfwd2=133.33W

215. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 04:29:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg7caahpugbf70@corp.supernews.com>
Source record: 113658

A person (ham or not) needs to know the instantaneous energy in EM waves
if he's to understand where and how energy flows in transmission lines,
and to keep from being misled by oversimplified analyses. Fortunately,
hams generally only have to deal with power entering and leaving a line,
which can be easily calculated without knowing either the instantaneous
or average power or energy anywhere within the line.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> Huh? The first two texts I looked at (King, Mimno, and Wing's
>> _Transmission Lines, Antennas, and Wave Guides_, and Kraus'
>> _Electromagnetics_), define a complex Poynting vector, which is time
>> varying. I think you mean that instantaneous energy in EM waves is
>> inconvenient so should be discounted and ignored.
>
>
> I am, of course, referring to the time-averaged Poynting vector which
> is equal to 1/2 Re(ExH*). Why does a ham need to know the instantaneous
> energy in EM waves? What is the use of such a value? Hecht, in _Optics_
> says that instantaneous power in light waves cannot be measured.

216. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 04:41:17 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F03B3ED.1FB662E2@cwis.net>
Source record: 113659

Sarge,
You would need something like 135 feet of wire, and three
insulators. Make the feed point about 33% from one end.
Depending on the lind of feed line you plan to use, that's
about it. I'd figure on needing a tuner too...
'Doc

217. Antenna Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 05:01:52 UTC
From: theplanters95@aol.comnospam
Message-ID: <20030703010152.13365.00000033@mb-m13.aol.com>
Source record: 113660

I live in an antenna challenged area and decided to use a screwdriver antenna on HF. My modified tripod has disappeared. Any ideas on how to mount a 3/8-24 screwdriver on a photo tripod? Any other mounting ideas?

Randy ka4nma

218. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 05:54:46 UTC
From: rb <rbigg@seii.net>
Message-ID: <be0g99$rf1$1@news.utelfla.com>
Source record: 113662

You can probably buy one cheaper than you can make it. Try Radio Works at www.radioworks.com to see what they have available.

If you want to make a ladderline fed windom, cut the horizontal element for 80m, and feed 14% off center.

A total single wire windom is done the same way, except only one wire is used all the way to the shack. This one must be worked against a good ground.

219. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 06:42:57 UTC
From: Helmut Wabnig <hXwabnig@aXon.at>
Message-ID: <2vj7gvovsts2tijslcj4mav623bi392ijv@4ax.com>
Source record: 113663

On Wed, 2 Jul 2003 22:48:56 -0500, "Sarge" <sarge43@ev1.net> wrote:

>I'd like to build a carolina windom type antenna for 10-80 metres.
>Can anyone point me to some good instructions and possible parts sources?
>
>Thank you,
>Sarge
>
You can buy a Windom from Kelemen
http://www.tretter-funkelektronik.de/Antennen/antennen.html
w.

220. Re: Antenna Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 06:52:30 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <be0jrh$11phml$1@ID-134747.news.dfncis.de>
Source record: 113664

Go to your local hardware store and buy a 3/8 rod
coupling and a 1/4 rod coupling and something that
you can jam each coupling into opposite ends of.
Like a PVC T.

--
73 es cul

wb3fup
a Salty Bear

"Theplanters95" <theplanters95@aol.comnospam>
wrote in message
news:20030703010152.13365.00000033@mb-m13.aol.com...
> I live in an antenna challenged area and decided
to use a screwdriver antenna
> on HF. My modified tripod has disappeared. Any
ideas on how to mount a 3/8-24
> screwdriver on a photo tripod? Any other
mounting ideas?
>
> Randy ka4nma

221. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 11:30:47 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be1459$l2v$1@slb6.atl.mindspring.net>
Source record: 113665

Cecil:

[snip]
> The Conservation of Energy principle indicates that the energy flowing
> into the impedance discontinuity must equal the energy flowing out of
> the impedance discontinuity. Therefore:
[snip]

No it doesn't! That statement is a fallicy. Energy doesn't flow and it
often disappears!

To see that, all you have to do is to consider a charged capacitor
containing a fixed amount
of energy E, which is subsequently instantly connected across an identical
capacitor containing
no energy.

Calculate the total energy in the two capacitors before and after they are
connected you will find
that the initial energy in the two capacitors is E and the final energy is
E/2.

What?

--
Peter K1PO
Indialantic By-the-Sea, FL.

222. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 11:36:17 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0414BB.7000804@comcast.net>
Source record: 113666

The radiation resistance will be in the range of 1 to 2 ohms. The ground losses will be in the range of 10 to 20 ohms.

When tuning the antenna using an analyzer tune for zero reactance at the frequency of interest. Change the length of the stinger 1/16 inch at a time. The ground losses will dominate. Efficiency will be around 5%.

A tapped coil at the base will also serve as a matching device instead of a tuner.

See the ARRL Antenna Handbook chapter 16 for more details.

Deacon Dave, W1MCE
+ + +

Dave Platt wrote:
>>No! They just have a coil! Your friend will need a 'stinger' that
>>fastens to the top of the RM-75. The Hustler mobile antennas are
>>designed for a working length of 7 to 8 feet. It's length is adjusted to
>>bring the antenna to resonance. A good antenna analyzer will help at
>>this point.
>>
>>There is another post that states a tuner is needed and that is correct.
>>The feedpoint impedance is very low and the tuner will allow a match for
>>reasonable power transfer to the antenna.
>
>
> Would a suitable un-un do the job as well? Just how low is the
> feedpoint Z on these?
>

223. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 12:20:03 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <2i78gvo364e6mq15a4440lcjfrr3tm0gkn@4ax.com>
Source record: 113667

On Wed, 2 Jul 2003 22:48:56 -0500, "Sarge" <sarge43@ev1.net> wrote:

>I'd like to build a carolina windom type antenna for 10-80 metres.
>Can anyone point me to some good instructions and possible parts sources?

For antenna parts, see web sites for the Wireman, or Davis RF, or
Radioworks.
>
>Thank you,
>Sarge
>

Do a search for Cebik -- I think his call is W4RNL. He has an article
on off-center fed dipoles, that is, Windoms, and compares them to
center-fed dipoles.

But to make an exact replica of the "Carolina Windom" that Radioworks
sells, it'd be cheaper to just buy theirs. See their web site.

Bob
k5qwg

224. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 12:49:50 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be18ph$g7p$1@slb0.atl.mindspring.net>
Source record: 113668

Cecil:

[snip]
> Power delivered to the load equals forward power minus reflected
> power.
>
> Johnson continues: "We can regard the first term in this
> expression as the power associated with the forward-traveling wave,
> and the second term as the reflected power (associated with the
> rearward-traveling wave)"
>
> What do you think a Bird wattmeter is reading?
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

Notwithstanding their labels and nomenclatures, Bird wattmeters do not read power!

In reality, Bird wattmeters provide an "indication" of the derived quantities commonly
called reflected voltage [B = V -RI] and incident voltage [A = V + RI] computed
by their internal analog computation circuitry from the fundamental quantities of voltage
V and current I on the line at their point of insertion.

Reflected Power is an unfortunate misnomer and is a ficticious quantity used only to
facilitate certain transmission line calculations. The term "Reflected Power" was never
meant to be taken literally by its' originators. Subsequently uninformed "zealot's" such as
yourself and the wonderful Maxwell have taken this literal interpertation of Reflected Power
and its' "religious" interpertations much to far! :-)

The use of this pseudonom "reflected power" for interperation of the actual physics and
dynamics of electrical transmsision waves in the manner you are proposing is incorrect and
fraught with many possible pitfalls. Please don't "engineer" any Saftey of Life
systems using your allegorical mis-interpertations of "reflected power".

Power has units of energy per unit of time [Joules/second] and as such reflects only
a steady state view of the world i.e. a smooth flow of energy. Power cannot be
stored like energy since power is a derived "flow" quantity, i.e. a flow of the
fundamental quantity called "energy".

Energy on the other hand can be reflected and stored and a proper and correct
mathematical analysis of reflected energy transient dynamics is exactly correlated with
actual physics and measurements and can be easily carried out using LaPlace Transform
techniques [Once called Heaviside's Operational Calculus].

During the steady state there simply is no power sloshing about longitudinally
from end to end of a transmission line, instead during steady state the line has stored
the energy it took to charge the line as potential energy in its' oscillating magnetic
and electric fields [i.e. in its' distributed capacitanceand inductance] which thus "sloshes"
back and forth transversally from side to side [so to speak] on the line. All the
while energy is being continuously delivered in one direction only from prime mover [source]
to load unidirectionally down the line. [Unless of course there are prime movers
at each end of the line in which case power will/can flow simultaneously in both
directions.] There is no such thing as a reflected power flowing continuously
back down the line and recirculating longitudinally! That just does not happen
in the steady state!

Additionally there is no such thing as a "power reflection coefficient" as you have
called it.

There is only "The Reflection Coefficient" which is defined on an
impedance basis [i.e. based upon V and I] namely RHO = (R-Z)/(R+Z) where
R is the "reference impedance" and Z is the impedance "faced" by R.

In terms of the voltage V and current I at a reference plane [point] on a transmission
line the so-called reflected voltage wave is B = V - RI a derived quantity not actually
existing on the line, and the incident voltage wave is A = V + RI, another derived quantity
not actually existing on the line, and it is very easily shown that B =

RHO*A with RHO
as defined above. A and B exist only withing the Bird's so called wattmeter circuitry.

By the way, RHO(p) is a complex function of complex frequency p since in general
both driving point impedances R(p) and Z(p) are also functions of the complex
frequency "p = s + jw" and RHO(p) can be readily transformed [Fourier or LaPlace] into
a time domain impulse response function rho(t) which can be used to calculate exact time \
domain echo responses in the transient domain which correlate perfectly with measurements.

BTW... you are in error in most of your equations since, RHO^2 is not mathematically correct
in your equations and is simply not a quantity of interest. The quantity of interest in the Feldtkeller
power relationship is RHO*(complex conjugate of RHO) NOT RHO*RHO.

Cecil, stop being "reckless with mathematics" and do a little more research before promugating such questionable and potentially misleading metaphors of reflection dynamics.

Best regards, ;-)

--
Peter K1PO
Indialantic By-the-Sea, FL.

225. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 13:21:31 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F042D66.9040100@comcast.net>
Source record: 113569

Peter Brackett wrote:
> Cecil:
>
> [snip]
>
>>The Conservation of Energy principle indicates that the energy flowing
>>into the impedance discontinuity must equal the energy flowing out of
>>the impedance discontinuity. Therefore:
>
> [snip]
>
> No it doesn't! That statement is a fallicy. Energy doesn't flow and it
> often disappears!
>
> To see that, all you have to do is to consider a charged capacitor
> containing a fixed amount
> of energy E, which is subsequently instantly connected across an identical
> capacitor containing
> no energy.
>
> Calculate the total energy in the two capacitors before and after they are
> connected you will find
> that the initial energy in the two capacitors is E and the final energy is
> E/2.
>
> What?
>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.
>
>
The other E/2 is radiated! So, E = E/2 + E/2; all energy is accounted
for!! And it is RADIATED!! [Many an EM test has failed because of that
radiation.]

Deacon Dave, W1MCE

226. Re: Buried feedline suggestions - Thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 13:55:57 UTC
From: Bill Ogden <ogden@us.ibm.com>
Message-ID: <3F0435ED.7EA8EFA4@us.ibm.com>
Source record: 113570

IIRC, thinnet was RG-59 (73 ohms). Good stuff for dipoles.

Our location threw away (after great expense for pulling it) tons of RG-62
(90+ ohms) used for 3270 terminals.

Next to go will be tons of "token ring" cable -- STP.

Bill
W2WO

wess@gtii.com wrote:

> aunwin@insightbb.com (Art Unwin KB9MZ) wrote:
>
> > One day I will pull the discontinued forms of wiring
> >Art
>
> When you get a round tuit? The last job I worked was filled with
> triax, arcnet cable, thinnet, and utp along with 25pair telco. I was
> responsible for everything other than the 25 pair and nothing ever got
> pulled.
>
> Now in another profession, I work maintenace and the spaces are filled
> with twinax, thinnet, Tbase2, 25 pair, and cat5 (abandoned) and cat5e
> (new stuff). Nothing has ever come down. I think I remember thinnet
> being 50ohm so maybe a piece or three might come down if it has radio
> use.
>
> Then there are conduit runs with wires last powered in the 70's going
> to places that don't exist.....
>
> Wire is forever...
>
> 73, wes, kc8spr
>
> --
> Reply to:
> Whiskey Echo Sierra Sierra AT Gee Tee EYE EYE dot COM
> Lycos address is a spam trap.

227. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 14:24:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f043e99_3@corp.newsgroups.com>
Source record: 113571

Roy Lewallen wrote:
> You presented that to illustrate your concept of "complete wave
> cancellation". If you're now presenting it as an example of a measurable
> physical phenomenon that requires your concept of traveling, reflecting,
> and reversing average power waves to explain, please specify what
> quantity it is that can't be calculated correctly without using your
> concepts and methods.

It's not nice to imply that I said something that I never said. Here's
what I specifically assert at the beginning of my article:

"Note that this is *NOT* a new and different method of system analysis.
The ONLY purpose of this paper is to illustrate how to track the energy
at an impedance discontinuity point in a transmission line."

What is it about, "This is *NOT* a new and different method of system
analysis" that you don't understand?
--
73, Cecil http://www.qsl.net/w5dxp

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228. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 14:37:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0441ad_3@corp.newsgroups.com>
Source record: 113572

Peter Brackett wrote:
> Reflected Power is an unfortunate misnomer and is a ficticious quantity used
> only to facilitate certain transmission line calculations.

I have asked you to present an example of standing waves in a single
source, single feedline, single load system devoid of reflected waves.
So far you haven't done so.

Reflected waves possess energy. Energy flowing past a point is defined
as power by the IEEE dictionary.

> Energy on the other hand can be reflected ...

What happens to the energy in canceled waves that are destroyed?
--
73, Cecil http://www.qsl.net/w5dxp

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229. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 14:45:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0443b1$1_3@corp.newsgroups.com>
Source record: 113573

Roy Lewallen wrote:
> A person (ham or not) needs to know the instantaneous energy in EM waves
> if he's to understand where and how energy flows in transmission lines,
> and to keep from being misled by oversimplified analyses.

None of my references deal with anything except average power. Virtually
all references to power use RMS values of voltage and current. Even
"PEP is the *average* power supplied ... during one RF cycle at the
crest of the modulation envelope ..." The very existence of a delta-t
term for power implies an average value over that delta-t time.
--
73, Cecil http://www.qsl.net/w5dxp

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230. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 14:47:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f044426$1_3@corp.newsgroups.com>
Source record: 113574

Peter Brackett wrote:
> Calculate the total energy in the two capacitors before and after they are
> connected you will find
> that the initial energy in the two capacitors is E and the final energy is
> E/2.

You forgot the smiley face, Peter. E/2 is dissipated as heat but the
total energy remains exactly the same.
--
73, Cecil http://www.qsl.net/w5dxp

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231. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 14:51:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0444ec$1_3@corp.newsgroups.com>
Source record: 113575

Dave Shrader wrote:
> The other E/2 is radiated! So, E = E/2 + E/2; all energy is accounted
> for!! And it is RADIATED!! [Many an EM test has failed because of that
> radiation.]

I forgot about radiation, Dave, and you forgot about heat.
E/2 leaves the system as radiation plus heat.
--
73, Cecil http://www.qsl.net/w5dxp

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232. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 14:53:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f044582$1_3@corp.newsgroups.com>
Source record: 113576

Helmut Wabnig wrote:

> "Sarge" <sarge43@ev1.net> wrote:
>>I'd like to build a carolina windom type antenna for 10-80 metres.
>>Can anyone point me to some good instructions and possible parts sources?
>
> You can buy a Windom ...

He could also buy a woman but I'll bet he prefers not to. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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233. A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 15:20:05 UTC
From: Thierry <lombrytNOSPAM@hotmail.com>
Message-ID: <3f0449a1$1_1@news.vo.lu>
Source record: 113577

Hi,

There are several manufacturers or multiband dipoles (i.e.G5RV) between
Universal radio, USA2Way, WIMO, etc, including some variant like W3DZZ, etc.
Prices are also flexible from $30 - $140 !
I prefer to buy one in place of building it.

I am looking for a multiband G5RV able to work between 80-10m and supporting
1 kW (so about 31m long).
According your experience what should be the best brand considering VSWR,
quality of material, longevity and resistance to UV, etc, easy to setup,
quality insolators, robustness of the wire and its accessories ?

Thanks in advance

Thierry
http://www.astrosurf.com/lombry
LX3SKY

234. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 15:57:10 UTC
From: richardharrison@webtv.net
Message-ID: <8189-3F045256-78@storefull-2318.public.lawson.webtv.net>
Source record: 113580

Roy, W7EL wrote:
"A person (ham or not) needs to know the instantaneous energy in EM waves if he`s to undrestand how energy flows in transmission lines---."

Further discussion has involved the Poynting vector which never concerned me on transmission lines.

If you sum all the power passing through an imaginary bubble having a fixed distance from an enclosed radiator, the total must equal the total radiation. If the radiator is not isotropic, each equal area of the bubble won`t have the same power passing through.

The reason for stating the obvious above comes from Cecil`s and Roy`s mention of the Poynting vector. A vector has direction in addition to magnitude. The difference between a vector and a phasor is not very important.

When we use vectors to describe an alternating voltage, current, or the fields they produce, all we need is consistency in picking peak or rms but when we calculate power we use rms volts and amps or we multiply peak volts and amps and divide the product by 2.

There is power in magnetic and electric fields. A magnetic field turns a motor. An electric field sucks electrons to the plate of a tube. Time varying fields can reproduce each other, causing radiation. So, it`s natural that in a propagating wave, each field, electric and magnetic, has equal strength, that is, 1/2 the total energy.

The propagating wave has a strength experessed in volts per meter. In free-space, the radiation field declines linearly along any radial from an isotropic source. That is, if the strength at one mile is one volt per meter, the strength at two miles will be one-half volt per meter.

Power is E squared over R. The resistance of free-space is 377 ohms. Power in a 1V/mtr wave is 0.0027 watt per sq.mtr.. Power in a 1/2V/mtr. wave is 0.00067 watt per sq.mtr..

The Poynting vector is a vector which defines the direction of energy flow as well as its magnitude. Its magnitude at a point in space depends on propagation pattern among other factors.

The magnitude of the Poynting vector is given in watts per square meter under specified conditions by King, Mimno, and Wing in their equation 44.2.

A vector represents a wave magnitude as a fixed length, not as a continuously varying quantity in most cases. That`s what prompts my

response to Roy`s instantaneous energy in EM waves remark.

Best regards, Richard Harrison, KB5WZI

235. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 16:03:39 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F045365.1060101@comcast.net>
Source record: 113578

Bingo, Cecil gets the cigar!!

I worry about heat these days only when the Air Conditioning isn't
working :-)

DD, W1MCE

W5DXP wrote:
> Dave Shrader wrote:
>
>> The other E/2 is radiated! So, E = E/2 + E/2; all energy is accounted
>> for!! And it is RADIATED!! [Many an EM test has failed because of that
>> radiation.]
>
>
> I forgot about radiation, Dave, and you forgot about heat.
> E/2 leaves the system as radiation plus heat.

236. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 16:09:16 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F04552C.4622D9F3@uci.edu>
Source record: 113579

W5DXP wrote:
> Your steady-state shortcut model leaves out a very important
> step in understanding the match point at an impedance discontinuity
> in a transmission line.

How did it become MY model? I think it belongs to everyone. :-)
The problem with your model is that it relys on non-existant physical
phenomena. Makes it kind of a tough sell to realists.

> If it hasn't been defined before, it's high
> time that someone defines it. I am reluctant to do so, but if it has
> to be me, so be it. However, it will do me no good. I would much rather
> that you obtain fame for this discovery. Think about how famous you
> could be.

Is that what this is all about? I think the all the fame for research
on this subject has already been served up and properly accredited.

73, Jim AC6XG

237. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 16:21:24 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F0457F2.4FD74AC6@shaw.ca>
Source record: 113581

W5DXP wrote:
>
> Helmut Wabnig wrote:
>
> > "Sarge" <sarge43@ev1.net> wrote:
> >>I'd like to build a carolina windom,,,
> > You can buy a Windom ...
>
> He could also buy a woman but I'll bet he prefers not to. :-)
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
Instead of buying a woman, is he going to do it himself? :-)
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

238. ? about AT-11MP tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:11:34 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030703131134.05149.00000061@mb-m14.aol.com>
Source record: 113582

Does anyone know if the AT-11MP antenna tuner will tune a 6m antenna? I know the specs say no, but I thought I remembered reading somewhere that it would work with 6m.

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-

73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

239. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:26:42 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F046752.600E08B1@uci.edu>
Source record: 113583

W5DXP wrote:
> Energy flowing past a point is defined
> as power by the IEEE dictionary.

It can be expressed in units of power, just as the vertical potential energy in a projectile at the highest point in its trajectory can be expressed in the same units as kinetic energy.

> > Energy on the other hand can be reflected ...
>
> What happens to the energy in canceled waves that are destroyed?

Energy exists only where the waves exist. If there is no path for the wave to propagate, no energy is transferred by those waves, and the energy stored in the line continues to oscillate between the E and H fields (as Peter explained), stimulated by the boundary potential.

73, ac6xg

240. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:40:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <l9p8gv8n50hge0s48shm3fi3jhbjn13ujk@4ax.com>
Source record: 113585

On Wed, 02 Jul 2003 20:54:14 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> This math represents a total statement covering all issues of
>> interference for any form of radiation in any situation. Simpler
>> solutions that abandon phase to scalar representation also abandon
>> access to a phase argument.
>
>Richard, please apply that math to the following experiment. We have
>a two watt laser emitting coherent light. The beam is broken into
>two one watt beams. One beam travels 180 degrees farther than the other.
>The two beams are then recombined along exactly the same vector path
>such that the waves cancel 100%. What happens to the energy and
>momentum in the two canceled beams?

Hi Cecil,

The math is complete. Do it yourself. You will discover that you
have, as usual, misbounded the question. If you cannot accept your
mistake, no amount of computation on my part will be accepted by you
anyway.

As for what happens to momentum, to put it succinctly, don't go where
you are unprepared to visit. (It also suffers from the lack of
bounding.) This immaterial inclusion of yet another phenomenon is
further example of poor writing where you guild the lily. It lacks
any introduction by you to present its relevance. This is a lack of
focus that is certainly within the venue of newsgroup activity, but
when I challenge you on it, you scuttle under a rock complaining of
that same lack of relevance. I see no reason to pursue an agenda you
refuse to attend after you once introduce it.

73's
Richard Clark, KB7QHC

241. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:40:57 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F046AA9.AD9DE9C@uci.edu>
Source record: 113584

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>75W + 8.33W does NOT equal 133.33W under any circumstances.
> >
> > Not even if the circumstances include the constructive interference
> > term? ;-)
>
> If it includes the constructive interference term, then let's add
> the constructive interference term.
>
> 75W + 8.33W + 50W = 133.33W
>
> Yep, I like it, but Dr. Best denied that is what happens.

I don't know what Dr. Best said, but if your paraphrasing of his remarks is anything like your paraphrasing of my remarks, I think we need to let Dr. Best speak for himself.

> No reply to my question: "What if
> the source is nine light years away from the interference." Before you
> reply, consider that the 50W is defined as the "interference term",
> and obviously being constructive interference, requires an equal
> magnitude of destructive interference somewhere else, according to
> _Optics_, by Hecht. Your hole just gets deeper and deeper with every
> posting.

Not at all. It's entirely consistant with my claim. Do I need to write the equation for the reverse direction too so that you can see that too? There's no energy "turning around" in those equations. Different waves are involved in each case.

And I still don't see how lengthening the transient period makes any difference.

73, Jim AC6XG

242. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:48:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f046e79_2@corp.newsgroups.com>
Source record: 113586

Thierry wrote:
> I am looking for a multiband G5RV able to work between 80-10m and supporting
> 1 kW (so about 31m long).

If you are looking for a G5RV that will cover all the ham bands between 80m and 10m, you will be extremely disappointed. The G5RV was designed before the WARC bands were available. Here's the theory behind a G5RV:

The G5RV works on 20m, the band for which it was designed, because it is 1.5WL long and fed with 1/2WL of balanced line.

On 40m, the G5RV is 0.75WL long fed with 1/4WL of balanced line. The 1/4WL feedline *IS* a 1/4WL transformer for the high impedance of the 0.75WL dipole.

On 80m, the G5RV is 0.375WL long fed with 1/8WL of balanced line. Take a look at my web page to see that this is a pretty good match.

On 15m, the G5RV is 2.25WL long fed with 3/4WL of balanced line. Not a good match.

On 10m, the G5RV is 3WL long fed with 1WL of balanced line. That's bad news.

Those were all the HF bands that existed when the G5RV was invented. It is a complete accident that the G5RV works well on 12m. It is a complete disaster on 30m.

So you can expect your G5RV to work well on 80m, 40m, 20m, and 12m. That's not bad but it's a far cry from an all-band antenna. OTOH, on my web page, I describe how to turn a 130 ft dipole into a true all-HF-band antenna by simply varying the length of the feedline.

Incidentally, by varying the length of the G5RV matching section, one can obtain a relatively good match on all HF bands.
--
73, Cecil http://www.qsl.net/w5dxp

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243. Re: ? about AT-11MP tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:52:41 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mrq8gvk2aotorclb0jm889f04bvat7h2hg@4ax.com>
Source record: 113587

On 03 Jul 2003 17:11:34 GMT, vhfradiobuff@aol.comspamme (VHFRadioBuff)
wrote:

>Does anyone know if the AT-11MP antenna tuner will tune a 6m antenna? I know
>the specs say no, but I thought I remembered reading somewhere that it would
>work with 6m.

Hi Andy,

A tuner will tune any antenna (as long as the antenna/system does not
present reactances that cannot be accommodated). You might ask
yourself why the manufacturer would willing impose a condition that
was frequency related. The answer may devolve to how much loss are
you willing to accept in attempting to tune the antenna? Then you
need to translate that loss into heat burden for the tuner, and what
is its capacity to hold heat. Will it delaminate a board? Char
components? Melt solder? It may not flame, but it may be ruined far
in advance of that final stage.

There is also the question of metering and control (I presume this is
an automatic tuner that is a companion for another piece of
equipment.) At higher frequencies, the metering/control may lose
sensitivity, and at some frequency that circuitry will fail totally.

73's
Richard Clark, KB7QHC

244. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:57:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9er8gvscvh3sds7gdr6coe3huj6bhk68iv@4ax.com>
Source record: 113588

On Thu, 3 Jul 2003 17:20:05 +0200, "Thierry"
<lombrytNOSPAM@hotmail.com> wrote:

>Hi,
>
>There are several manufacturers or multiband dipoles (i.e.G5RV) between
>Universal radio, USA2Way, WIMO, etc, including some variant like W3DZZ, etc.
>Prices are also flexible from $30 - $140 !
>I prefer to buy one in place of building it.
>
>I am looking for a multiband G5RV able to work between 80-10m and supporting
>1 kW (so about 31m long).
>According your experience what should be the best brand considering VSWR,
>quality of material, longevity and resistance to UV, etc, easy to setup,
>quality insolators, robustness of the wire and its accessories ?
>
>Thanks in advance
>
>Thierry
>http://www.astrosurf.com/lombry
>LX3SKY
>

Hi Thierry,

Buy locally because the only thing of value you will obtain is the
right to gripe about it failing. Why pay more for excessive postage
stateside, exchanges, repeated attempts to contact the vendor? If it
doesn't fail, then you got your money's worth. If it does, you can
meet them with the charred remains and humble them.

73's
Richard Clark, KB7QHC

245. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 17:57:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f047099_2@corp.newsgroups.com>
Source record: 113589

Jim Kelley wrote:

> W5DXP wrote:
> How did it become MY model? I think it belongs to everyone. :-)

I didn't mean to imply that you own it, Jim, merely that you are
using it.

> The problem with your model is that it relys on non-existant physical
> phenomena. Makes it kind of a tough sell to realists.

So does yours, Jim, about six non-existant physical phenomena at
last count.

> I think the all the fame for research
> on this subject has already been served up and properly accredited.

I'm not looking for fame, just answers to questions that you and others
refuse to answer. One wonders why you don't answer my questions. One
wonders why I cannot find answers to my questions in any of my references.
Here's one of of my questions again. Please answer in classical physics
terms of wave models.

We have two watts of coherent, single-frequency light sourced from a
laser. We set up an inference exercise by dividing that single two-
watt beam into two one-watt beams. We do whatever is necessary to
get those two beams to be 180 degrees out of phase. Then we do whatever
is necessary re-combine them along an identical vector path. Just before
the re-combining, the two waves each possessed energy and momentum. After
the re-combining, the two waves disappear through 100% cancellation. What
happens to the energy and momentum pre-existing in those two waves?
--
73, Cecil http://www.qsl.net/w5dxp

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246. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:04:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04722e_2@corp.newsgroups.com>
Source record: 113590

Jim Kelley wrote:

> I don't know what Dr. Best said, ...

You are always telling me to read the material, Jim. Why don't you
take your own advice. You cannot possibly understand the context of
the present discussion unless you have read Walter Maxwell, Jon Bloom,
and Steven Best. Why do you choose to remain ignorant of the context?

> And I still don't see how lengthening the transient period makes any
> difference.

Your proposed waves have to be smart enough to know whether to carry
energy or not. You say if the energy is going to be dissipated, the
wave carries energy. You say if the energy is not going to be dissipated,
the wave carries no energy. If the energy is coming from Alpha Centauri,
the waves have to be smart enough to predict the future 9 years ahead of
time and know whether to carry energy or not. Your proposed smart waves,
smarter than you or I, are a gigantic hole in your assertions. Another
gigantic hole in your assertions is that EM waves can exist without energy.
--
73, Cecil http://www.qsl.net/w5dxp

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247. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:07:12 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0470D0.11D44B55@uci.edu>
Source record: 113591

W5DXP wrote:

> Irradiance in optics is "only average powers" and optical physicists
> don't seem to have any problems with it, Roy. In fact, the Poynting
> Vector is an energy averaging process.

Averaged over one cycle, in order the the energy per unit time comes out
correctly.

> Instantaneous energy in EM
> waves is not very useful and difficult if not impossible to measure.

Instaneous voltage peaks aren't that difficult to measure any more, and
are just as useful a term as other way of expressing sinusoidal
waveforms.

> Forward power and reflected power in a transmission line are similar to
> irradiance in optics.

Due simply to the fact that the units go as the square of the electric
field in both cases. What are you inferring from that?

73, AC6XG

248. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:14:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0474a9_2@corp.newsgroups.com>
Source record: 113593

Richard Harrison wrote:
> A vector represents a wave magnitude as a fixed length, not as a
> continuously varying quantity in most cases. That`s what prompts my
> response to Roy`s instantaneous energy in EM waves remark.

Most of us use the time-averaged Poynting Vector. Roy introduced the
instantaneous Poynting Vector which obviously exists, but AFAIK, has
very little usefulness. As Hecht says, in _Optics_, "Furthermore, since
the power arriving cannot be measured instantaneously, the detector must
integrate the energy flux over some finite time, T."
--
73, Cecil http://www.qsl.net/w5dxp

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249. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:16:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg8snst4h2a359@corp.supernews.com>
Source record: 113592

It's not necessary for something to be a phasor or a vector -- it can be one or the other, both, or neither. And they're not the same.

A phasor quantity can have physical direction. Therefore, it can also be a vector having X, Y, and Z coefficients (that is, coefficients of unit vectors i, j, and k) describing its orientation and/or direction of movement, in addition to its vector-like real and imaginary values describing amplitude and time phase. An example of this is an E field radiated from an antenna being driven with a sine wave. It has both time phase and directional orientation, and so can be described as a vector phasor. A phasor can be a (physically directional) vector, or it can be a scalar. An example of the latter is the voltage in an AC circuit, which is a phasor but not a vector. And, a directional vector can be a phasor, DC, or have any other time relationship. For example, the E field from an antenna driven with a square wave is a vector, since it has a physical orientation and direction of propagation -- but it can't be described as a phasor, since it's a complex time waveform. The H field of a permanent magnet is a vector, since it has physical orientation, but isn't a phasor, since it doesn't vary with time at all.

Which brings us to the Poynting vector. The Poynting vector is a time-varying quantity with a physical direction. But even if the component E and H fields are sinusoidal, the Poynting vector can't be described as a phasor in the same terms as the component fields. The reason is the same as why a power waveform can't be described in terms of constituent V and I phasors -- there's an implicit time-varying factor contained in a phasor, and the period is different for the power waveform than it is for the V or I waveforms. So the implicit frequency used to describe V and I as phasors is wrong for the power waveform. The Poynting vector has the same problem with being described in terms of E and H phasors.

One can, of course, calculate an average value for the Poynting vector, just as you can calculate the average value of power. The average value of both these quantities is useful for many or most purposes. But to see where the power or energy is really going requires use of the time-varying values.

Over a cycle, the Poynting vector changes amplitude, and it can reverse direction -- just like a power waveform. (It is, after all, a power waveform with physical direction.) In the case of a purely reactive field, for example, the Poynting vector will point inward as often as it does outward, revealing that power is being moved through the observation surface and back each cycle. It will average out to zero, but knowledge of that movement of power is lost in the averaging

calculation.

Richard, the equation you reference in King, Mimno, and Wing is the magnitude of the Poynting vector. The complete time-varying value of the Poynting vector is given by the preceding equation, 44.1.

The only reason I mentioned the Poynting vector was in response to Cecil's statement that "In fact, the Poynting Vector is an energy averaging process." He later said that, of course, he was talking about the average Poynting vector. Well, taking the average value of the Poynting vector does give you average power flow. But it doesn't tell you how much energy there is -- for exactly the same reason that knowing what speed you're going doesn't tell you how far you've driven.

Roy Lewallen, W7EL

Richard Harrison wrote:
> Roy, W7EL wrote:
> "A person (ham or not) needs to know the instantaneous energy in EM
> waves if he`s to undrestand how energy flows in transmission lines---."
>
> Further discussion has involved the Poynting vector which never
> concerned me on transmission lines.
>
> If you sum all the power passing through an imaginary bubble having a
> fixed distance from an enclosed radiator, the total must equal the total
> radiation. If the radiator is not isotropic, each equal area of the
> bubble won`t have the same power passing through.
>
> The reason for stating the obvious above comes from Cecil`s and Roy`s
> mention of the Poynting vector. A vector has direction in addition to
> magnitude. The difference between a vector and a phasor is not very
> important.
>
> When we use vectors to describe an alternating voltage, current, or the
> fields they produce, all we need is consistency in picking peak or rms
> but when we calculate power we use rms volts and amps or we multiply
> peak volts and amps and divide the product by 2.
>
> There is power in magnetic and electric fields. A magnetic field turns
> a motor. An electric field sucks electrons to the plate of a tube. Time
> varying fields can reproduce each other, causing radiation. So, it`s
> natural that in a propagating wave, each field, electric and magnetic,
> has equal strength, that is, 1/2 the total energy.
>
> The propagating wave has a strength experessed in volts per meter. In
> free-space, the radiation field declines linearly along any radial from
> an isotropic source. That is, if the strength at one mile is one volt
> per meter, the strength at two miles will be one-half volt per meter.
>
> Power is E squared over R. The resistance of free-space is 377 ohms.

> Power in a 1V/mtr wave is 0.0027 watt per sq.mtr.. Power in a 1/2V/mtr.
> wave is 0.00067 watt per sq.mtr..
>
> The Poynting vector is a vector which defines the direction of energy
> flow as well as its magnitude. Its magnitude at a point in space depends
> on propagation pattern among other factors.
>
> The magnitude of the Poynting vector is given in watts per square meter
> under specified conditions by King, Mimno, and Wing in their equation
> 44.2.
>
> A vector represents a wave magnitude as a fixed length, not as a
> continuously varying quantity in most cases. That`s what prompts my
> response to Roy`s instantaneous energy in EM waves remark.
>
> Best regards, Richard Harrison, KB5WZI
>

250. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:19:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0475be$1_2@corp.newsgroups.com>
Source record: 113595

Irv Finkleman wrote:

> W5DXP wrote:
>
>>Helmut Wabnig wrote:
>>>You can buy a Windom ...
>>
>>He could also buy a woman but I'll bet he prefers not to. :-)
>
> Instead of buying a woman, is he going to do it himself? :-)

Well, I've heard of running the operation all alone by hand. :-)
But I suspect he would look upon it as a project to research and
develop (R&D) a woman to his specifications. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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251. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:19:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg8su0iofrombe@corp.supernews.com>
Source record: 113594

Ah, so there is no experiment or example that can be constructed to test your theory by measuring observable results.

I wish you would have said this up front, instead of first tossing out the Bird wattmeter, then a couple of connected transmission lines, as examples that would.

Well, since your theory is untestable, it remains to be settled purely by argument. I'll gladly leave that to others.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> You presented that to illustrate your concept of "complete wave
>> cancellation". If you're now presenting it as an example of a
>> measurable physical phenomenon that requires your concept of
>> traveling, reflecting, and reversing average power waves to explain,
>> please specify what quantity it is that can't be calculated correctly
>> without using your concepts and methods.
>
>
> It's not nice to imply that I said something that I never said. Here's
> what I specifically assert at the beginning of my article:
>
> "Note that this is *NOT* a new and different method of system analysis.
> The ONLY purpose of this paper is to illustrate how to track the energy
> at an impedance discontinuity point in a transmission line."
>
> What is it about, "This is *NOT* a new and different method of system
> analysis" that you don't understand?

252. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:26:42 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F047562.947B3BD0@uci.edu>
Source record: 113597

Bravo, K1PO!

ac6xg

Peter Brackett wrote:
>
> Cecil:
>
> [snip]
> > Power delivered to the load equals forward power minus reflected
> > power.
> >
> > Johnson continues: "We can regard the first term in this
> > expression as the power associated with the forward-traveling wave,
> > and the second term as the reflected power (associated with the
> > rearward-traveling wave)"
> >
> > What do you think a Bird wattmeter is reading?
> > --
> > 73, Cecil http://www.qsl.net/w5dxp
> [snip]
>
> Notwithstanding their labels and nomenclatures, Bird wattmeters do not read
> power!
>
> In reality, Bird wattmeters provide an "indication" of the derived
> quantities commonly
> called reflected voltage [B = V -RI] and incident voltage [A = V + RI]
> computed
> by their internal analog computation circuitry from the fundamental
> quantities of voltage
> V and current I on the line at their point of insertion.
>
> Reflected Power is an unfortunate misnomer and is a ficticious quantity used
> only to
> facilitate certain transmission line calculations. The term "Reflected
> Power" was never
> meant to be taken literally by its' originators. Subsequently uninformed
> "zealot's" such as
> yourself and the wonderful Maxwell have taken this literal interpertation of
> Reflected Power
> and its' "religious" interpertations much to far! :-)
>
> The use of this pseudonom "reflected power" for interperation of the actual
> physics and

> dynamics of electrical transmsision waves in the manner you are proposing is
> incorrect and
> fraught with many possible pitfalls. Please don't "engineer" any Saftey of
> Life
> systems using your allegorical mis-interpertations of "reflected power".
>
> Power has units of energy per unit of time [Joules/second] and as such
> reflects only
> a steady state view of the world i.e. a smooth flow of energy. Power cannot
> be
> stored like energy since power is a derived "flow" quantity, i.e. a flow of
> the
> fundamental quantity called "energy".
>
> Energy on the other hand can be reflected and stored and a proper and
> correct
> mathematical analysis of reflected energy transient dynamics is exactly
> correlated with
> actual physics and measurements and can be easily carried out using LaPlace
> Transform
> techniques [Once called Heaviside's Operational Calculus].
>
> During the steady state there simply is no power sloshing about
> longitudinally
> from end to end of a transmission line, instead during steady state the line
> has stored
> the energy it took to charge the line as potential energy in its'
> oscillating magnetic
> and electric fields [i.e. in its' distributed capacitanceand inductance]
> which thus "sloshes"
> back and forth transversally from side to side [so to speak] on the line.
> All the
> while energy is being continuously delivered in one direction only from
> prime mover [source]
> to load unidirectionally down the line. [Unless of course there are prime
> movers
> at each end of the line in which case power will/can flow simultaneously in
> both
> directions.] There is no such thing as a reflected power flowing
> continuously
> back down the line and recirculating longitudinally! That just does not
> happen
> in the steady state!
>
> Additionally there is no such thing as a "power reflection coefficient" as
> you have
> called it.
>
> There is only "The Reflection Coefficient" which is defined on an
> impedance basis [i.e. based upon V and I] namely RHO = (R-Z)/(R+Z) where

> R is the "reference impedance" and Z is the impedance "faced" by R.
>
> In terms of the voltage V and current I at a reference plane [point] on a
> transmission
> line the so-called reflected voltage wave is B = V - RI a derived quantity
> not actually
> existing on the line, and the incident voltage wave is A = V + RI, another
> derived quantity
> not actually existing on the line, and it is very easily shown that B =
> RHO*A with RHO
> as defined above. A and B exist only withing the Bird's so called wattmeter
> circuitry.
>
> By the way, RHO(p) is a complex function of complex frequency p since in
> general
> both driving point impedances R(p) and Z(p) are also functions of the
> complex
> frequency "p = s + jw" and RHO(p) can be readily transformed [Fourier or
> LaPlace] into
> a time domain impulse response function rho(t) which can be used to
> calculate exact time \
> domain echo responses in the transient domain which correlate perfectly with
> measurements.
>
> BTW... you are in error in most of your equations since, RHO^2 is not
> mathematically correct
> in your equations and is simply not a quantity of interest. The quantity of
> interest in the Feldtkeller
> power relationship is RHO*(complex conjugate of RHO) NOT RHO*RHO.
>
> Cecil, stop being "reckless with mathematics" and do a little more research
> before promugating such questionable and potentially misleading metaphors of
> reflection dynamics.
>
> Best regards, ;-)
>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.

253. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:27:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0477b1_2@corp.newsgroups.com>
Source record: 113599

Richard Clark wrote:
> You will discover that you
> have, as usual, misbounded the question.

Whenever Richard C. is at a loss for answers, he accuses the
other person of "misbounding the question". That's one of
the classical "argumentum ad _________" logical diversions,
but I can't remember the name of it at the moment. I suspect
it must be "reductio ad absurdum", with emphasis on the "dum"
part. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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254. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:28:05 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <lss8gvspk6nlvrjj8jhroqug6d6r5m31r7@4ax.com>
Source record: 113596

On Thu, 03 Jul 2003 13:04:00 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Why do you choose to remain ignorant of the context?

Hi Cecil,

So the personal vendetta is the focus of your magnum opus in
contradiction to your earlier denials? Or are we simply being regaled
with a off-topic inclusion for the duration of this thread alone?

Is context so important that your unadorned facts collapse into
irrelevant discussion?

Ecco Vanitas!

73's
Richard Clark, KB7QHC

255. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:31:00 UTC
From: dplatt@radagast.org
Message-ID: <vg8tj4bjg59j1d@corp.supernews.com>
Source record: 113598

>The radiation resistance will be in the range of 1 to 2 ohms. The ground
>losses will be in the range of 10 to 20 ohms.

Gotcha, thanks! It's sort of a shame in a way that Detroit doesn't
make vehicles out of sheet copper ;-)

>When tuning the antenna using an analyzer tune for zero reactance at the
>frequency of interest. Change the length of the stinger 1/16 inch at a
>time. The ground losses will dominate. Efficiency will be around 5%.
>
>A tapped coil at the base will also serve as a matching device instead
>of a tuner.

Fair enough. I was thinking about something like a 12.5:50 ohm unun,
but a tapped coil would have better flexibility (and an ATU even more,
although its losses might be higher than a beefy coil with a manual tap)

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

256. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:35:07 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f047984_2@corp.newsgroups.com>
Source record: 113600

Jim Kelley wrote:
> Energy exists only where the waves exist. If there is no path for the
> wave to propagate, ...

But there is always another path for the wave to propagate in a transmission line - the only other direction available. When a wave encounters a short circuit, the energy changes directions. When wave#1 encounters an equal magnitude, opposite phase wave#2 traveling in the same direction, the energy changes directions. There *always exists* the other path for energy. Otherwise, the Conservation of Energy principle would be violated.

If "energy exists only where the waves exist", how can waves exist without energy, as you have asserted numerous times? That's another one of your contradictions that you refuse to address.
--
73, Cecil http://www.qsl.net/w5dxp

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257. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:39:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f047a8e$1_2@corp.newsgroups.com>
Source record: 113603

Richard Clark wrote:
> So the personal vendetta is the focus of your magnum opus in
> contradiction to your earlier denials?

Not a vendetta, Richard, just a search for the truth. Those bright guys all disagree with each other. One wonders why.

> Is context so important that your unadorned facts collapse into
> irrelevant discussion?

Context is extremely important. I would also be at a loss in a Russian language discussion group. I'm not omniscient like you.
--
73, Cecil http://www.qsl.net/w5dxp

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258. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:41:50 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0478EE.30510417@uci.edu>
Source record: 113601

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > I don't know what Dr. Best said, ...
>
> You are always telling me to read the material, Jim. Why don't you
> take your own advice. You cannot possibly understand the context of
> the present discussion unless you have read Walter Maxwell, Jon Bloom,
> and Steven Best. Why do you choose to remain ignorant of the context?

It's not a choice I've made, really. I don't have a subscription to QEX, and the article isn't available online. In retrospect I guess you do have a point though. Reading your material does tend to leave one ignorant of the subject. :-)

> > And I still don't see how lengthening the transient period makes any
> > difference.

> Your proposed waves have to be smart enough to know whether to carry
> energy or not.

You see, this is where your blind-side leaves you wanting. You have never understood the expression 'transfer of energy'. The cancellation has nothing to do with how long the transmission line is.

How about an analogy? Cecil is sitting in Texas, and knowledge is being radiated toward him from some distant source. The knowlege arrives at Cecil's location, but Cecil blocks it out and the result is that there is no transfer of knowledge. :-)

73, AC6XG

259. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:42:03 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vg8u4tb96b4v8e@corp.supernews.com>
Source record: 113602

I too urge people to add their comments.

I guess that about 5% of the almost 1500 comments are duplicates. Some
people entered their comments four times.
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Rob Kemp" <robkemp90210@hotmail.com> wrote in message
news:6114e4af.0307020550.1fadf70b@posting.google.com...
> Save our shortwave from white noise at S9 - stop BPL/PLC
>
> Comments are due on or before July 7, 2003. The FCC now is accepting
> electronically filed comments via its Electronic Comment Filing System
> (ECFS).
>
> http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi
>
> In the "Proceeding" field, enter "03-104" and complete the required
> fields. Comments may be typed into a form or you may attach a file
> containing your comments.
>
<snip>

260. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:44:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f047ba4$1_2@corp.newsgroups.com>
Source record: 113605

Jim Kelley wrote:
> Instaneous voltage peaks aren't that difficult to measure any more, and
> are just as useful a term as other way of expressing sinusoidal
> waveforms.

What is the instantaneous voltage peak in the light from Alpha Centauri?

>>Forward power and reflected power in a transmission line are similar to
>>irradiance in optics.
>
> Due simply to the fact that the units go as the square of the electric
> field in both cases. What are you inferring from that?

That the "forward power and reflected power in a transmission line are
similar to irradiance in optics".
--
73, Cecil http://www.qsl.net/w5dxp

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261. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:45:35 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ecu8gvobun5gvq3k3ghf37dv3040imoa9h@4ax.com>
Source record: 113604

On Thu, 03 Jul 2003 13:27:44 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>with emphasis on the "dum"

>
>well, that ends this discussion... when it degenerates to personal insults
>it means that both sides have run out of logical arguments and will never
>see eye to eye.

I will bow to Mr. Robbins observation.

73's
Richard Clark, KB7QHC

262. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:51:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f047d4b_2@corp.newsgroups.com>
Source record: 113606

Roy Lewallen wrote:
> Ah, so there is no experiment or example that can be constructed to test
> your theory by measuring observable results.

On the contrary, here's the experiment, repeated once again in case
you missed the last N times I posted it over the past N weeks:

We have two watts of coherent, single-frequency light sourced from a
laser. We set up an inference exercise by dividing that single two-
watt beam into two one-watt beams. We do whatever is necessary to
get those two beams to be 180 degrees out of phase. Then we re-combine
them along an identical vector path. Just before the re-combining,
the two waves each possessed energy and momentum. After the re-combining,
the two waves disappear through 100% wave cancellation. What happens to
the energy and momentum that pre-existed in those two EM waves?
--
73, Cecil http://www.qsl.net/w5dxp

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263. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 18:55:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f047e46$1_2@corp.newsgroups.com>
Source record: 113607

Jim Kelley wrote:
> Bravo, K1PO! ac6xg

Too bad the explanation is simply evidence of extreme seduction
by the steady-state model. :-) How can standing waves with energy
exist without reflected waves with energy? I have asked that question
at least a dozen times and the silence is deafening.
--
73, Cecil http://www.qsl.net/w5dxp

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264. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:00:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <25v8gvc8t0aj22iemv7cnpjdc3jduu12gu@4ax.com>
Source record: 113608

On Thu, 03 Jul 2003 13:39:58 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>> Is context so important that your unadorned facts collapse into
>> irrelevant discussion?
>
>Context is extremely important.

Hi Cecil,

In so far as your vendetta goes, context proves you were snookered
from the git-go!

By the way, there is no honor in enforcing your own snooker (you play
the game, but poorly) on others to find your satisfaction. Get over
it.

73's
Richard Clark, KB7QHC

265. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:05:48 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <be1uqg$dc77$1@ID-134747.news.dfncis.de>
Source record: 113609

Feed the dipole with a balanced line feeder and
tune anywhere you want to. I cant get my 68'
dipole onto 160, but it works everything from 80
to 10 w/o complaint.

--
73 es cul

wb3fup
a Salty Bear

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f046e79_2@corp.newsgroups.com...
> Thierry wrote:
> > I am looking for a multiband G5RV able to work
between 80-10m and supporting
> > 1 kW (so about 31m long).
>
> If you are looking for a G5RV that will cover
all the ham bands between
> 80m and 10m, you will be extremely disappointed.
The G5RV was designed
> before the WARC bands were available. Here's the
theory behind a G5RV:
>
> The G5RV works on 20m, the band for which it was
designed, because it
> is 1.5WL long and fed with 1/2WL of balanced
line.
>
> On 40m, the G5RV is 0.75WL long fed with 1/4WL
of balanced line. The 1/4WL
> feedline *IS* a 1/4WL transformer for the high
impedance of the 0.75WL dipole.
>
> On 80m, the G5RV is 0.375WL long fed with 1/8WL
of balanced line. Take a
> look at my web page to see that this is a pretty
good match.
>
> On 15m, the G5RV is 2.25WL long fed with 3/4WL
of balanced line. Not a good
> match.
>
> On 10m, the G5RV is 3WL long fed with 1WL of

balanced line. That's bad news.
>
> Those were all the HF bands that existed when
the G5RV was invented. It is
> a complete accident that the G5RV works well on
12m. It is a complete disaster
> on 30m.
>
> So you can expect your G5RV to work well on 80m,
40m, 20m, and 12m. That's
> not bad but it's a far cry from an all-band
antenna. OTOH, on my web page,
> I describe how to turn a 130 ft dipole into a
true all-HF-band antenna by
> simply varying the length of the feedline.
>
> Incidentally, by varying the length of the G5RV
matching section, one can
> obtain a relatively good match on all HF bands.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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266. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:09:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f048182_2@corp.newsgroups.com>
Source record: 113611

Jim Kelley wrote:
> It's not a choice I've made, really. I don't have a subscription to
> QEX, and the article isn't available online. In retrospect I guess you
> do have a point though.

I have the article(s) on CD. If you will agree in writing not to reproduce
the articles in any manner whatsoever, I will loan you the CD.

> You have never understood the expression 'transfer of energy'.

I understand the expression, Jim, and I understand what a contradiction
it presents for you. Given two of the ways that waves can cease to exist,
the energy can, 1. be transferred to a resistor or, 2. be transferred to
the point of wave cancellation. But you cannot allow energy to be transferred
to the point of wave cancellation. Therefore, you cannot allow any energy
in your waves that are going to be destroyed by wave cancellation. Therefore,
your waves have to know ahead of time whether they are going to be destroyed
or not. Your waves have to be smarter than you are. Even though they carry
identical voltages, currents, and phases, the waves that will be dissipated
in a resistor possess energy and the waves that will be destroyed by wave
cancellation possess no energy. That's supernatural stuff, Jim. Sorry, I
just don't buy it. Waves carry whatever energy waves carry. If they cease
to exist because they encounter a resistor or because they engage in wave
cancellation, they give up the same amount of energy in the process.

> How about an analogy? Cecil is sitting in Texas, and knowledge is being
> radiated toward him from some distant source. The knowlege arrives at
> Cecil's location, but Cecil blocks it out and the result is that there
> is no transfer of knowledge. :-)

But there is still a transfer of energy. You are arguing that if a tree
falls in the woods and no one hears it, it doesn't make any noise. You
should confine your metaphysical assertions to more appropriate newsgroups.
--
73, Cecil http://www.qsl.net/w5dxp

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267. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:09:54 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <be1v26$dg34$1@ID-134747.news.dfncis.de>
Source record: 113610

You will be pleasantly surprised at how little RF
you need to radiate to be heard. But you have to
give your radio a load to work against. Cross
polarization will be a problem for local contacts,
but makes no difference once you start to bounce.
HAVE FUN!

--
73 es cul

wb3fup
a Salty Bear

"Dave Platt" <dplatt@radagast.org> wrote in
message news:vg8tj4bjg59j1d@corp.supernews.com...
> >The radiation resistance will be in the range
of 1 to 2 ohms. The ground
> >losses will be in the range of 10 to 20 ohms.
>
> Gotcha, thanks! It's sort of a shame in a way
that Detroit doesn't
> make vehicles out of sheet copper ;-)
>
> >When tuning the antenna using an analyzer tune
for zero reactance at the
> >frequency of interest. Change the length of the
stinger 1/16 inch at a
> >time. The ground losses will dominate.
Efficiency will be around 5%.
> >
> >A tapped coil at the base will also serve as a
matching device instead
> >of a tuner.
>
> Fair enough. I was thinking about something
like a 12.5:50 ohm unun,
> but a tapped coil would have better flexibility
(and an ATU even more,
> although its losses might be higher than a beefy
coil with a manual tap)
>
> --
> Dave Platt <dplatt@radagast.org>
AE6EO
> Hosting the Jade Warrior home page:

http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited
commercial email, and I will
> boycott any company which has the gall to
send me such ads!

268. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:14:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0482bb_2@corp.newsgroups.com>
Source record: 113612

Richard Clark wrote:
> In so far as your vendetta goes, context proves you were snookered
> from the git-go!

No vendetta, Richard, I just haven't found a satisfactory answer
yet. Seems you equate curiousity with being snookered. That's a pity.
Were you born omniscient?
--
73, Cecil http://www.qsl.net/w5dxp

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269. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:18:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f048386$1_2@corp.newsgroups.com>
Source record: 113613

WB3FUP (Mike Hall) wrote:
> Feed the dipole with a balanced line feeder and
> tune anywhere you want to. I cant get my 68'
> dipole onto 160, but it works everything from 80
> to 10 w/o complaint.

Ever measure the loss in your tuner on 80m? I melted
my coil form one time doing what you are doing.
--
73, Cecil http://www.qsl.net/w5dxp

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270. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:44:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <pn19gvgi5fvhgjt966l09lmbtgqsmuqc44@4ax.com>
Source record: 113614

On Thu, 03 Jul 2003 14:14:49 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> In so far as your vendetta goes, context proves you were snookered
>> from the git-go!
>
>No vendetta, Richard, I just haven't found a satisfactory answer
>yet. Seems you equate curiousity with being snookered. That's a pity.
>Were you born omniscient?

I was there when you got blind-sided by your poor boundary management.
But let's just salve your wounded ego with the agreement that you are
not on a vendetta and that your "facts" cannot stand alone without
this -uh- context you both deny and rely on.

73's
Richard Clark, KB7QHC

271. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 19:54:56 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F048A10.B95C3528@uci.edu>
Source record: 113615

W5DXP wrote:
>
> Jim Kelley wrote:
> > It's not a choice I've made, really. I don't have a subscription to
> > QEX, and the article isn't available online. In retrospect I guess you
> > do have a point though.
>
> I have the article(s) on CD. If you will agree in writing not to reproduce
> the articles in any manner whatsoever, I will loan you the CD.
>
> > You have never understood the expression 'transfer of energy'.

> I understand the expression, Jim, and I understand what a contradiction
> it presents for you.

It solves the problem with your argument Cecil. You just don't want to
see it.

> Given two of the ways that waves can cease to exist,
> the energy can, 1. be transferred to a resistor or, 2. be transferred to
> the point of wave cancellation. But you cannot allow energy to be transferred
> to the point of wave cancellation.

It IS transferred there, but only during the transient period.

> Therefore, you cannot allow any energy
> in your waves that are going to be destroyed by wave cancellation.
Actually, your energy model is the one with the problem in that regard.

> Therefore,
> your waves have to know ahead of time whether they are going to be destroyed
> or not.

You've got the wrong picture in mind. Picture the oft used water pipe
analogy. The energy source is the water spigot at one end. Water
pressure is the energy. The other end of the pipe is blocked, i.e.
there is no outlet for EM wave energy. (We'll assume the pipe is under
a vacuum, or ignore air pressure.) When the spigot is opened, we begin
the transient period, and that lasts until the water reaches the
blockage. At that point the spigot maintains water pressure within the
pipe, but the water stops flowing, i.e. the energy from the spigot
reaches no farther than the blockage. If spigot is closed and the
blockage is removed, water pressure energy in the form of the flow of
water is conveyed beyond that point to whatever terminus happens to
exist until the pressure drops to zero. Or, if the pressure to the
spigot is removed, water will backflow through the spigot until the

pressure in the pipe goes to zero.

> Your waves have to be smarter than you are. Even though they carry
> identical voltages, currents, and phases, the waves that will be dissipated
> in a resistor possess energy and the waves that will be destroyed by wave
> cancellation possess no energy.

You're just blithering, Cecil.

> > How about an analogy? Cecil is sitting in Texas, and knowledge is being
> > radiated toward him from some distant source. The knowlege arrives at
> > Cecil's location, but Cecil blocks it out and the result is that there
> > is no transfer of knowledge. :-)

> You are arguing that if a tree
> falls in the woods and no one hears it, it doesn't make any noise. You
> should confine your metaphysical assertions to more appropriate > newsgroups.

It was just an analogy - like this one: Disussing something with Cecil
is like talking to the tree that fell in the forest. :-)

73, ac6xg

272. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:12:51 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F048E43.C6A9D3C4@uci.edu>
Source record: 113618

W5DXP wrote:
>
> Jim Kelley wrote:
> > Bravo, K1PO! ac6xg
>
> Too bad the explanation is simply evidence of extreme seduction
> by the steady-state model. :-)

That's because truth is more seductive than falacy. :-)

> How can standing waves with energy
> exist without reflected waves with energy? I have asked that question
> at least a dozen times and the silence is deafening.

Turn down your squelch. It's been asnwered at least a dozen times. The question is based on a malformed premise. It's not unlike asking how could an apple fall to the ground when there is no force from the sky pushing it there?

73 de ac6xg

273. Re: Antenna Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:19:42 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <3F048FE1.9040507@tampabay.rr.com>
Source record: 113616

even easier
go to radio shack and buy one of the mirror mounts and just bolt it to
the tripod that way you dont damage the tripod

274. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:21:10 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F049036.F47DCE27@uci.edu>
Source record: 113617

W5DXP wrote:
>
> Roy Lewallen wrote:
> > Ah, so there is no experiment or example that can be constructed to test
> > your theory by measuring observable results.
>
> On the contrary, here's the experiment, repeated once again in case
> you missed the last N times I posted it over the past N weeks:
>
> We have two watts of coherent, single-frequency light sourced from a
> laser. We set up an inference exercise by dividing that single two-
> watt beam into two one-watt beams. We do whatever is necessary to
> get those two beams to be 180 degrees out of phase. Then we re-combine
> them along an identical vector path. Just before the re-combining,
> the two waves each possessed energy and momentum. After the re-combining,
> the two waves disappear through 100% wave cancellation. What happens to
> the energy and momentum that pre-existed in those two EM waves?

Sounds familiar. But you left out quite a bit of detail. Among other
things, you need to tell us what you think happens in such an
experiment.

73, Jim AC6XG

275. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:27:50 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0491C6.917CA1B0@uci.edu>
Source record: 113519

W5DXP wrote:
> What is the instantaneous voltage peak in the light from Alpha Centauri?

It's 1.414 times the RMS voltage in the light from Alpha Centauri. :-)

> >>Forward power and reflected power in a transmission line are similar to
> >>irradiance in optics.
> >
> > Due simply to the fact that the units go as the square of the electric
> > field in both cases. What are you inferring from that?

> That the "forward power and reflected power in a transmission line are
> similar to irradiance in optics".

Similar, in that the units both go as the square of the electric field?
Or similar in some other way?

73, Jim AC6XG

276. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:29:27 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vg94inhmch0q07@corp.supernews.com>
Source record: 113521

tell ya what folks
if you didn't think government was completely insane before this
what's it gonna take to convince you?
where is the fiber optic infrastructure?
what happened?
it's worth the freaking money!!
glad I'm old
the 60's were actually a hopeful time
morons
H.
NQ5H

"J. McLaughlin" <JCM@Power-Net.Net> wrote in message
news:vg8u4tb96b4v8e@corp.supernews.com...
> I too urge people to add their comments.
>
> I guess that about 5% of the almost 1500 comments are duplicates. Some
> people entered their comments four times.
> 73 Mac N8TT
>
> --
> J. Mc Laughlin - Michigan USA
> Home: JCM@Power-Net.Net
>
> "Rob Kemp" <robkemp90210@hotmail.com> wrote in message
> news:6114e4af.0307020550.1fadf70b@posting.google.com...
> > Save our shortwave from white noise at S9 - stop BPL/PLC
> >
> > Comments are due on or before July 7, 2003. The FCC now is accepting
> > electronically filed comments via its Electronic Comment Filing System
> > (ECFS).
> >
> > http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi
> >
> > In the "Proceeding" field, enter "03-104" and complete the required
> > fields. Comments may be typed into a form or you may attach a file
> > containing your comments.
> >
> <snip>
>

277. Re: ? about AT-11MP tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:30:14 UTC
From: kenfowler@attbi.com
Message-ID: <wKGcnTBbKZnFD5miXTWJkw@comcast.com>
Source record: 113520

On 3-Jul-2003, vhfradiobuff@aol.comspamme (VHFRadioBuff) wrote:

> Does anyone know if the AT-11MP antenna tuner will tune a 6m antenna? I know
> the specs say no, but I thought I remembered reading somewhere that it would
> work with 6m.

Don't know about a 6m antenna as I don't have one. But I just tried the AT-11 with my 40/80 m
dipoles and the best that it could do was 3:1 VSWR. So then I tried the FT-920 internal tuner which
could get the VSWR down to < 1.5. Even called a station in Arizona that I heard and made contact:
I'm in the SF Bay Area. Efficiency was probably < 10%, antenna pattern less than optimum, but when
the band is open, anything "works".

KO6NO

278. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:34:22 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F04934E.117FC2F1@uci.edu>
Source record: 113523

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> > How did it become MY model? I think it belongs to everyone. :-)
>
> I didn't mean to imply that you own it, Jim, merely that you are
> using it.
>
> > The problem with your model is that it relys on non-existant physical
> > phenomena. Makes it kind of a tough sell to realists.
>
> So does yours, Jim, about six non-existant physical phenomena at
> last count.

But like I said, it's not my model. It's the one everyone (besides you)
uses.

> > I think the all the fame for research
> > on this subject has already been served up and properly accredited.

> I'm not looking for fame, just answers to questions that you and others
> refuse to answer. One wonders why you don't answer my questions. One
> wonders why I cannot find answers to my questions in any of my references.
> Here's one of of my questions again. Please answer in classical physics
> terms of wave models.

> We have two watts of coherent, single-frequency light sourced from a
> laser. We set up an inference exercise by dividing that single two-
> watt beam into two one-watt beams. We do whatever is necessary to
> get those two beams to be 180 degrees out of phase. Then we do whatever
> is necessary re-combine them along an identical vector path. Just before
> the re-combining, the two waves each possessed energy and momentum. After
> the re-combining, the two waves disappear through 100% cancellation. What
> happens to the energy and momentum pre-existing in those two waves?

That's very similar to the experiment I used to show you how your model
is wrong. Only I described how all the light moves from place to
place. That's missing from your "experiment". The question has already
been answered - just like all the others. Why not explain what you
think happens to the energy? Maybe you have it right by now.

73 de AC6XG

279. Outdoor TV antenna installation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:37:16 UTC
From: d_dave@my-deja.com
Message-ID: <1cb17f33.0307031237.725a340e@posting.google.com>
Source record: 113522

I just bought an antenna that has a connection for a twin-lead wire but I want to connect this directly to a television w/ only one coax input. What would be the proper wiring procedures and what type of converters and splitters will i need. Are there antennas out there w/ only a coax connections for both uhf/vhf?

280. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:42:40 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F049540.E46FD2CB@uci.edu>
Source record: 113524

W5DXP wrote:
> When a wave encounters a
> short circuit, the energy changes directions. When wave#1 encounters
> an equal magnitude, opposite phase wave#2 traveling in the same direction,
> the energy changes directions.

We know that a wave (or some part of it) changes direction when it
encounters a physical discontinuity. But you continue to fail to
explain how a wave changes direction when it encounters an equal
magnitude opposite phase wave #2 traveling in the same direction.

Can you show the Poynting vector turning around? That would be a
reasonable proof. But you've provided no specific mechanism for
accomplishing this feat of magic.

> There *always exists* the other path for energy.
> Otherwise, the Conservation of Energy principle would be violated.

There is no path for energy after waves cancel. And it's already well
known and understood that energy is conserved.

> If "energy exists only where the waves exist", how can waves exist without
> energy, as you have asserted numerous times?

There's that lie again. Evidently this is the only way for you to make
a point in a discussion.

ac6xg

281. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 20:53:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <eh59gv0873sv69mj7irvqots4u5ft9elmh@4ax.com>
Source record: 113525

On Thu, 3 Jul 2003 15:29:27 -0500, "H. Adam Stevens"
<solo@totalaccess.net> wrote:
>where is the fiber optic infrastructure?
>what happened?

Hi OM,

We currently have somewhere on the order of 95% to 98% excess fiber optic capacity! It is where all that money planted it, along the roads of America, just short of the homes it would serve had the technology market not collapsed 3 years ago.

The reason (or partial reason) for that collapse is called "the last mile." In terms of simple economics, that excess capacity was the simplest infrastructure addition. The problem of "the last mile" is that to connect every home (or at least enough to make marketing this bandwidth profitable) will cost vastly more than the original investment. The best short term prospects are found in the analog of a Central Office offering Wi-Fi connections to nearby RF networked communities.

Barring the planting of more fiber optic to your doorstep, there is vastly more chance of new roof mounted antennas in our future.

73's
Richard Clark, KB7QHC

282. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 21:01:40 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vg96f4cb5pmnee@corp.supernews.com>
Source record: 113526

Richard I know the math!
That's my point, short term economics is stupid.
(like communism, which will die with no help from religious nuts)
In the old days of Bell Labs it just would have just been done.
Lyndon Johnson, elected by fraud as was the current buffoon (not that gore was a "choice" - sigh)
Someone went to sleep since Penzias and Wilson worried over their noise figure.
A tight fiber optic infrastructure is bullet proof!
H.
NQ5H
We (Bastrop County folks) did my 40th field operating with batteries by my pool....

"Richard Clark" <kb7qhc@comcast.net> wrote in message news:eh59gv0873sv69mj7irvqots4u5ft9elmh@4ax.com...
> On Thu, 3 Jul 2003 15:29:27 -0500, "H. Adam Stevens"
> <solo@totalaccess.net> wrote:
> >where is the fiber optic infrastructure?
> >what happened?
>
> Hi OM,
>
> We currently have somewhere on the order of 95% to 98% excess fiber
> optic capacity! It is where all that money planted it, along the
> roads of America, just short of the homes it would serve had the
> technology market not collapsed 3 years ago.
>
> The reason (or partial reason) for that collapse is called "the last
> mile." In terms of simple economics, that excess capacity was the
> simplest infrastructure addition. The problem of "the last mile" is
> that to connect every home (or at least enough to make marketing this
> bandwidth profitable) will cost vastly more than the original
> investment. The best short term prospects are found in the analog of
> a Central Office offering Wi-Fi connections to nearby RF networked
> communities.
>
> Barring the planting of more fiber optic to your doorstep, there is
> vastly more chance of new roof mounted antennas in our future.
>
> 73's
> Richard Clark, KB7QHC

283. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 21:17:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F049D75.5F3E40A0@uci.edu>
Source record: 113527

W5DXP wrote:
>
> Jim Kelley wrote:
> > For normal incidence, cos theta = -1, and n1=1 (Z0=50), then r12 and r23
> > are given by r12=n1-n2/n1+n2, r23=n2-n3/n2+n3, and reflectivity
> > R = ((r12-r23)/(1-(r12*r23)))^2 = (((n1*n3) - n2^2)/((n1*n3)+n2^2))^2.
> > "The reflectivity is then a maximum or a minimum according to whether
> > the refractive index [~impedance] of the film [n2=1.22, ~Z1=150] is
> > greater or smaller than the refective index of the last medium [n3=1.5,
> > ~ZL=450]." In the reflected direction the indices are in the reverse order.

> Those are light reflection indices which are not the same as transmission
> line power reflection coefficients. They are equivalent to the voltage
> reflection coefficients in a transmission line and indeed, for voltage
> reflection coefficients, the signs are different looking in opposite
> directions.

Actually, they're proportional to the square of the reflection
coefficients.
That's what ^2 means. Only these equations express the reflectivity of
the entire network, rather than for each surface as it would perform in
the baseness of the others like you've been doing.

> Your Rmaximum and Rminimum at any one plane have the same magnitude and
> opposite signs. Walter Maxwell said nothing remotely resembling that. He
> said the reflection coefficient for the forward wave is zero and the
> reflection coefficient for the reflected wave is unity. Those are calculated
> mathematical reflection coefficients, not physical reflection coefficients.

Ah, I see. Well, you're partly right. I didn't exactly drop the other
shoe yet. When light is going from dense to less dense (looking toward
the source from the load), cos theta = 1, and
R=((r12+r23)/(1+(r11*r23)))^2,
= ((n1-n3)/(n1+n3))^2. Remember n1 is the first media and n3 is the
last media on the path. So you're right, it's not unity. (I was
"seduced" by the transmission coefficient in the forward direction.:-)
I get .64 whether I use reflection coefficients or impedances. But it's
a moot point in that direction anyway because there's nothing on the
back side of the load. The energy is has been dissipated at that point.

> > In other words, no energy is
> > reflected back toward the source from the first boundary, and any energy
> > reflected by the load is 100% re-reflected by the back side of the
> > second boundary.

> You are bending the truth to the breaking point. R for forward and reverse
> directions are equal in magnitude and opposite in sign. One is NOT zero
> and the other is NOT unity.

R is zero in the forward direction - unless you disagree with Born and
Wolf.

> > The point is that any detailed energy analysis of what goes on within
> > the boundaries must be completely consistant with the steady state
> > analysis.

> There's that old "math model dictates reality" mentality again, Jim.

The math model was derived from reality, Cecil. It describes exactly
what happens. The irradiance equations, used properly with the voltages
you've been using works out perfectly without energy having to reverse
direction somewhere between the source and the match point.

> For instance: Standing waves are impossible in a single source, single
> feedline, single load system unless a forward traveling wave exists and
> a rearward traveling wave exists. Once the standing waves are calculated,
> you guys forget or deliberately ignore the existence of the cause of the
> standing waves.

The standing waves do not comprise an element in the path that energy
follows from source to load. It doesn't mean they don't "contain"
energy. It just means they don't convey energy from one place to
another. The energy they "contain" was delivered there during the
transient period. Energy is not drawn from them nor is additional
energy supplied to them.

73, Jim AC6XG

284. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:04:36 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be299mlqm1@slb2.atl.mindspring.net>
Source record: 113528

Cecil:

Actually that "old chesnut" pits the Conservation of Energy principle against the Conservation of Charge principle. Neither principle has ever actually been "proved" and neither is an immutable law of Physics. In fact relativity theory proposes that charge [matter] and energy are interchangeable. Something Albert said about E = mc^2

If you had to pick one or the other principle which would you choose.

Heh, heh... Which of these is the strongest principal? Clearly today you like the Energy conservaton principle best...

;-)

One can mathematically "prove" that the extra E/2 energy is dissipated either as heat energy [phonons]or as radiated energy [photons] or by some combination of both by introducing some small resistance "r" and/or some small length of conductor "l" into the wires connecting the two capacitors and then showing that the energy is dissipated in the resistor r or radiated from the length of wire l as the charge is accelerated on it's trip to equalize the charge in the two capacitors.

What happens to this E/2 energy as you let r or l approach an infinitesimal r ->dr or l -> dl?

How hot does the resistor r get in degrees K? How much e^2 = kTRB Johnson noise is generated by the r?

:-)

--
Peter K1PO

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message news:3f044426$1_3@corp.newsgroups.com...
> Peter Brackett wrote:
> > Calculate the total energy in the two capacitors before and after they are
> > connected you will find
> > that the initial energy in the two capacitors is E and the final energy is
> > E/2.
>
> You forgot the smiley face, Peter. E/2 is dissipated as heat but the
> total energy remains exactly the same.
> --

> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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285. Re: Windom 80

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:10:46 UTC
From: "G.Beat" <now9gb@spam.comcast.net>
Message-ID: <GR1Na.30496$Xm3.6422@sccrnsc02>
Source record: 113529

Here are some links for drawings / designs

http://www.geocities.com/ve7caq/windom.html

http://www.gw3vvc.freeserve.co.uk/carolina.htm

Carolina Windom 80
http://www.radioworks.com/ccw80.html

http://www.radioworks.com/ccwcover.html

What's the windoms's secret?
It's the Vertical Radiator.

Combined with the Dedicated Matching Unit and special Line Isolator,

it is responsible for the low-angle, vertical radiation pattern.

W9GB
--
Do NOT use REPLY
Reply only through ARRL forwarding service to W9GB

"Sarge" <sarge43@ev1.net> wrote in message
news:vg79uinqv3s946@corp.supernews.com...
> I'd like to build a carolina windom type antenna for 10-80 metres.
> Can anyone point me to some good instructions and possible parts sources?
>
> Thank you,
> Sarge
>
>

286. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:20:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04ae3f_6@corp.newsgroups.com>
Source record: 113530

Jim Kelley wrote:
> It solves the problem with your argument Cecil. You just don't want to
> see it.

It certainly does resolve any problems. All waves contain energy. All
waves transfer that energy when they are dissipated or radiated or when
they are destroyed by wave cancellation.

> It IS transferred there, but only during the transient period.

We know, Jim, the steady-state has supernatural powers. Too bad
the steady-state never exists in the real world. In the real world,
the transient state continues forever because of noise. Sorry about
that fact of physics.

> You've got the wrong picture in mind. Picture the oft used water pipe
> analogy. The energy source is the water spigot at one end. Water
> pressure is the energy. The other end of the pipe is blocked, i.e.
> there is no outlet for EM wave energy.

Wave destruction is the outlet for EM wave energy just as it is for
dissipation in a resistor or radiation from an antenna. Waves CANNOT
exist without energy. When a wave is destroyed, it MUST, of necessity,
give up its energy. That wave simply has no other choice.

> You're just blithering, Cecil.

When your alleged technical argument fails, mount an ad hominem attack.
--
73, Cecil http://www.qsl.net/w5dxp

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287. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:26:18 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vg9b9f8ipehgeb@corp.supernews.com>
Source record: 113531

Of interest is that some of that investment was done right. My local, independent telephone company put much of their profits (over a number of years) into the ground with cable and glass. The results are that it now pays only about three pole charges (cost per year to the power company) and has very good bandwidth right where people live. Pole charges went up in cost several times once cable TV arrived. I have two telephone lines (had three when sons were at home) and DSL on one of the several wide bandwidth lines that are burred right up to the house. Takes attention to details and forward planning. The family who own the telephone company are not rich, but they live and work here.
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net
Office: JCM@McLMcL.Com
"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:eh59gv0873sv69mj7irvqots4u5ft9elmh@4ax.com...
> On Thu, 3 Jul 2003 15:29:27 -0500, "H. Adam Stevens"
> <solo@totalaccess.net> wrote:
> >where is the fiber optic infrastructure?
> >what happened?
>
> Hi OM,
>
> We currently have somewhere on the order of 95% to 98% excess fiber
> optic capacity! It is where all that money planted it, along the
> roads of America, just short of the homes it would serve had the
> technology market not collapsed 3 years ago.
>
> The reason (or partial reason) for that collapse is called "the last
> mile." In terms of simple economics, that excess capacity was the
> simplest infrastructure addition. The problem of "the last mile" is
> that to connect every home (or at least enough to make marketing this
> bandwidth profitable) will cost vastly more than the original
> investment. The best short term prospects are found in the analog of
> a Central Office offering Wi-Fi connections to nearby RF networked
> communities.
>
> Barring the planting of more fiber optic to your doorstep, there is
> vastly more chance of new roof mounted antennas in our future.
>
> 73's

> Richard Clark, KB7QHC

288. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:27:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04afd9_6@corp.newsgroups.com>
Source record: 113532

Peter Brackett wrote:
> What happens to this E/2 energy as you let r or l approach an infinitesimal
> r ->dr or l -> dl?

You have another wet dream? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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289. Re: Windom 80

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:28:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04b017$1_6@corp.newsgroups.com>
Source record: 113533

G.Beat wrote:
> What's the windoms's secret?
> It's the Vertical Radiator.

That's no secret! :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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290. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:49:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04b510_6@corp.newsgroups.com>
Source record: 113534

Jim Kelley wrote:
> R is zero in the forward direction - unless you disagree with Born and
> Wolf.

An R of zero cannot be the cause of an R of zero. You are clearly
confusing cause and effect. Figure out what causes the R of zero
when the physical R is not zero and you will understand.

> The math model was derived from reality, Cecil. It describes exactly
> what happens.

It correctly describes the *NET* outcome which is what most people are
interested in. It does NOT describe exactly what happens. You are deluding
yourself when you draw any conclusions about physics from a net outcome.

Example: My bank balance was the same at the beginning of the month and
at the end of the month. Therefore, I had no transactions during the month.
Don't you see how crazy your illogical assertions really are?

> The standing waves do not comprise an element in the path that energy
> follows from source to load.

Of course they do, Jim. The energy that flows from the source to the
load flows on a foundation of standing waves. Otherwise, that energy
would never make it. Hint: You cannot get full source power into a
mismatched load unless standing waves exist. Standing waves can only
exist when there is a forward-traveling wave and a rearward-traveling
wave. Traveling waves cannot exist without energy.

There's a simple proof. Standing waves cause additional I^2*R losses.
The R is constant. Where is the additional I coming from?

What you are saying is that train tracks have nothing to do with the
efficiency of rail transportation since they stand still. Good Grief!
--
73, Cecil http://www.qsl.net/w5dxp

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291. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:54:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04b655_6@corp.newsgroups.com>
Source record: 113535

Jim Kelley wrote:
> It's not unlike asking how
> could an apple fall to the ground when there is no force from the sky
> pushing it there?

Actually, it is like asking how a railroad functions without railroad tracks. Hint: It doesn't! Standing waves are the railroad tracks that the source power uses to transfer 100% of its energy to the load. No standing waves, no 100% transfer of source energy.
--
73, Cecil http://www.qsl.net/w5dxp

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292. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 22:55:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04b68c_6@corp.newsgroups.com>
Source record: 113536

Jim Kelley wrote:

> W5DXP wrote:
>>We have two watts of coherent, single-frequency light sourced from a
>>laser. We set up an inference exercise by dividing that single two-
>>watt beam into two one-watt beams. We do whatever is necessary to
>>get those two beams to be 180 degrees out of phase. Then we re-combine
>>them along an identical vector path. Just before the re-combining,
>>the two waves each possessed energy and momentum. After the re-combining,
>>the two waves disappear through 100% wave cancellation. What happens to
>>the energy and momentum that pre-existed in those two EM waves?
>
> Sounds familiar. But you left out quite a bit of detail. Among other
> things, you need to tell us what you think happens in such an
> experiment.

I think energy is conserved. What do you think?
--
73, Cecil http://www.qsl.net/w5dxp

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293. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:00:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04b798$1_6@corp.newsgroups.com>
Source record: 113538

Jim Kelley wrote:
> That's very similar to the experiment I used to show you how your model
> is wrong. Only I described how all the light moves from place to
> place. That's missing from your "experiment". The question has already
> been answered - just like all the others. Why not explain what you
> think happens to the energy? Maybe you have it right by now.

We know there is energy and momentum in those waves, Jim. They will
burn a hole through black paper. Your silly assertion that there
is no energy in those waves is just bafflegab.
--
73, Cecil http://www.qsl.net/w5dxp

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294. Re: Outdoor TV antenna installation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:03:22 UTC
From: "G.Beat" <now9gb@spam.comcast.net>
Message-ID: <_C2Na.97481$R73.11329@sccrnsc04>
Source record: 113537

Go purchase an outdoor 300 ohm to 75 ohm balun for your 75 ohm (RG-6/U) coax

Available at your local Radio & TV repair store (getting rarer these days)
or Radio Shack

gb

--
Do not use Reply (spam logger & catcher).
Reply only through ARRL forwarding service to W9GB

"dave" <d_dave@my-deja.com> wrote in message
news:1cb17f33.0307031237.725a340e@posting.google.com...
> I just bought an antenna that has a connection for a twin-lead wire
> but I want to connect this directly to a television w/ only one coax
> input. What would be the proper wiring procedures and what type of
> converters and splitters will i need. Are there antennas out there w/
> only a coax connections for both uhf/vhf?

295. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:05:09 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F04B6A5.8BC8973D@uci.edu>
Source record: 113539

W5DXP wrote:
> All
> waves transfer that energy when they are dissipated or radiated or when
> they are destroyed by wave cancellation.

You are approximately 66.67% correct. Two outa three ain't bad. :-)

> > It IS transferred there, but only during the transient period.

> Too bad
> the steady-state never exists in the real world.

Nor do the conditions you assumed in your paper, like lossless
transmission lines. Are we thus prevented from considering the case
where such things are negligeable compared to the effects we're
interested in? Why are you so afraid of the steady state?

> When a wave is destroyed, it MUST, of necessity,
> give up its energy.

You're thinking of anihilation. Antiparticles anihilate.

> > You're just blithering, Cecil.

> When your alleged technical argument fails, mount an ad hominem attack.

But you _were_ just blithering. Every word was absolute nonsense!
Besides, if ad hominem attacks are the test for a failed argument, yours
have failed dozens of times in the last couple of months.

73, ac6xg

296. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:14:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04bad6$1_6@corp.newsgroups.com>
Source record: 113540

Jim Kelley wrote:

>
> W5DXP wrote:
> We know that a wave (or some part of it) changes direction when it
> encounters a physical discontinuity. But you continue to fail to
> explain how a wave changes direction when it encounters an equal
> magnitude opposite phase wave #2 traveling in the same direction.

Yes, that's the missing mechanism that I hope someone will supply.
We know that such a destruction of waves will not result in energy
traveling in the original direction. We know that energy cannot be
destroyed. We know that every EM wave contains energy. Therefore,
we know that the energy in the canceled waves must go somewhere.
In a transmission line, it can only go in one other direction.

> There is no path for energy after waves cancel.

Waves cannot exist without energy. These waves cease to exist at the
cancellation point. Where does the energy in the destroyed waves go?
You have asserted that waves that are about to be canceled exist without
energy, but that is obviously a violation of the laws of physics.

>>If "energy exists only where the waves exist", how can waves exist without
>>energy, as you have asserted numerous times?
>
> There's that lie again. Evidently this is the only way for you to make
> a point in a discussion.

You just made exactly the same assertion above. You simply cannot lie about what
you have said, Jim. Well, I guess you can and you have, but you lose all respect
in the process.

You remind me of an acquaintance of mine who was caught red-handed in bed with
his neighbor's wife. He simply denied that it ever happened.
--
73, Cecil http://www.qsl.net/w5dxp

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297. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:23:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg9enirnpjj9ee@corp.supernews.com>
Source record: 113541

Just to make sure I have this straight.

You calculate the average power over an integral number of cycles, and presume that there are waves containing these constant amounts of power propagating along the line, reflecting, and reversing direction when necessary to conserve energy. Then you calculate the values of these integral-cycle power waves at specific points along the line, and draw conclusions about how the energy is distributed based on these calculations.

Do I have this right? If so, how the heck can you draw conclusions about this blurry quantity of average power, which has to represent the power in an integral number of V or I cycles, at specific points along the line? And conclude that the value of the sum of a couple of these "waves" is entirely different a short distance away?

What do you do when the line is, say, the square root of two wavelengths long, so that an integral number of cycles doesn't exist anywhere along the line, even after any number of reflections?

Roy Lewallen, W7EL

298. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:24:17 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F04BB21.A3C9EDB8@uci.edu>
Source record: 113543

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>We have two watts of coherent, single-frequency light sourced from a
> >>laser. We set up an inference exercise by dividing that single two-
> >>watt beam into two one-watt beams. We do whatever is necessary to
> >>get those two beams to be 180 degrees out of phase. Then we re-combine
> >>them along an identical vector path. Just before the re-combining,
> >>the two waves each possessed energy and momentum. After the re-combining,
> >>the two waves disappear through 100% wave cancellation. What happens to
> >>the energy and momentum that pre-existed in those two EM waves?
> > >
> > > Sounds familiar. But you left out quite a bit of detail. Among other
> > > things, you need to tell us what you think happens in such an
> > > experiment.
>
> I think energy is conserved.

You're still missing a couple of details. Like your description of the
splitter for example. Are you dividing wave fronts, or amplitudes? And
you haven't described this 're-combiner' at all.

> What do you think?

I think you're clue-free and hoping someone will explain it to you.
Prove me wrong. :-)

73, Jim AC6XG

299. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:26:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04bdb0$1_6@corp.newsgroups.com>
Source record: 113542

Jim Kelley wrote:
> Nor do the conditions you assumed in your paper, like lossless
> transmission lines.

Actually, I don't assume lossless transmission lines. I only
assume a lossless impedance discontinuity point.

>>When a wave is destroyed, it MUST, of necessity,
>>give up its energy.
>
> You're thinking of anihilation.

Nope, I was not thinking of annihilation. You're absolutely
wrong, once again. Your ESP powers (and spelling) leave a
lot to be desired.
--
73, Cecil http://www.qsl.net/w5dxp

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300. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:35:46 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F04BDD2.7969F9A4@uci.edu>
Source record: 113544

W5DXP wrote:

> Standing waves are the railroad tracks that
> the source power uses to transfer 100% of its energy to the load.

Do I detect a slur in speech? If I had to pick, I'd say traveling waves are what "the source power uses to transfer 100% of its energy to the load."

73, Jim AC6XG

301. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:38:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04c07f$1_6@corp.newsgroups.com>
Source record: 113545

Roy Lewallen wrote:
> Do I have this right? If so, how the heck can you draw conclusions about
> this blurry quantity of average power, ...

Have you read HP AN 95-1, page 16 and 17? All of those powers are
average powers. In 45 years as an engineer, I have never heard
of anyone using anything except average power, usually joules/sec,
which is virtually always indeed multiple cycles based on the
RMS value of voltage and current.

You are the only person whom I have ever known that seems to be
attracted to instantaneous power, whatever that is.
--
73, Cecil http://www.qsl.net/w5dxp

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302. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:45:04 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <T43Na.5130$_83.3782@fe01.atl2.webusenet.com>
Source record: 113546

Or try: www.hfantennas.com tho he calls his 160-10 meter ant, a G5RV, meets more , the description of windom (209 foot long, feed point at 60 foot (other end for it is 149 ft) 40 % offset! and lists these on the bay of "E" ! No recomendation, obviously, but kinda looks interesting. Jim NN7K

"Helmut Wabnig" <hXwabnig@aXon.at> wrote in message news:2vj7gvovsts2tijslcj4mav623bi392ijv@4ax.com...
> On Wed, 2 Jul 2003 22:48:56 -0500, "Sarge" <sarge43@ev1.net> wrote:
>
> >I'd like to build a carolina windom type antenna for 10-80 metres.
> >Can anyone point me to some good instructions and possible parts sources?
> >
> >Thank you,
> >Sarge
> >
> You can buy a Windom from Kelemen
> http://www.tretter-funkelektronik.de/Antennen/antennen.html
> w.

303. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:45:43 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04c239$1_6@corp.newsgroups.com>
Source record: 113548

Jim Kelley wrote:
> You're still missing a couple of details. Like your description of the
> splitter for example. Are you dividing wave fronts, or amplitudes? And
> you haven't described this 're-combiner' at all.

It's a mental exercise, Jim, not a bench experiment. I am pretty
ignorant of the physical equipment involved in such an experiment.
I know how to get the two re-combined waves almost in the same vector
path in which case they are not destroyed.

> I think you're clue-free and hoping someone will explain it to you.
> Prove me wrong. :-)

Yes, I'm hoping someone will explain how the energy components in two
waves that engage in total wave destruction are conserved. Your assertion
that there is no energy to conserve is ridiculous in the extreme and
violates the laws of physics.
--
73, Cecil http://www.qsl.net/w5dxp

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304. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:47:31 UTC
From: jgboyles@aol.com
Message-ID: <20030703194731.11722.00000066@mb-m10.aol.com>
Source record: 113547

>Just before the re-combining,
>the two waves each possessed energy and momentum. After the re-combining,
>the two waves disappear through 100% wave cancellation. What happens to
>the energy and momentum that pre-existed in those two EM
>waves
It was eat up in heat (or radiation) in the re-combining process. You can not have a lossless recombination, if you do it violates C of E.

73 Gary N4AST

305. phasing coils

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:56:10 UTC
From: mike <nunya@nowhere.com>
Message-ID: <c1ac07f922537b76bdd0efbf47136f6b@TeraNews>
Source record: 113549

After much searching (Google and books) I have yet to find an answer.

Does anybody have the formulas for making a phasing coil for collinear antennas?

I would like to use coils instead of stubs, easier to make enclosures and mounting points.

TIA

N9XYP

306. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-03 23:56:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04c4d4$1_6@corp.newsgroups.com>
Source record: 113550

Jim Kelley wrote:

> W5DXP wrote:
>>Standing waves are the railroad tracks that
>>the source power uses to transfer 100% of its energy to the load.
>
> Do I detect a slur in speech? If I had to pick, I'd say traveling waves
> are what "the source power uses to transfer 100% of its energy to the
> load."

100% of the source energy is NOT transferred to a mismatched load as
TV ghosting proves. (1-RHO^2) times the forward power is transferred
to a mismatched load. But the forward power includes an infinite
number of reflections (ghosts). There is no way to isolate the most
recently generated energy from the infinite number of reflections.
--
73, Cecil http://www.qsl.net/w5dxp

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307. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 00:07:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04c75e$1_6@corp.newsgroups.com>
Source record: 113551

JGBOYLES wrote:

>>Just before the re-combining,
>>the two waves each possessed energy and momentum. After the re-combining,
>>the two waves disappear through 100% wave cancellation. What happens to
>>the energy and momentum that pre-existed in those two EM
>>waves
>
> It was eat up in heat (or radiation) in the re-combining process. You can not
> have a lossless recombination, if you do it violates C of E.

No other possibility? Why can't the energy involved in the re-combining
process simply wind up flowing in the opposite direction to the wave
cancellation? Mirrors conserve energy. Why can't wave cancellation
conserve energy the way it is described on the Melles-Griot web page?

http://www.mellesgriot.com/products/optics/oc_2_1.htm

"In the absence of absorption or scatter, the principle of conservation
of energy indicates all 'lost' reflected intensity (from the wave cancellation
process) will appear as enhanced intensity in the transmitted beam." i.e. the
'lost' reflected energy changes direction and joins the forward wave.
--
73, Cecil http://www.qsl.net/w5dxp

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308. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 00:13:57 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <9F3Na.5885$NW6.3715@rwcrnsc51.ops.asp.att.net>
Source record: 113552

Cheaper than a couple insulators and a spool of wire? How do they make any
money?
"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
news:2i78gvo364e6mq15a4440lcjfrr3tm0gkn@4ax.com...
> But to make an exact replica of the "Carolina Windom" that Radioworks
> sells, it'd be cheaper to just buy theirs. See their web site.
>
> Bob
> k5qwg
>
>

309. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 00:19:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vg9i109nbelef7@corp.supernews.com>
Source record: 113553

And you are the only person I've ever known who seems interested in tracking the power at every point along a line. Certainly the only one who does this by first averaging the power over a cycle, then concluding that it will add to or subtract from similar average values in distances much shorter than a wavelength.

You still don't understand what instantaneous power is? Consult any elementary circuit analysis textbook. I'll be glad to recommend a couple. Armed with that new knowledge, you'll be able to calculate exactly what the power is, and where the energy is going, at any point along a transmission line at any instant of time. Without it, you can't.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> Do I have this right? If so, how the heck can you draw conclusions
>> about this blurry quantity of average power, ...
>
>
> Have you read HP AN 95-1, page 16 and 17? All of those powers are
> *average* powers. In 45 years as an engineer, I have never heard
> of anyone using anything except average power, usually joules/sec,
> which is virtually always indeed multiple cycles based on the
> RMS value of voltage and current.
>
> You are the only person whom I have ever known that seems to be
> attracted to instantaneous power, whatever that is.

310. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 00:43:09 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <be2ij0$l61e$1@ID-134747.news.dfncis.de>
Source record: 113554

Don't use it much on 75. But the efficiency
cannot be all that bad, and the heat should not be
a problem. I am starting with 5 watts out of a
Yaseau FT-817 and am able to reliably check into
traffic nets I am interested in. On field day I
was answered after one or two calls, as long as
the frequency owner was two or more S units above
the background. I am heard, can pass traffic, and
if the tuner is rated for 300 watts I don't think
5, no matter what the mismatch, I am not going to
heat anything up enough to hurt it. Most people
"cook" tuners by attempting to match at full
power, rather than minimum power. Once a match is
achieved things generally work well, until you
approach maximum power tuner is rated for.

--
73 es cul

wb3fup
a Salty Bear

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f048386$1_2@corp.newsgroups.com...
> WB3FUP (Mike Hall) wrote:
> > Feed the dipole with a balanced line feeder
and
> > tune anywhere you want to. I cant get my 68'
> > dipole onto 160, but it works everything from
80
> > to 10 w/o complaint.
>
> Ever measure the loss in your tuner on 80m? I
melted
> my coil form one time doing what you are doing.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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311. Re: Antenna Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 00:43:52 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <be2ikc$kp9r$1@ID-134747.news.dfncis.de>
Source record: 113555

Had not thought of that, thanks

--
73 es cul

wb3fup
a Salty Bear

"Dennis Kaylor" <k4oxg@tampabay.rr.com> wrote in
message news:3F048FE1.9040507@tampabay.rr.com...
> even easier
> go to radio shack and buy one of the mirror
mounts and just bolt it to
> the tripod that way you dont damage the tripod
>

312. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 00:46:23 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <be2iov$uk6$0@208.207.71.145>
Source record: 113556

IMO the telephone companies generally seem to be poorly managed with
even poorer forward planning. Most can't even see trends which are whacking
them in the face. ALL could have had most of the ISP business early on in
the internet era instead of sitting by while AOL, Compuserve, etc etc and
hundreds of local startups took most of it. And service would have been
available to everyone everywhere at competitive pricing.

Dick

"J. McLaughlin" wrote:

> Of interest is that some of that investment was done right. My local,
> independent telephone company put much of their profits (over a number
> of years) into the ground with cable and glass. The results are that it
> now pays only about three pole charges (cost per year to the power
> company) and has very good bandwidth right where people live. Pole
> charges went up in cost several times once cable TV arrived. I have two
> telephone lines (had three when sons were at home) and DSL on one of the
> several wide bandwidth lines that are burred right up to the house.
> Takes attention to details and forward planning. The family who own
> the telephone company are not rich, but they live and work here.
> 73 Mac N8TT
>
> --
> J. Mc Laughlin - Michigan USA
> Home: JCM@Power-Net.Net
> Office: JCM@McLMcL.Com
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:eh59gv0873sv69mj7irvqots4u5ft9elmh@4ax.com...
> > On Thu, 3 Jul 2003 15:29:27 -0500, "H. Adam Stevens"
> > <solo@totalaccess.net> wrote:
> > >where is the fiber optic infrastructure?
> > >what happened?
> >
> > Hi OM,
> >
> > We currently have somewhere on the order of 95% to 98% excess fiber
> > optic capacity! It is where all that money planted it, along the
> > roads of America, just short of the homes it would serve had the
> > technology market not collapsed 3 years ago.
> >
> > The reason (or partial reason) for that collapse is called "the last
> > mile." In terms of simple economics, that excess capacity was the
> > simplest infrastructure addition. The problem of "the last mile" is

> > that to connect every home (or at least enough to make marketing this
> > bandwidth profitable) will cost vastly more than the original
> > investment. The best short term prospects are found in the analog of
> > a Central Office offering Wi-Fi connections to nearby RF networked
> > communities.
> >
> > Barring the planting of more fiber optic to your doorstep, there is
> > vastly more chance of new roof mounted antennas in our future.
> >
> > 73's
> > Richard Clark, KB7QHC

313. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 00:52:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <be2j4v$gv5$1@sparta.btinternet.com>
Source record: 113557

Reg just said -
> If a unidirectional beam is desired then a Rhombic could be considered to
be
> very wasteful of Tx power - 1/2 of it disappears in the termination.
There
> are more efficient ways of achieving the same horizontally-polarised
> objective (but perhaps less compact).

==========

What ! Nobody feels like arguing ?

Terminated Rhombics must be going out of fashion faster than G5RV's.

Terminated Beveridges went before WW2.

Have I spelt it right ?

314. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 01:10:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6pk9gv43ceit3us8d10gl9s0ranjg356j2@4ax.com>
Source record: 113558

On Thu, 3 Jul 2003 18:04:36 -0400, "Peter Brackett"
<ab4bc@ix.netcom.com> wrote:
> How hot does the resistor r get in degrees K? How much e^2 = kTRB Johnson
>noise is generated by the r?

Hi Peter,

Cecil once claimed he could measure Z with a thermometer. I then
asked him the same question above and, like you, got the same vacant
answer.

He dismisses the proof of any single claim as not being relevant to
the issue, and then gusts on how the issue is proven by the claim. I
don't think we will ever see a number put side-by-side with his heat.

73's
Richard Clark, KB7QHC

315. Best Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 02:33:37 UTC
From: paularmes@cox.net
Message-ID: <5I5Na.582902$vU3.548174@news1.central.cox.net>
Source record: 113559

Hi,
I just got my general license.
I am limited on space but will be able to mount an antenna about 6 feet above my roofline. Radials are not a possibility because of structural and aesthetic issues.
I have a Icom 746Pro.
I would like a multiband compact beam or quad or vertical.
I will not be using an amplifier apart from the transceiver.
What would you recommend?
Thanks,
Paul Armes

316. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 02:47:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f04ecc0_1@corp.newsgroups.com>
Source record: 113560

Roy Lewallen wrote:
> And you are the only person I've ever known who seems interested in
> tracking the power at every point along a line.

You are still confused. I am NOT interested in tracking the power
at every point along a line. I am *only* interested in tracking
the energy components at an impedance discontinuity. I am not
satisfied with Jon Bloom's explanation. I am not satisfied with
Walter Maxwell's explanation. I am not satisfied with Steven Best's
explanation. I am not satisfied with Jim Kelley's explanation. I am
simply searching for an explanation with which I am satisfied. I
apologize if my quest for knowledge hairlips you or anyone else.

> You still don't understand what instantaneous power is? Consult any
> elementary circuit analysis textbook.

I know what it is, Roy. I just don't think it is useful. Neither
does Hecht.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

317. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 03:31:36 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7rs9gvggnhrl56mkl4os08dkmh8035rdsq@4ax.com>
Source record: 113561

On Thu, 03 Jul 2003 09:24:09 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>What is it about, "This is *NOT* a new and different method of system
>analysis" that you don't understand?

On Thu, 03 Jul 2003 21:47:09 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>I am not
>satisfied with Jon Bloom's explanation. I am not satisfied with
>Walter Maxwell's explanation. I am not satisfied with Steven Best's
>explanation. I am not satisfied with Jim Kelley's explanation. I am
>simply searching for an explanation with which I am satisfied. I
>apologize if my quest for knowledge hairlips you or anyone else.

From Scientific American's Baloney Detection:
>>1. How reliable is the source of the claim?
>> Pseudoscientists often appear quite reliable, but when examined
>>closely, the facts and figures they cite are distorted, taken out of
>>context or occasionally even fabricated.
>>
>>2. Does this source often make similar claims?
>>Pseudoscientists have a habit of going well beyond the facts. Watch
>>out for a pattern of fringe thinking that consistently ignores or
>>distorts data.
>>
>>3. Have the claims been verified by another source?
>>Typically pseudoscientists make statements that are unverified or
>>verified only by a source within their own belief circle.
>>
>>4. How does the claim fit with what we know about how the world works?
>>An extraordinary claim must be placed into a larger context to see how
>>it fits.
>>
>>5. Has anyone gone out of the way to disprove the claim, or has only
>>supportive evidence been sought?
>>This is the confirmation bias, or the tendency to seek confirmatory
>>evidence and to reject or ignore disconfirmatory evidence.
>>
>>6. Does the preponderance of evidence point to the claimant's
>>conclusion or to a different one?
>>
>>7. Is the claimant employing the accepted rules of reason and tools of
>>research, or have these been abandoned in favor of others that lead to
>>the desired conclusion?
>>

>>8. Is the claimant providing an explanation for the observed phenomena
>>or merely denying the existing explanation?
>>This is a classic debate strategy--criticize your opponent and never
>>affirm what you believe to avoid criticism. This stratagem is
>>unacceptable in science.
>>
>>9. If the claimant proffers a new explanation, does it account for as
>>many phenomena as the old explanation did?
>>
>>10. Do the claimant's personal beliefs and biases drive the
>>conclusions, or vice versa?
>>

This, by the way, is not best 6 of 10.

73's
Richard Clark, KB7QHC

318. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 03:37:52 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <vgt9gv0svsbiq69u9u1dqgamf5kbvsd95a@4ax.com>
Source record: 113562

On Fri, 04 Jul 2003 00:13:57 GMT, "CW" <clinton.magers@comcast.net>
wrote:

>Cheaper than a couple insulators and a spool of wire? How do they make any
>money?

Well, they add a balun, an isolator, and a buncha swift-sounding ad
copy... :-)

Bob
k51qwg

>"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
>news:2i78gvo364e6mq15a4440lcjfrr3tm0gkn@4ax.com...
>> But to make an exact replica of the "Carolina Windom" that Radioworks
>> sells, it'd be cheaper to just buy theirs. See their web site.
>>
>> Bob
>> k5qwg
>>
>>
>

319. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 04:17:45 UTC
From: Graham <user@host.domain>
Message-ID: <nhv9gvkdnnoeacke7m002j0b43sfq0lu53@4ax.com>
Source record: 113563

Which makes me wonder, since he's attempting to encourage the vertical
feedline section to radiate, if he's shipping it with a voltage balun
or a current balun. He manufactures both types.

-G-

On Thu, 03 Jul 2003 22:37:52 -0500, Bob Miller
<bxmiller@texas.netNOSPAM> wrote:

>On Fri, 04 Jul 2003 00:13:57 GMT, "CW" <clinton.magers@comcast.net>
>wrote:
>
>Well, they add a balun,

320. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 05:10:09 UTC
From: Sarge <sarge43@ev1.net>
Message-ID: <vga31u5uqum835@corp.supernews.com>
Source record: 113564

Thanks for all the help y'all... much appreciated...

"Sarge" <sarge43@ev1.net> wrote in message
news:vg79uinqv3s946@corp.supernews.com...
> I'd like to build a carolina windom type antenna for 10-80 metres.
> Can anyone point me to some good instructions and possible parts sources?
>
> Thank you,
> Sarge
>
>

321. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 05:20:10 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <e88Na.32481$Xm3.7162@sccrnsc02>
Source record: 113565

OK, $20.00.
"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
news:vgt9gv0svsbiq69u9u1dqgamf5kbvsd95a@4ax.com...
> On Fri, 04 Jul 2003 00:13:57 GMT, "CW" <clinton.magers@comcast.net>
> wrote:
>
> >Cheaper than a couple insulators and a spool of wire? How do they make
any
> >money?
>
> Well, they add a balun, an isolator, and a buncha swift-sounding ad
> copy... :-)
>
> Bob
> k51qwg
>
>
> >"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
> >news:2i78gvo364e6mq15a4440lcjfrr3tm0gkn@4ax.com...
> >> But to make an exact replica of the "Carolina Windom" that Radioworks
> >> sells, it'd be cheaper to just buy theirs. See their web site.
> >>
> >> Bob
> >> k5qwg
> >>
> >>
> > >
>

322. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 09:21:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <be3gu5c1@sparta.btinternet.com>
Source record: 113566

> >Cheaper than a couple insulators and a spool of wire? How do they make
any
> >money?
>
> Well, they add a balun, an isolator, and a buncha swift-sounding ad
> copy... :-)
>

Don't forget a pair of masts. The thing won't work lying on the ground!

323. Morgain Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 09:29:46 UTC
From: IT9VVM Vittorio <imageinaction@hotmail.com>
Message-ID: <eObNa.146185$lK4.4072941@twister1.libero.it>
Source record: 113567

Hi all,
i discovered something strange on my 20 m dipole.
Yesterday i took a peek on my roof and the strain was about to cut a dipole arm. The inner copper wire was gone...
Now i have to rebuild half dipole and i was thinking about using a Morgain antenna instead of the dipole as i have no 40 m antenna. I found the project on Radio Rivista but i am searching for suggestions on building. I usually use plexiglass for the insulators but i think i need something lighter. Can anyone suggest how to biuld the center insulator and how to place the coax socket?

Thanks in advance

73 de IT9VVM Vittorio

324. Re: ? about AT-11MP tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 09:49:30 UTC
From: Alexander Schewelew <dl1pbd@gmx.net>
Message-ID: <be3iva$sop1$1@ID-34767.news.dfncis.de>
Source record: 113568

Hi!
<kenfowler@attbi.com> schrieb im Newsbeitrag
news:wKGcnTBbKZnFD5miXTWJkw@comcast.com...

> Don't know about a 6m antenna as I don't have one. But I just tried the
AT-11 with my 40/80 m
> dipoles and the best that it could do was 3:1 VSWR. So then I tried the
FT-920 internal tuner which
> could get the VSWR down to < 1.5. Even called a station in Arizona that I
heard and made contact:
> I'm in the SF Bay Area. Efficiency was probably < 10%, antenna pattern
less than optimum, but when
> the band is open, anything "works".
>
> KO6NO

I think, that your AT-11 is in order, but your Dipole.....
What for one have you?

73!
Alex

325. Re: Best Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:03:45 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <G-2dnW65bdHYFJiiU-KYgg@comcast.com>
Source record: 113469

About the smallest real antenna would be a 2 element beam like a HyGain TH2,
or a Mosley(sp?) TA32JR. Either one would work with a heavy duty TV rotator.
I think Mosley also sells a 3 band rotatable dipole.

Tam/WB2TT
<paularmes@cox.net> wrote in message
news:5I5Na.582902$vU3.548174@news1.central.cox.net...
> Hi,
> I just got my general license.
> I am limited on space but will be able to mount an antenna about 6 feet
> above my roofline. Radials are not a possibility because of structural and
> aesthetic issues.
> I have a Icom 746Pro.
> I would like a multiband compact beam or quad or vertical.
> I will not be using an amplifier apart from the transceiver.
> What would you recommend?
> Thanks,
> Paul Armes

326. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:04:47 UTC
From: richardharrison@webtv.net
Message-ID: <22938-3F05897F-27@storefull-2313.public.lawson.webtv.net>
Source record: 113472

Richard Clark wrote:
"This, by the way, is not the best 6 of 10.

On a transmission line, signal is confined to the wires.

Signal can only go forward and bakward on the line.

Zo is the only voltage to current ratio propagated in either direction on the line.

If a wave on the line encounters a Z other than Zo, the wave can only deliver the volts and amps it carries.

If the mismatched Z demands more current than accompanies the volts the line carries at Zo, signal traveling down the line is not completely absorbed by the mismatched Z.

Some signal is rejected by the mismatched Z and reflected back the way it came. In the case of the current-hungry low load Z, there is excess voltage in Zo for the current Zo is able to supply. Excess volts in Zo are rejected by the load.

Counter-emf in the final inductance of Zo launches a reversed-phase (reversed direction) voltage wave.

Phase of the current in the example above is unfazed.

By analogy, phase of the current reverses in a reflection when the load impedance is greater than Zo.

Multiple phases of the same signal, either voltage or current, traveling in either direction on a transmission line are not allowed.

The phases of the same signal traveling in the same direction are simply merged. They are vectors which make a resultant.

A transmission line has forward voltage and current in-phase. If a reflection occurs, the transmission line has a reflected wave in which the voltage and current are 180-degrees out-of-phase.

The magnitude of the reflected wave is proportional to the magnitude of the mismatch.

What else do I need to know?

Best regards, Richard Harrison, KB5WZI

327. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:06:42 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be41ljueg1@slb9.atl.mindspring.net>
Source record: 113470

Cecil:

[snip]
> Since you can't seem to grasp the technically similar replies
> offered by multiple posters, perhaps you can wrap your mind
> around the type of commentary contained in this reply.
>
> We now return to Cecil's "I'm-just-a-humble-student-seeking-
> knowledge" bull-shit routine...
>
> And I'm back to lurk mode...
[snip]

Looks like you "caught" one!

--
Peter K1PO
Indialantic By-the-Sea, FL.

328. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:08:49 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be41pisug1@slb2.atl.mindspring.net>
Source record: 113471

Cecil:

[snip]
> It certainly does resolve any problems. All waves contain energy. All
> waves transfer that energy when they are dissipated or radiated or when
> they are destroyed by wave cancellation.
[snip]

No they don't, and...

What *exactly* is your definition of a "wave"?

--
Peter K1PO
Indialantic By-the-Sea, FL.

329. Re: ? about AT-11MP tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:09:52 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <3F058ABF.2030303@cac.net>
Source record: 113397

mine does... but only on certain antennas, and not on an antenna that
is close to resonance to begin with.

-SSB

VHFRadioBuff wrote:
> Does anyone know if the AT-11MP antenna tuner will tune a 6m antenna? I know
> the specs say no, but I thought I remembered reading somewhere that it would
> work with 6m.
> =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
> 73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
> Beachwood, NJ USA! Grid FM29vw
> http://vhfradiobuff.tripod.com
> Fight Spam! http://spamcop.net
> National "Do Not Call" Registry: http://donotcall.gov

330. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:39:33 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgb4epsko1th78@corp.supernews.com>
Source record: 113474

deletia
>
> What else do I need to know?
>
> Best regards, Richard Harrison, KB5WZI
>
Do not try to teach a pig to sing;
It is a waste of time and annoys the pig.
H.
NQ5H

331. HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:39:51 UTC
From: "G.Balinski" <Nospam@nospam.com>
Message-ID: <XkgNa.35888$fG.18866@sccrnsc01>
Source record: 113473

Has anyone put together a recent test of mobile HF antennas? I think
that I remembered something in past years called a "shoot out" or something
like that. As far as I remember though, it was as much of a test of the
installation of the antennas as the antennas themselves as different
vehicles and install methods were used. It would be nice to see on
objective comparison of the various units like the Hustler series, Ham
Stick, all the variants of the screw driver antennas, the Texas Bugcatcher,
etc. all mounted on the same platform with the same grounding system, etc.

Anyone seen such a test ?

Thanks,

Gene

332. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 14:45:30 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgb4pv7jhu0qfb@corp.supernews.com>
Source record: 113475

I have personally compared non-resonant-whip-and-tuner, ham-stick and
hustler.
Hustler won.
Big time.
Several S-units as I recall.
Screwdrivers play well I am sure.
Resonant; lowest loss; bigggest.
comprende'?
H.
NQ5H

"G.Balinski" <Nospam@nospam.com> wrote in message
news:XkgNa.35888$fG.18866@sccrnsc01...
> Has anyone put together a recent test of mobile HF antennas? I
think
> that I remembered something in past years called a "shoot out" or
something
> like that. As far as I remember though, it was as much of a test of the
> installation of the antennas as the antennas themselves as different
> vehicles and install methods were used. It would be nice to see on
> objective comparison of the various units like the Hustler series, Ham
> Stick, all the variants of the screw driver antennas, the Texas
Bugcatcher,
> etc. all mounted on the same platform with the same grounding system,
etc.
>
> Anyone seen such a test ?
>
> Thanks,
>
> Gene
>
>

333. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:04:32 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307040704.29889512@posting.google.com>
Source record: 113476

And if you do decide to try and operate, BPL is sensitive to ham
transmissions. When you shut down Internet access for blocks and the
power company blames you the "social" consequences will be huge.

File today, get everyone you know to file, NOW!!!

"Dick Carroll;" <dixie@townsqr.com> wrote in message news:<be2iov$uk6$0@208.207.71.145>...
> IMO the telephone companies generally seem to be poorly managed with
> even poorer forward planning. Most can't even see trends which are whacking
> them in the face. ALL could have had most of the ISP business early on in
> the internet era instead of sitting by while AOL, Compuserve, etc etc and
> hundreds of local startups took most of it. And service would have been
> available to everyone everywhere at competitive pricing.
>
> Dick
>
> "J. McLaughlin" wrote:
>
> > Of interest is that some of that investment was done right. My local,
> > independent telephone company put much of their profits (over a number
> > of years) into the ground with cable and glass. The results are that it
> > now pays only about three pole charges (cost per year to the power
> > company) and has very good bandwidth right where people live. Pole
> > charges went up in cost several times once cable TV arrived. I have two
> > telephone lines (had three when sons were at home) and DSL on one of the
> > several wide bandwidth lines that are burred right up to the house.
> > Takes attention to details and forward planning. The family who own
> > the telephone company are not rich, but they live and work here.
> > 73 Mac N8TT
> >
> > --
> > J. Mc Laughlin - Michigan USA
> > Home: JCM@Power-Net.Net
> > Office: JCM@McLMcL.Com
> > "Richard Clark" <kb7qhc@comcast.net> wrote in message
> > news:eh59gv0873sv69mj7irvqots4u5ft9elmh@4ax.com...
> > > On Thu, 3 Jul 2003 15:29:27 -0500, "H. Adam Stevens"
> > > <solo@totalaccess.net> wrote:
> > > >where is the fiber optic infrastructure?
> > > >what happened?
> > >
> > > Hi OM,
> > >

> > > We currently have somewhere on the order of 95% to 98% excess fiber
> > > optic capacity! It is where all that money planted it, along the
> > > roads of America, just short of the homes it would serve had the
> > > technology market not collapsed 3 years ago.
> > >
> > > The reason (or partial reason) for that collapse is called "the last
> > > mile." In terms of simple economics, that excess capacity was the
> > > simplest infrastructure addition. The problem of "the last mile" is
> > > that to connect every home (or at least enough to make marketing this
> > > bandwidth profitable) will cost vastly more than the original
> > > investment. The best short term prospects are found in the analog of
> > > a Central Office offering Wi-Fi connections to nearby RF networked
> > > communities.
> > >
> > > Barring the planting of more fiber optic to your doorstep, there is
> > > vastly more chance of new roof mounted antennas in our future.
> > >
> > > 73's
> > > Richard Clark, KB7QHC

334. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:05:07 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F0597A3.6040102@ieee.org>
Source record: 113477

Richard Clark wrote:
> This, by the way, is not best 6 of 10.

I'm sorry that my scientific curiosity upsets you, Richard.
--
73, Cecil, W5DXP

335. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:27:27 UTC
From: Guessing <Guessing@connectnet.net>
Message-ID: <y1hNa.87778$Pc5.50076@fed1read01>
Source record: 113478

For one -- see URL

http://www.3905ccn.com/soresult.pdf

Using Google.com will find some others
http://www.google.com/

"G.Balinski" <Nospam@nospam.com> wrote in message
news:XkgNa.35888$fG.18866@sccrnsc01...
> Has anyone put together a recent test of mobile HF antennas? I
think
> that I remembered something in past years called a "shoot out" or
something
> like that. As far as I remember though, it was as much of a test of the
> installation of the antennas as the antennas themselves as different
> vehicles and install methods were used. It would be nice to see on
> objective comparison of the various units like the Hustler series, Ham
> Stick, all the variants of the screw driver antennas, the Texas
Bugcatcher,
> etc. all mounted on the same platform with the same grounding system,
etc.
>
> Anyone seen such a test ?
>
> Thanks,
>
> Gene
>
>

336. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:34:03 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8i7bgvsnntclmuquqnrr98afm3t2cc50iq@4ax.com>
Source record: 113479

On Fri, 04 Jul 2003 08:05:07 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> This, by the way, is not best 6 of 10.
>
>I'm sorry that my scientific curiosity upsets you, Richard.

You didn't add a happy face.

337. Re: Best Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:48:12 UTC
From: Thierry <lombrytNOSPAM@hotmail.com>
Message-ID: <3f05a1b6$1_1@news.vo.lu>
Source record: 113480

Hi,
6 ft (2m) high above roof OK, but what total length ?
if limited to 2m high that can be suited for V/UHF, not for SSB/CW,
excepting using a mobile antenna with H-Q coil. Or excepting if you like
ragchewing in local QSO on upper HF bands and do not want work DX and
pile-ups (in SSB at leats as a good CWer can work any DX with a windom or a
short vertical.. In fact all depend of your skills in the field).

At last, do not forget that an antenna has to respect to laws of physics
whatever say advertising and marketing depts about short whips able to work
the world...

For short only verticals are short enough (low profile) to be erected
anywhere you like, sometimes with a few traps.
Most HF beams, even shortened, exceed 2-3m wide (for the boom) and display a
wingspan over 5m.
There is also magnetic loops (dia about 1m) that are very interesting, but
expensive.
In V/UHF there is no problem, or not of this kind.

So for your multibands RTX (HF, V/UHF) if there is no problem of selecting a
V/UHF antenna, in HF, due to your restricted place, the best solution should
still be the multiband dipole erected vertically (inverted V or L along the
wall or near). Many DXers work with G5RV, Windom and other W3DZZ
successfully, some with high powers.
But see the others posts dealing with wires antenna for more information.

Read this, that could also help ;-)
http://www.astrosurf.com/lombry/qsl-portable.htm

73
Thierry
LX3SKY

<paularmes@cox.net> wrote in message
news:5I5Na.582902$vU3.548174@news1.central.cox.net...
> Hi,
> I just got my general license.
> I am limited on space but will be able to mount an antenna about 6 feet
> above my roofline. Radials are not a possibility because of structural and
> aesthetic issues.
> I have a Icom 746Pro.
> I would like a multiband compact beam or quad or vertical.
> I will not be using an amplifier apart from the transceiver.
> What would you recommend?
> Thanks,

> Paul Aɪmes

338. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:56:14 UTC
From: Thierry <lombrytNOSPAM@hotmail.com>
Message-ID: <3f05a398$1_1@news.vo.lu>
Source record: 113481

Hi,

I know very well Varney's antenna (see my website,
http://www.astrosurf.com/lombry/qsl-g5rv.htm)
But I will first use it for reception, to avoid most of QRM vs a vertical
polarisation.
Up to now I have not find any antenna "better" protected against RFI than
wire antennas due to their polarization mode (I do not speak about your
neighboor's RFI at S9 but the more "transcient RFI" we usually heard using
e.g. a 6m vertical. Compared to this last the noise is reduced over 2
S-points with the wire antenna).

Later (but very soon) I will buy a TA-33-JR-N WARC beam.
So the G5RV will be mainly used as "spare" in case of problem (including
QRM) with the larger one.
But I need a good model because it can also become my usual antenna for
portable operations in place of my vertical.

So my question concern really first the quality of various models available.
I do not want a model that will break two years after installation due to
various factors (quality, stress, weather, heather, etc)

Thanks in advance for comments

73
Thierry
LX3SKY

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f046e79_2@corp.newsgroups.com...
> Thierry wrote:
> > I am looking for a multiband G5RV able to work between 80-10m and
supporting
> > 1 kW (so about 31m long).
>
> If you are looking for a G5RV that will cover all the ham bands between
> 80m and 10m, you will be extremely disappointed. The G5RV was designed
> before the WARC bands were available. Here's the theory behind a G5RV:
>
> The G5RV works on 20m, the band for which it was designed, because it
> is 1.5WL long and fed with 1/2WL of balanced line.
>
> On 40m, the G5RV is 0.75WL long fed with 1/4WL of balanced line. The 1/4WL
> feedline *IS* a 1/4WL transformer for the high impedance of the 0.75WL
dipole.
>

> On 80m, the G5RV is 0.375WL long fed with 1/8WL of balanced line. Take a
> look at my web page to see that this is a pretty good match.
>
> On 15m, the G5RV is 2.25WL long fed with 3/4WL of balanced line. Not a
good
> match.
>
> On 10m, the G5RV is 3WL long fed with 1WL of balanced line. That's bad
news.
>
> Those were all the HF bands that existed when the G5RV was invented. It is
> a complete accident that the G5RV works well on 12m. It is a complete
disaster
> on 30m.
>
> So you can expect your G5RV to work well on 80m, 40m, 20m, and 12m. That's
> not bad but it's a far cry from an all-band antenna. OTOH, on my web page,
> I describe how to turn a 130 ft dipole into a true all-HF-band antenna by
> simply varying the length of the feedline.
>
> Incidentally, by varying the length of the G5RV matching section, one can
> obtain a relatively good match on all HF bands.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

339. Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:56:33 UTC
From: Michalkun <buranko2000@yahoo.com>
Message-ID: <Xns93AE64FC092E9michalkunyahoocom@128.233.192.251>
Source record: 113482

Does anyone know how to find out wire's impendance so that I can match it to appropriate balun? I want to make an randomwire antenna but I'm not sure what balun to use, since no idea about the wire's impendance. I want to use copper wire.

340. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 15:59:15 UTC
From: Thierry <lombrytNOSPAM@hotmail.com>
Message-ID: <3f05a44c$1_1@news.vo.lu>
Source record: 113483

Hi,

Excellent advice Richard ;-)
But I hope that my local dealers can get "the best" models and up to now I don't really known what are the best models in terms of quality, resistance to stress, weather, etc.
The model I suggested on my website are based on advertisings, not measurement in the field...

Thierry

"Richard Clark" <kb7qhc@comcast.net> wrote in message news:9er8gvscvh3sds7gdr6coe3huj6bhk68iv@4ax.com...
> On Thu, 3 Jul 2003 17:20:05 +0200, "Thierry"
> <lombrytNOSPAM@hotmail.com> wrote:
>
> >Hi,
> >
> >There are several manufacturers or multiband dipoles (i.e.G5RV) between
> >Universal radio, USA2Way, WIMO, etc, including some variant like W3DZZ, etc.
> >Prices are also flexible from $30 - $140 !
> >I prefer to buy one in place of building it.
> >
> >I am looking for a multiband G5RV able to work between 80-10m and supporting
> >1 kW (so about 31m long).
> >According your experience what should be the best brand considering VSWR,
> >quality of material, longevity and resistance to UV, etc, easy to setup,
> >quality insolators, robustness of the wire and its accessories ?
> >
> >Thanks in advance
> >
> >Thierry
> >http://www.astrosurf.com/lombry
> >LX3SKY
> >
>
> Hi Thierry,
>
> Buy locally because the only thing of value you will obtain is the
> right to gripe about it failing. Why pay more for excessive postage
> stateside, exchanges, repeated attempts to contact the vendor? If it
> doesn't fail, then you got your money's worth. If it does, you can
> meet them with the charred remains and humble them.

>
> 73's
> Richard Clark, KB7QHC

341. Re: Outdoor TV antenna installation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 16:03:34 UTC
From: Michalkun <buranko2000@yahoo.com>
Message-ID: <Xns93AE662CFAF72michalkunyahoocom@128.233.192.251>
Source record: 113484

d_dave@my-deja.com (dave) wrote in
news:1cb17f33.0307031237.725a340e@posting.google.com:

> I just bought an antenna that has a connection for a twin-lead wire
> but I want to connect this directly to a television w/ only one coax
> input. What would be the proper wiring procedures and what type of
> converters and splitters will i need. Are there antennas out there w/
> only a coax connections for both uhf/vhf?

I think you need a balun. Those things are easily accessible at any
audio/video sections. I can even find them in Walmart.

342. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 16:12:55 UTC
From: richardharrison@webtv.net
Message-ID: <22938-3F05A787-37@storefull-2313.public.lawson.webtv.net>
Source record: 113487

Cecil, W5DXP wrote:
"---how the energy components in two waves that engage in total wave destruction are conserved."

Energy annihilation does not occur when waves coincide. The effect in a particular path may be the same as if there were cancellation. There are nulls produced in azimuths, at intersections, and wherever equal and oppositely phased signals coexist. The waves may be undetectable at these points if we are unable to separate them.

A standing wave is an example of opposites cancelling. The energy in each direction is unaffected by nulls the traveling waves make. The volts and amps are not being brought down in the same places.

When a wave is turned around by a reflection, the phase reversal of volts or amps, but not both at the same time, avoids annihilation.

Cecil suggested a contrived combination of oppositely phaseed waves of equal magnitude. I responded he might just short the outside turns connections of a center-tapped transformer to test his idea. Cecil did not respond.

When a 1/2-wave phase shift is imposed on a signal and this signal with its phase reversal is connected with the original or reference signal by direct connection, the result is a dead short. Annihilation of energy does not occur by a short-circuit connection of the oppositely phased equal signal componnents. Annihilation of the signal occurs, but it usually results in conversion of the energy into heat.

Best regards, Richard Harrison, KB5WZI

343. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 16:42:29 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <XAudnRiaY6FSM5iiXTWJkg@ctc.net>
Source record: 113485

> Does anyone know how to find out wire's impendance so that I can match it
> to appropriate balun? I want to make an randomwire antenna but I'm not
> sure what balun to use, since no idea about the wire's impendance. I want
> to use copper wire.

There is no way to know from this information. YOu need to give the frequecny , the length of the wire, height above ground and probably a bunch more info. YOu do not use a balun on a random wire but feed it into an antenna tuner and match it with the tuner unless the transmitter is designed for random wire such as some of the old military gear.

The random wire is mostly a make do antenna and will usually be less efficient than many other antennas. If this antenna is to be installed in a fixed location you should look at a differant type antenna. Maybe a windom type.

344. Hamfest July 13th Phoenixville ,Pa

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 16:45:37 UTC
From: CommCtr1 <nospam@tome.com>
Message-ID: <RaiNa.35760$3o3.2612237@bgtnsc05-news.ops.worldnet.att.net>
Source record: 113486
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.scanner,rec.radio.swap

Mid-Atlantic Amateur Radio Club annual Hamfest next Sunday 7/13 at the
Kimberton Fairgrounds at the Kimberton Fire Co.
Hamfest opens at 08:00 and goes to whenever.
Sellers arrive at 07:00.
Hope to see you all there.

Talk in freq's as follows:

146.835 88.5 Montco. RACES repeater
443.800 131.8 U of P, repeater system.

345. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 16:53:39 UTC
From: Wes Stewart <*n7ws*@arrl.net>
Message-ID: <hp9bgvk77vonvb3r0mh7d9e4uh1l6c7tef@4ax.com>
Source record: 113488

On Fri, 4 Jul 2003 00:52:47 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

|Reg just said -
|> If a unidirectional beam is desired then a Rhombic could be considered to
|be
|> very wasteful of Tx power - 1/2 of it disappears in the termination.
|There
|> are more efficient ways of achieving the same horizontally-polarised
|> objective (but perhaps less compact).
|
|====================================
|
|What ! Nobody feels like arguing ?

Okay, I'll take the bait.

No, 1/2 of the power doesn't get dissipated in the termination. Some
of the power in the forward travelling wave never reaches the
termination(s).

For example I have modeled a 144 MHz LaPort Rhombic that at 3
wavelengths above ground has 23 dBi gain at 5 degress elevation and
the E-plane sidelobes down > 11dB and F/B of 30 dB. With side lengths
of 3.5 and 6 lambda, and two 500 ohm terminations, the total loss in
the terminations is 2 dB.

BTW, this is probably the lowest sidelobe level I have ever seen in a
rhombic.

|
|Terminated Rhombics must be going out of fashion faster than G5RV's.
|
|Terminated Beveridges went before WW2.
|
|Have I spelt it right ?

No.
|

346. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 17:57:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F05BFEF.3050603@ieee.org>
Source record: 113489

JDee wrote:
> Multiple posters have made
> multiple offerings to help you understand valid points of
> view.

Unfortunately, they have not convinced me that the earth is
really the center of the universe.
--
73, Cecil, W5DXP

347. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 18:07:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F05C26B.6090808@ieee.org>
Source record: 113490

Richard Harrison wrote:
> The phases of the same signal traveling in the same direction are simply
> merged. They are vectors which make a resultant.
>
> What else do I need to know?

Exactly what happens when two out of phase components of the same
signal traveling in the same direction are merged when, e.g:

Wave 1 = 50V at zero deg and 1A at 189 deg = 50W

Wave 2 = 50V at 180 deg and 1A at zero deg = 50W

The two waves cancel, i.e. are destroyed. What happens to the
intrinsic energy in those two waves? That's the present crux
of the matter. "Those waves didn't contain any energy to start
with", insults my intelligence.

When two phasor voltages cancel, it is a well known fact that
destructive interference energy is delivered to the constructive
interference event that must exist somewhere else. It's all
explained in _Optics_, by Hecht.
--
73, Cecil, W5DXP

348. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 18:11:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F05C35B.1070401@ieee.org>
Source record: 113491

Richard Clark wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>I'm sorry that my scientific curiosity upsets you, Richard.
>
> You didn't add a happy face.

I'm serious, Richard. This is the way I learn. Your religion
simply has not convinced me that the earth is really the center
of the universe.
--
73, Cecil, W5DXP

349. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 18:14:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F05C3FF.9030201@ieee.org>
Source record: 113492

Michalkun wrote:
> Does anyone know how to find out wire's impendance so that I can match it
> to appropriate balun? I want to make an randomwire antenna but I'm not
> sure what balun to use, since no idea about the wire's impendance. I want
> to use copper wire.

It is not the wire's impedance that matters unless there are no
standing waves. If standing waves exist, the impedance depends
upon the projected impedance of the antenna, not the Z0 of the
wire.
--
73, Cecil

350. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 18:23:50 UTC
From: richardharrison@webtv.net
Message-ID: <27549-3F05C636-11@storefull-2315.public.lawson.webtv.net>
Source record: 113494

Michalkun wrote:
"I want to use copper wire."

The reactance of a long wire is cylical and its radiation resistance depends on wire periphery as well as length. Height and surroundings also have an effect. But, an approximation is given by:

Radiation resistance = 73 + 69 log n

where n is the number of half wavelengths of the antennas.

This is from "Handbook of Electronics Calculations" by Kaufman and Seidman.

If you had one 1/2-wave of wire, any number raised to the zero power is one, so the log of (1) is zero, and the radiation resistance reduces to 73-ohms. The book actually has a graph of lengths in wavelengths versus radiation resistance and 73 ohms fits the graph at (1) half-wavelength. Offhand, that looks like the impedance of a center-fed 1/2-wavelength of wire, as well it should, because the radiation resistance is the resistance at the current maximum point for the antenna. That`s not the feedpoint for an end-fed antenna in many cases.

So, what`s the feedpoint resistance of a long wire? Often it`s quite high. The ARRL Antenna Book suggests:
"Each leg of this terminated V-beam use a 600-ohm non-inductive resistor to ground." The V-beaam has 2-lambda legs, so would have the same impedance at each wire end and the termination resistor is chosen to match the wire at its end. The wires in this section are 70 feet above ground.

Best regards, Richard Harrison, KB5WZI

351. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 18:23:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F05C63F.5040403@ieee.org>
Source record: 113493

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "---how the energy components in two waves that engage in total wave
> destruction are conserved."
>
> Energy annihilation does not occur when waves coincide.

I'm not talking about simple superposition. I'm talking about cancellation of waves where the waves cease to exist. And I agree that energy annihilation does not and cannot exist among EM waves.

> A standing wave is an example of opposites cancelling.

Only at certain points. The forward wave and reflected waves are unaffected by each other. There is only superposition, no cancellation except at certain points.

> I responded he might just short the outside turns
> connections of a center-tapped transformer to test his idea. Cecil did
> not respond.

Because I thought it was a joke, Richard. The current certainly does not go to zero so your example is irrelevant to what I was talking about.
--
73, Cecil, W5DXP

352. Re: A G5RV of excellent quality ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 19:01:17 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <kfjbgv0bg3f81nveplom64j7glovqf04hp@4ax.com>
Source record: 113495

On Fri, 4 Jul 2003 17:56:14 +0200, "Thierry"
<lombrytNOSPAM@hotmail.com> wrote:

>Hi,
>

>
>So my question concern really first the quality of various models available.
>I do not want a model that will break two years after installation due to
>various factors (quality, stress, weather, heather, etc)

There's not much to this antenna but wire and insulators. Not much
that is breakable, unlike, say, a beam or a trapped vertical. So I'd
just go with whatever you can find. MFJ makes a g5rv for 39 dollars
US.

Bob
k5qwg
>
>Thanks in advance for comments
>
>73
>Thierry
>LX3SKY
>
>"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
>news:3f046e79_2@corp.newsgroups.com...
>> Thierry wrote:
>> > I am looking for a multiband G5RV able to work between 80-10m and
>supporting
>> > 1 kW (so about 31m long).
>>
>> If you are looking for a G5RV that will cover all the ham bands between
>> 80m and 10m, you will be extremely disappointed. The G5RV was designed
>> before the WARC bands were available. Here's the theory behind a G5RV:
>>
>> The G5RV works on 20m, the band for which it was designed, because it
>> is 1.5WL long and fed with 1/2WL of balanced line.
>>
>> On 40m, the G5RV is 0.75WL long fed with 1/4WL of balanced line. The 1/4WL
>> feedline *IS* a 1/4WL transformer for the high impedance of the 0.75WL
>dipole.
>>
>> On 80m, the G5RV is 0.375WL long fed with 1/8WL of balanced line. Take a
>> look at my web page to see that this is a pretty good match.

>>
>> On 15m, the G5RV is 2.25WL long fed with 3/4WL of balanced line. Not a
>good
>> match.
>>
>> On 10m, the G5RV is 3WL long fed with 1WL of balanced line. That's bad
>news.
>>
>> Those were all the HF bands that existed when the G5RV was invented. It is
>> a complete accident that the G5RV works well on 12m. It is a complete
>disaster
>> on 30m.
>>
>> So you can expect your G5RV to work well on 80m, 40m, 20m, and 12m. That's
>> not bad but it's a far cry from an all-band antenna. OTOH, on my web page,
>> I describe how to turn a 130 ft dipole into a true all-HF-band antenna by
>> simply varying the length of the feedline.
>>
>> Incidentally, by varying the length of the G5RV matching section, one can
>> obtain a relatively good match on all HF bands.
>> --
>> 73, Cecil http://www.qsl.net/w5dxp
>>
>>
>>
>> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
>> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
>> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>

353. Re: windom

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 19:29:04 UTC
From: Sarge <sarge43@ev1.net>
Message-ID: <vgblca8mb1blff@corp.supernews.com>
Source record: 113496

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:be3gu5c1@sparta.btinternet.com...
>
> Don't forget a pair of masts. The thing won't work lying on the ground!

I'm gonna use two big ol' pecan masts that are growin' here.

354. Re: Antennas for Kites

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 20:17:02 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vgbo692b7kis91@corp.supernews.com>
Source record: 113497

My favorite kite was a surplus WWII that had yellow fabric and about 4 feet
tall..
It was easy to launch, had a lot of lift and quite durable..
But it was in pre-ham days..
I wish I could find another to put up some antennas..
Anyone know where I can find one?
tnx
hank wd5jfr

"William H. O'Hara, III" <whoohara@yahoo.com> wrote in message
news:Xns93AC78BD32A0AAX2A3DA5M1512AODKAMO@65.100.3.61...
> Would someone like to comment on their
> favorite antenna for a kite setup. Would
> you please give reasons such as VSWR,
> ERP, and ease of use.
>
> Thanks
> Bill

355. Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 21:31:15 UTC
From: gelewis@houston.rr.com
Message-ID: <3f05f236.14744356@news-server.houston.rr.com>
Source record: 113498

Cast me in that lot of operators who moved into a new QTH with outdoor antenna restrictions! Has anyone come across (or actually used) an HF antenna design for the attic that got reasonably good operating results? Thanks for reading.

KB5Q

356. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 21:32:20 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f05f1df@shknews01>
Source record: 113499

Why don't use a noise bridge and find the impedance ?
Then, from there... it's your call.

Nic.

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:XAudnRiaY6FSM5iiXTWJkg@ctc.net...
> > Does anyone know how to find out wire's impendance so that I can match
it
> > to appropriate balun? I want to make an randomwire antenna but I'm not
> > sure what balun to use, since no idea about the wire's impendance. I
want
> > to use copper wire.
>
> There is no way to know from this information. YOu need to give the
> frequecny , the length of the wire, height above ground and probably a
bunch
> more info. YOu do not use a balun on a random wire but feed it into an
> antenna tuner and match it with the tuner unless the transmitter is
> designed for random wire such as some of the old military gear.
>
> The random wire is mostly a make do antenna and will usually be less
> efficient than many other antennas. If this antenna is to be installed in
a
> fixed location you should look at a differant type antenna. Maybe a
windom
> type.
>
>

357. 13 cm antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 21:33:53 UTC
From: andy JACKSON <andyjackson@twoeoneklp.freeserve.co.uk>
Message-ID: <be4rs1$6ov$1@newsg1.svr.pol.co.uk>
Source record: 113500

please could some one help me i am after a good 13 cms antenna for the use on atv,i have reciever at the moment but no metal work what would be the best and were to buy from. thanks for looking at this message andy 2e1klp/m3klp

358. Re: Antennas for Kites

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 22:05:03 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <jSmNa.11065$Ey6.3739@rwcrnsc52.ops.asp.att.net>
Source record: 113502

That kite was part of the "Gibson Girl" survival package. They are quite collectable today and sell for much more than they are worth. Visit a kite shop some time. The standard materials are fiberglass (or carbon fiber) frames and nylon sail cloth.
"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message news:vgbo692b7kis91@corp.supernews.com...
> My favorite kite was a surplus WWII that had yellow fabric and about 4 feet
> tall..
> It was easy to launch, had a lot of lift and quite durable..
> But it was in pre-ham days..
> I wish I could find another to put up some antennas..
> Anyone know where I can find one?
> tnx
> hank wd5jfr
>
> "William H. O'Hara, III" <whoohara@yahoo.com> wrote in message
> news:Xns93AC78BD32A0AAX2A3DA5M1512AODKAMO@65.100.3.61...
> > Would someone like to comment on their
> > favorite antenna for a kite setup. Would
> > you please give reasons such as VSWR,
> > ERP, and ease of use.
> >
> > Thanks
> > Bill
>
>

359. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 22:06:31 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <39ubgv8g5607q8d82iv3egsh9ph56ks74b@4ax.com>
Source record: 113501

Just string up as much wire as you can get in there, and feed it with
a tuner. For one band, like 20-meters, put up a coax fed dipole.
It's OK to bend the ends to fit. An auto tuner works great for attic
antennas. The Icom AH-4 will tune a dipole just fine. See
http://www.hamoperator.com/ah4/ah4.htm

Dick - W6CCD

On Fri, 04 Jul 2003 21:31:15 GMT, gelewis@houston.rr.com (Glenn Lewis)
wrote:

>Cast me in that lot of operators who moved into a new QTH with outdoor
>antenna restrictions! Has anyone come across (or actually used) an HF
>antenna design for the attic that got reasonably good operating
>results? Thanks for reading.
>
>KB5Q

360. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 22:12:38 UTC
From: rc12234@aol.com
Message-ID: <20030704181238.11687.00000147@mb-m10.aol.com>
Source record: 113503

I have had reasonably good results using
inverted V dipoles in close proximity to my
transceiver. Cathedral ceilings prevent me
from using the full length of the attic. There was enough room for full size
dipoles only on 10, 15, and 17 meters. Loading coils and an L network allow me
to also operate on 10 and 40 meters.
Ron

361. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 22:17:32 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F05FCFC.7890100C@cwis.net>
Source record: 113504

Gene,
I haven't seen such a comparison done, and I would
really like too. I've tried several mobile antennas
for 80, 40 and 20 meters and in general, the larger and
uglier the better (no hard figures to give you).
'Doc

PS - Not much help, huh?

362. Re: Antennas for Kites

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 22:22:59 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F05FE43.95AABC3C@cwis.net>
Source record: 113505

Henry,
Do a search for "Flexifoil Power Kites". Not too
sure how easy they are to fly, and you'd have to want
to awful bad, but they should be able to hold up almost
anything you could tie on to them...
'Doc

363. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 22:31:55 UTC
From: richardharrison@webtv.net
Message-ID: <26026-3F06005B-77@storefull-2312.public.lawson.webtv.net>
Source record: 113506

Cecil, W5DXP wrote:
"I`m talking about cancellation of waves where the waves cease to exist."

Fine. But, you`re talking about transmission lines, and wired circuits. The way to put together out-of-phase volts and amps is to join out-of-phase sources.

Equal volltage out-of-phase sources will produce equal out-of-phase amps, when connected. It`s about the only easy way to make opposite voltages and currents coincide.

You may have nearly lossless cables and connections, but the energy source or sources won`t be so lossless and these are likely to let their inherent smoke out.

Best regards, Richard Harrison, KB5WZI

364. help: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 22:57:40 UTC
From: c <no@spam.com>
Message-ID: <3f060936$0$45378$1b62eedf@news.wanadoo.nl>
Source record: 113507
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Hello All,

I want to buy a handheld for 2, and 70cm.
I was thinking to buy a kenwood th-f7e, or
a yeasu vx-5r.
They are now in stock, the price is the same, it's
399 euro.

I heard the kenwood th-f7e has some problems.
The microphone quality of the th-f7e does not so
good (a th-f7 user told me that),a ext mic solve that problem.

S-meter reading is not correctly, weak stations
with noise are going easely to s-9 read out.

The HF bands receiving is bad, but that is easy to
explain, short antenna, and there is not enough
space for good filters.

Hf-bands is not importand for me, but we pay
for it.

I read this all on internet, and in a Radio magazine
of Holland.

There is more.

I did not find test information about the yaesu vx-5r
It has hf, but not SSB on it (it is not so importand for me!).

It has 6 meter (mode FM), the antenne is ofcourse
short for this band, and what is there to do on
FM on 50 Mhz?
I do not have expiriance on 6 meters, but I
think that it is a SSB dx-band (are there enough FM signals?)..

Does someone have expiriance with this yaesu
handheld?

Are there any problems with this trx?

Please your comments in this newsgroup.

73's Cor

365. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 23:09:59 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be51g8ssh1@slb2.atl.mindspring.net>
Source record: 113508

Mich:

Never heard of "Impendance"!

What?

--
Peter K1PO
Indialantic By-the-Sea, FL.

"Michalkun" <buranko2000@yahoo.com> wrote in message
news:Xns93AE64FC092E9michalkunyahoocom@128.233.192.251...
> Does anyone know how to find out wire's impendance so that I can match it
> to appropriate balun? I want to make an randomwire antenna but I'm not
> sure what balun to use, since no idea about the wire's impendance. I want
> to use copper wire.

366. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 23:42:37 UTC
From: c <no@spam.com>
Message-ID: <3f0610e7$0$10836$1b62eedf@news.wanadoo.nl>
Source record: 113509
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

```
Hello All,

I just saw the new yaesu vx-7r is also close
to that price (vx-5, and th-f7)!

What should I do?

Cor

"c" <no@spam.com> schreef in bericht
news:3f060936$0$45378$1b62eedf@news.wanadoo.nl...
> Hello All,
>
> I want to buy a handheld for 2, and 70cm.
> I was thinking to buy a kenwood th-f7e, or
> a yeasu vx-5r.
> They are now in stock, the price is the same, it's
> 399 euro.
>
> I heard the kenwood th-f7e has some problems.
> The microphone quality of the th-f7e does not so
> good (a th-f7 user told me that),a ext mic solve that problem.
>
> S-meter reading is not correctly, weak stations
> with noise are going easely to s-9 read out.
>
> The HF bands receiving is bad, but that is easy to
> explain, short antenna, and there is not enough
> space for good filters.
>
> Hf-bands is not importand for me, but we pay
> for it.
>
> I read this all on internet, and in a Radio magazine
> of Holland.
>
> There is more.
> ------------------------------------------------
>
> I did not find test information about the yaesu vx-5r
> It has hf, but not SSB on it (it is not so importand for me!).
>
> It has 6 meter (mode FM), the antenne is ofcourse
> short for this band, and what is there to do on
```

> FM on 50 Mhz?
> I do not have expiriance on 6 meters, but I
> think that it is a SSB dx-band (are there enough FM signals?)..
>
> Does someone have expiriance with this yaesu
> handheld?
>
> Are there any problems with this trx?
>
> Please your comments in this newsgroup.
>
> 73's Cor
>
>
>
>
>
>
>

367. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 23:46:11 UTC
From: richardharrison@webtv.net
Message-ID: <22938-3F0611C3-78@storefull-2313.public.lawson.webtv.net>
Source record: 113514

Peter, K1PO wrote:
"Never heard of "Impendance"!"

Sure! It`s Impendance Day!

Best regards, Richard Harrison, KB5WZI

368. Re: Antennas for Kites

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 23:55:44 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vgc50eo3dv3323@corp.supernews.com>
Source record: 113510

Yes you a right "Gibson Girl" everything was yellow and the kite had a
aluminum frame that was nearly automagic..
I bought the whole setput in 1955 for less than $5.00 and now it's long
gone..
The yellow box had indentations for your legs above the knees so that one
could "easily" crank the hand generator to run the radio..
I know it had a transmitter but can't recall a receiver..
But I do recall that the kite had more "pull" than any other kite I had
tried or have ever tried for its size..
thanks for reminding me..
73
hank wd5jfr

"CW" <clinton.magers@comcast.net> wrote in message
news:jSmNa.11065$Ey6.3739@rwcrnsc52.ops.asp.att.net...
> That kite was part of the "Gibson Girl" survival package. They are quite
> collectable today and sell for much more than they are worth. Visit a
kite
> shop some time. The standard materials are fiberglass (or carbon fiber)
> frames and nylon sail cloth.
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:vgbo692b7kis91@corp.supernews.com...
> > My favorite kite was a surplus WWII that had yellow fabric and about 4
> feet
> > tall..
> > It was easy to launch, had a lot of lift and quite durable..
> > But it was in pre-ham days..
> > I wish I could find another to put up some antennas..
> > Anyone know where I can find one?
> > tnx
> > hank wd5jfr
> >
> > "William H. O'Hara, III" <whoohara@yahoo.com> wrote in message
> > news:Xns93AC78BD32A0AAX2A3DA5M1512AODKAMO@65.100.3.61...
> > > Would someone like to comment on their
> > > favorite antenna for a kite setup. Would
> > > you please give reasons such as VSWR,
> > > ERP, and ease of use.
> > >
> > > Thanks
> > > Bill
> >
> >
>

>

369. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-04 23:55:58 UTC
From: jgboyles@aol.com
Message-ID: <20030704195558.15511.00000201@mb-m06.aol.com>
Source record: 113511

> Has anyone come across (or actually used) an HF
>antenna design for the attic that got reasonably good operating
>results?

My attic is about 40' X 30' with about 8' at the apex of the roof. It is 2 story so the tip of the roof is about 38' above ground. I put a big "Z" configuration feeding it at the middle of the vertical portion of the "Z". Overall wire length is 100', feed it with open wire 450 ohm line with a choke balun and tuner at the shack. My homebrew tuner can load it from 3.8 mhz. all the way to 10 meters. On 20m, 17m, and 15m it has gain in certain directions cause the pattern gets like a cloverleaf.
It interferes with phone lines, television, stereo ect. it sometimes trips my gfi circuit breaker in my kitchen. It also set of my alarm system which caused the fire dept. to visit my house. (disconnected the upstairs smoke detectors.). It can also cause my Icom to act crazy because of the closeness of the antenna to the rig. I have to back off on the power when this happens
My conclusion is this attic antenna works well, but does not work as well as if the same amout of wire was outside in the clear. It also causes much rfi that an outside antenna may or may help.
73 Gary N4AST

370. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 00:02:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0617a4_1@corp.newsgroups.com>
Source record: 113512

Richard Harrison wrote:
> Equal volltage out-of-phase sources will produce equal out-of-phase
> amps, when connected.

Nope, think about it, Richard. Equal out-of-phase voltage sources will produce in-phase currents, when connected. Out-of-phase currents would cancel to zero since they would oppose each other.

The zero current null in a standing wave is caused by equal out-of-phase currents. However, the voltages are in phase at a maximum. I don't see any way to hook up a circuit model of two voltages 180 degrees out of phase while the two currents are also 180 degrees out of phase. It appears to me that this special condition can only occur with EM waves in free space or transmission lines, not ordinary circuit signals.

I think maybe the answer to my question lies in particle physics. Unfortunately, I don't have any references so will need to make another trip to Texas A&M. The question seems to be: If two coherent photons exist with a 180 degree phase difference between them, what happens when these two photons are merged along an identical vector path? Seems to me, they would de-materialize in their original direction of travel (destructive interference) and re-materialize in phase traveling in the opposite direction (constructive interference).
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

371. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 00:05:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f06185e$1_1@corp.newsgroups.com>
Source record: 113513

Peter Brackett wrote:

> Mich:
> Never heard of "Impendance"!
>
> What?

Peter, isn't 'impededance' what you do when you go dancing? :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

372. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 00:22:06 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <hUoNa.2810$ju6.42173@newsfep4-glfd.server.ntli.net>
Source record: 113515
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"c" <no@spam.com> wrote in message
news:3f060936$0$45378$1b62eedf@news.wanadoo.nl...
> Hello All,
> I want to buy a handheld for 2, and 70cm.
> I was thinking to buy a kenwood th-f7e, or
> a yeasu vx-5r.
> They are now in stock, the price is the same, it's
> 399 euro.
>
Got something against the VX-7 ?
the VX-5 is now obsolete

Steve Terry

373. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 00:35:03 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <be56fn$36p$1@hercules.btinternet.com>
Source record: 113516

> No, 1/2 of the power doesn't get dissipated in the termination. Some
> of the power in the forward travelling wave never reaches the
> termination(s).
>
> For example I have modeled a 144 MHz LaPort Rhombic that at 3
> wavelengths above ground has 23 dBi gain at 5 degress elevation and
> the E-plane sidelobes down > 11dB and F/B of 30 dB. With side lengths
> of 3.5 and 6 lambda, and two 500 ohm terminations, the total loss in
> the terminations is 2 dB.
>
> BTW, this is probably the lowest sidelobe level I have ever seen in a
> rhombic.
>
==========

OK, but there's still hell of a lot of power lost in a rhombic's termination.

Apart from an improvement in receiving signal-to-noise ratio, what advantage do you get for it in the wanted direction of propagation compared with other types of beam which don't need lossy terminations to obtain a unidirectional radiation pattern?

Reg.

374. Re: help: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 00:50:33 UTC
From: dplatt@radagast.org
Message-ID: <vgc86peuuep872@corp.supernews.com>
Source record: 113517
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

In article <3f060936$0$45378$1b62eedf@news.wanadoo.nl>, c <no@spam.com> wrote:

>I heard the kenwood th-f7e has some problems.

Zathras does not know.

>---
>
>I did not find test information about the yaesu vx-5r
>It has hf, but not SSB on it (it is not so importand for me!).
>
>It has 6 meter (mode FM), the antenne is ofcourse
>short for this band,

Reportedly the antenna _will_ load up on 6 meters, if you install the
6-meter tip, but it's very inefficient. I've never actually tried to
use it.

> and what is there to do on
>FM on 50 Mhz?

Not very much. There are a number of 6-meter FM repeaters here in the
San Francisco bay area, but fewer than there were some years ago (I
understand) and there's not much activity at all.

>I do not have expiriance on 6 meters, but I
>think that it is a SSB dx-band (are there enough FM signals?)..

SSB and CW in the lower-frequency portions, FM in the upper.

>Does someone have expiriance with this yaesu
>handheld?
>
>Are there any problems with this trx?

I've had one for about a year. It's a nice little HT. I treat it
strictly as a dual-bander, having swapped the original antenna for a
more flexible 2m/440 duck from Pryme. The lithium battery carries
quite a respectable charge - I have yet to actually run it down. The
U.S. version can be programmed to monitor FM frequencies in the
222-225 MHz U.S. amateur band - nice for monitoring a few local
repeaters, although it can't transmit on those frequencies.

The VX-5 does get very warm during extended transmission at full power;
the case and the operator's hand are obviously part of the heatsink.
The SMA jack on the top has a tendency to work loose and isn't rated

for a lot of attach/detach cycles - I recommend tightening it carefully, and then installing an SMA/BNC adapter with a rubber washer or grommet at the bottom to act as a strain relief. The belt clip is untrustworthy... shop around for a replacement which actually *clips* onto your belt!

The VX-5's RF input filtering isn't great. If I hook it to an efficient full-size antenna (quarter-wave groundplane whip or magmount, roll-up or bicycle or base-station J-pole) there's quite a bit of intermodulation-related signal breakthrough from the powerful 156 MHz paging transmitters in my area. I now use an outboard anti-pager notch filter when using it with sensitive or high-gain antennas, and this solves the problem very nicely.

Audio quality seems quite good, both on transmit and receive.

The lettering on the rubber keys is reported to wear off after a few months of heavy use (a problem with many HTs these days). Yaesu makes a leather-and-plastic soft-case, which protect the keys and the display from actually being touched - I've had my VX-5 in one since I bought it and the keys show no sign of wear or fading.

There's plenty of information on the Net about the VX-5, including modifications, programming tips, and so forth.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

375. Re: help: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 00:57:59 UTC
From: c <no@spam.com>
Message-ID: <3f06228d$0$76759$1b62eedf@news.wanadoo.nl>
Source record: 113518
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Hello All,

Many thanks for the information (i will reply later, its late now!).

Does anyone know some details from the vx-7 review in practical wirles?

Cor

"Dave Platt" <dplatt@radagast.org> schreef in bericht
news:vgc86peuuep872@corp.supernews.com...
> In article <3f060936$0$45378$1b62eedf@news.wanadoo.nl>, c <no@spam.com>
wrote:
>
> >I heard the kenwood th-f7e has some problems.
>
> Zathras does not know.
>
> >---
> >
> >I did not find test information about the yaesu vx-5r
> >It has hf, but not SSB on it (it is not so importand for me!).
> >
> >It has 6 meter (mode FM), the antenne is ofcourse
> >short for this band,
>
> Reportedly the antenna _will_ load up on 6 meters, if you install the
> 6-meter tip, but it's very inefficient. I've never actually tried to
> use it.
>
> > and what is there to do on
> >FM on 50 Mhz?
>
> Not very much. There are a number of 6-meter FM repeaters here in the
> San Francisco bay area, but fewer than there were some years ago (I
> understand) and there's not much activity at all.
>
> >I do not have expiriance on 6 meters, but I
> >think that it is a SSB dx-band (are there enough FM signals?)..
>
> SSB and CW in the lower-frequency portions, FM in the upper.
>
> >Does someone have expiriance with this yaesu
> >handheld?
> >

> >Are there any problems with this trx?
>
> I've had one for about a year. It's a nice little HT. I treat it
> strictly as a dual-bander, having swapped the original antenna for a
> more flexible 2m/440 duck from Pryme. The lithium battery carries
> quite a respectable charge - I have yet to actually run it down. The
> U.S. version can be programmed to monitor FM frequencies in the
> 222-225 MHz U.S. amateur band - nice for monitoring a few local
> repeaters, although it can't transmit on those frequencies.
>
> The VX-5 does get very warm during extended transmission at full power;
> the case and the operator's hand are obviously part of the heatsink.
> The SMA jack on the top has a tendency to work loose and isn't rated
> for a lot of attach/detach cycles - I recommend tightening it
> carefully, and then installing an SMA/BNC adapter with a rubber washer
> or grommet at the bottom to act as a strain relief. The belt clip is
> untrustworthy... shop around for a replacement which actually *clips*
> onto your belt!
>
> The VX-5's RF input filtering isn't great. If I hook it to an
> efficient full-size antenna (quarter-wave groundplane whip or
> magmount, roll-up or bicycle or base-station J-pole) there's quite a
> bit of intermodulation-related signal breakthrough from the powerful
> 156 MHz paging transmitters in my area. I now use an outboard
> anti-pager notch filter when using it with sensitive or high-gain
> antennas, and this solves the problem very nicely.
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> Audio quality seems quite good, both on transmit and receive.
>
> The lettering on the rubber keys is reported to wear off after a few
> months of heavy use (a problem with many HTs these days). Yaesu makes
> a leather-and-plastic soft-case, which protect the keys and the
> display from actually being touched - I've had my VX-5 in one since I
> bought it and the keys show no sign of wear or fading.
>
> There's plenty of information on the Net about the VX-5, including
> modifications, programming tips, and so forth.
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

376. Re: help: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 01:36:01 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <FZpNa.2845$ju6.44263@newsfep4-glfd.server.ntli.net>
Source record: 113419
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"c" <no@spam.com> wrote in message
news:3f06228d$0$76759$1b62eedf@news.wanadoo.nl...
> Hello All,
> Many thanks for the information (i will reply later, its late now!).
> Does anyone know some details from the vx-7 review in practical wirles?
>
Check out:
http://www.mods.dk/
will give you some idea of what it can do

Steve Terry

377. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 01:39:43 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <XdqdnUOgzPb-sZuiU-KYvw@comcast.com>
Source record: 113420

Glenn,

How restrictive? A lot of places just put a limit as to how high off the roof it can be, like 10 -15 feet. Also, the people who wrote the restrictions have a very narrow idea of what an "antenna" is. I don't think they would recognize a wire across your back yard as an antenna.

As an aside, somebody I worked with tried to get a variancve for a tower. The neighbors objected; so, he put up a triband beam on an 8 foot tripod in the middle of the roof, and ran bright blue coax and orange rotor cable down the front of his house.

Tam/WB2TT
"Glenn Lewis" <gelewis@houston.rr.com> wrote in message
news:3f05f236.14744356@news-server.houston.rr.com...
> Cast me in that lot of operators who moved into a new QTH with outdoor
> antenna restrictions! Has anyone come across (or actually used) an HF
> antenna design for the attic that got reasonably good operating
> results? Thanks for reading.
>
> KB5Q

378. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 02:07:19 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0632D7.5F38E9D@cwis.net>
Source record: 113421

AH! Only if you find two 'MP's dancing together...
'Doc

379. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 02:42:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f063d11_2@corp.newsgroups.com>
Source record: 113422

JDee wrote:
> I don't have any answers
> to any of the problems that have been bandied about in the
> thread and if I did, I wouldn't share them with you as it
> would be a complete waste of time on my part.

That's a heck of an attitude in an information oriented newsgroup.

Maybe if I ask my question a little differently. Here's a URL
that has a JAVA Ap illustrating interference.

http://micro.magnet.fsu.edu/primer/java/interference/waveinteractions2/

Set the amplitudes the same, the frequencies the same, and the phase
of one to zero and the other to 180 degrees. Virtually everyone has
seen a diagram like that before. The result is a straight line that
extends out to infinity. What everyone except me seems to have missed
is that straight line extending out to infinite space-time contains
a zero E-field, a zero B-field, and ExB = zero energy. What happened
to the energy in the original two waves?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

380. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 03:06:31 UTC
From: macve3gro@aol.com
Message-ID: <20030704230631.02026.00000222@mb-m07.aol.com>
Source record: 113424

Sure have! When I lived in a subdivision with restrictive covenants I used an indoor antenna with great success. I had a single-story bungalow. The antenna began at floor level in a bedroom closet, ran up into the attic, made a 90-degree turn so as to run under the roof ridge of the house and ended with a large capacity hat (full attic-width wire cage) at the gable end of the attic. I loaded all this against the water pipes and heating ducts of my house. Resonant frequency of the system turned out to be 2.8 MHz. I ran coax to a simple switched L-network which I mounted on the floor of the closet. I was able tune up this system on both 80 and 160 metres. Fine tuning was accomplished with a piece of ferrite rod taped to a stick which I slid in and out of the L-network coil! Worked as well as any low antenna on 80, and one winter, I even managed to work Europe with it--three times--on 160! So be inventive and give this--or something like this--a try. Cheers, GL es 73.
Harry, VE3GRO
Harry MacLean, VE3GRO
500 Riverside Drive, London, ON N6H 2R7
(519) 473-1668

381. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 03:08:19 UTC
From: gil <gilpi@mindspring.com>
Message-ID: <be5f97$50a$1@slb9.atl.mindspring.net>
Source record: 113423

Im using an "L" shaped random wire in the attic with the end of the wire running down out of the attic into my back upper deck, down to the lower deck, down to the basement into a tuner and a good ground, but got to be realistic and keep the power down to no more than 30 watts if I want to keep the peace with my neighbors and since all I use is CW this works quite well for me

gil

"Glenn Lewis" <gelewis@houston.rr.com> wrote in message news:3f05f236.14744356@news-server.houston.rr.com...
> Cast me in that lot of operators who moved into a new QTH with outdoor
> antenna restrictions! Has anyone come across (or actually used) an HF
> antenna design for the attic that got reasonably good operating
> results? Thanks for reading.
>
> KB5Q

382. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 04:13:03 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <be5j8f$p48$0@208.207.71.176>
Source record: 113425

Peter Brackett wrote:

> Mich:
>
> Never heard of "Impendance"!
>

What? U mever jeard of impendance, Pete? I thot that wuz
impedance you hadn't figured out what was yet.

383. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 04:14:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgck4mogdrlf71@corp.supernews.com>
Source record: 113426

It's not obvious to me how you'd get the beams from, say, two coherent lasers, to line up exactly superimposed like that, with the exact overlayment of the two beams extending from some point to infinity. Can you explain in words or direct us to a diagram showing how that could be accomplished?

Roy Lewallen, W7EL

W5DXP wrote:
> JDee wrote:
>
>> I don't have any answers to any of the problems that have been bandied
>> about in the thread and if I did, I wouldn't share them with you as it
>> would be a complete waste of time on my part.
>
>
> That's a heck of an attitude in an information oriented newsgroup.
>
> Maybe if I ask my question a little differently. Here's a URL
> that has a JAVA Ap illustrating interference.
>
> http://micro.magnet.fsu.edu/primer/java/interference/waveinteractions2/
>
> Set the amplitudes the same, the frequencies the same, and the phase
> of one to zero and the other to 180 degrees. Virtually everyone has
> seen a diagram like that before. The result is a straight line that
> extends out to infinity. What everyone except me seems to have missed
> is that straight line extending out to infinite space-time contains
> a zero E-field, a zero B-field, and ExB = zero energy. What happened
> to the energy in the original two waves?

384. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 04:29:00 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <be5k6c$tj9$0@208.207.71.134>
Source record: 113427

JGBOYLES wrote:

> > Has anyone come across (or actually used) an HF
> >antenna design for the attic that got reasonably good operating
> >results?
>
> My attic is about 40' X 30' with about 8' at the apex of the roof. It is 2
> story so the tip of the roof is about 38' above ground. I put a big "Z"
> configuration feeding it at the middle of the vertical portion of the "Z".
> Overall wire length is 100', feed it with open wire 450 ohm line with a choke
> balun and tuner at the shack. My homebrew tuner can load it from 3.8 mhz. all
> the way to 10 meters. On 20m, 17m, and 15m it has gain in certain directions
> cause the pattern gets like a cloverleaf.
> It interferes with phone lines, television, stereo ect. it sometimes trips my
> gfi circuit breaker in my kitchen. It also set of my alarm system which caused
> the fire dept. to visit my house. (disconnected the upstairs smoke
> detectors.). It can also cause my Icom to act crazy because of the closeness
> of the antenna to the rig. I have to back off on the power when this happens
> My conclusion is this attic antenna works well, but does not work as well as
> if the same amout of wire was outside in the clear. It also causes much rfi
> that an outside antenna may or may help.
> 73 Gary N4AST

When I had my 75 meter dipole running across part of the house, I always had to tolerate RFI, or rather the family did, and I had to tolerate birdies from the XYL's TV set. zWhen I'd fire up the homebrew 4-1000 amp I used at the time the hall light, a 60 watt incandescent lamp would flicker on with voice peaks.
After I moved all antennas to a tower on another half-acre lot behind the one the house is on, all that disappeared.

My soninlaw's attic antenna installation in the Pacific Northwest worked out OK but had the same sort of RFI problems you describe, at any power level above 25 watts or so. I don't think that is a situation that lends itself well to a good resolution where you can run normal power levels and not have the usual set of problems with it.

Dick

Dick

385. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 04:45:26 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030705004526.23578.00000164@mb-m04.aol.com>
Source record: 113428

>
>Never heard of "Impendance"!
>
>What?
>

Peter, Peter

Its "I'm pen dance" - said one pen to another while twisting waves around the undeterminated cooper wire.
The other pen said: "Just bring the wire through the window, hook it to the antenna tuner also called matcher box, twist the knobs until you have no Cecil reflections and you no need no stinkin' balun or baloney."
The #1 pen said: "What a bright idea" and they continued in the pen dance untill they lost all the energy in the die electric mediuma.
Now you know the rest of the story.

Bada BUm

386. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 05:22:42 UTC
From: richardharrison@webtv.net
Message-ID: <4277-3F0660A2-118@storefull-2318.public.lawson.webtv.net>
Source record: 113431

Cecil, W5DXP wrote:
"Set the amplitudes the same, the frequencies the same, and the phase of one to zero and the other to 180 degrees."

From the 1955 edition of Terman page 1:
"The essential properties of a radio wave are the frequency, intensity, direction of travel, and plane of polarization."

Cecil`s question seems to be, suppose we have two sources of identical waves which coincide except one source is 180-degrees out-of-phase with the other.

We can likely approximate the two sources with two antenna elements driven out-of-phase, or they could be driven so that the space and phase between them combine to produce a null in a certain direction or directions.

There are countless such examples. Several are given on page 8-8 of the 19th edition of the ARRL Antenna Book.

Gain in the antenna containing the directional pattern with nulls results from the same amount of power in the directional antenna as in the non-directional antenna. The power which would have gone into the nulls goes instead into the rest of the pattern. That qualifies as a "change in direction" but I doubt that is what Cecil meant.

Cecil wants to talk about light waves in a thin optical film and to try to relate that to shortwaves on a transmission line.

Cecil seems to have trouble seeing that out-of-phase sources produce out-of-phase currents in a load. You can be sure that if the load is a resistor, that is exactly what happens. Out-of-phase sources produce out-of-phase currents in a common resistor.

The condition proposed for a wired load is a short-circuit, and we know the outcome of a wired short-circuit.

Best regards, Richard Harrison, KB5WZI

387. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 05:24:43 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <vitNa.5088$ZT5.346@news2.east.cox.net>
Source record: 113429

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:19655-3F01DEEF-173@storefull-2313.public.lawson.webtv.net...
> Pete wrote:
> "You can (have) a good ground for lightning that will heat earthworms
> with RF."
>
> I`ve tried to think how?
>
> A good lightning ground bypasses earth capacitance with low resistance.
> A good lightning ground must have low reactance in addition to low
> resistance. Lots of ground radials make a good radio ground. They also
> make a great lightning ground. A lone ground rod makes a lousy radio
> ground. It also makes a lousy lightning ground.
>
> Much of a lightning stroke`s energy is in its abrupt start and stop.
> That`s why it generates a wide r-f spectrum. Heard any radio static
> lately?
> A large inductance may vitiate an r-f ground. It will just as surely
> vitiate a lightning ground with the difference that it can`t be tuned
> out of the lightning ground.
>
> Uncle Peter may be mistaken.
>
> Best regards, Richard Harrison, KB5WZI
>
Richard

I guess clarification is needed on what the RF ground is for..
Many hams interchange RF ground for a counterpoise for
vertical or end feed antenna.

Peter

388. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 05:44:54 UTC
From: Wes Stewart <n7ws@_arrl.net>
Message-ID: <5iocgvk1gkrvcv3mro52o97ove7qbup0n0@4ax.com>
Source record: 113430

On Sat, 5 Jul 2003 00:35:03 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

|> No, 1/2 of the power doesn't get dissipated in the termination. Some
|> of the power in the forward travelling wave never reaches the
|> termination(s).
|>
|> For example I have modeled a 144 MHz LaPort Rhombic that at 3
|> wavelengths above ground has 23 dBi gain at 5 degress elevation and
|> the E-plane sidelobes down > 11dB and F/B of 30 dB. With side lengths
|> of 3.5 and 6 lambda, and two 500 ohm terminations, the total loss in
|> the terminations is 2 dB.
|>
|> BTW, this is probably the lowest sidelobe level I have ever seen in a
|> rhombic.
|>
|==============================
|
|OK, but there's still hell of a lot of power lost in a rhombic's
|termination.
|
|Apart from an improvement in receiving signal-to-noise ratio, what advantage
|do you get for it in the wanted direction of propagation compared with other
|types of beam which don't need lossy terminations to obtain a unidirectional
|radiation pattern?

I developed the model of the antenna described above while dreaming
about a simple, low cost EME antenna that would be useful at moon rise
at my location.

Clearly, it would be of limited usefulness and no better than a (very)
long Yagi.

I am not a proponent of rhombics, in fact the plethora of minor lobes
in most designs is awful. Also, the wide bandwidth properties are an
illusion if the pattern is a consideration.

I spent several hours optimizing the design and if minor lobes are a
consideration (for EME they are), it is actually quite critical. That
said, 23 dB is a lot of gain, even throwing away 37% of the power.

389. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 06:49:23 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307042249.481a9eb7@posting.google.com>
Source record: 113432

"G.Balinski" <Nospam@nospam.com> wrote in message news:<XkgNa.35888$fG.18866@sccrnsc01>...
> Has anyone put together a recent test of mobile HF antennas? I think
> that I remembered something in past years called a "shoot out" or something
> like that. As far as I remember though, it was as much of a test of the
> installation of the antennas as the antennas themselves as different
> vehicles and install methods were used. It would be nice to see on
> objective comparison of the various units like the Hustler series, Ham
> Stick, all the variants of the screw driver antennas, the Texas Bugcatcher,
> etc. all mounted on the same platform with the same grounding system, etc.
>
> Anyone seen such a test ?

They have had a few, but they kind of fizzled out. But as far as which
is best, they have tested enough to know that. Also, like you say, the
car or truck used, the height and location of the mount are important,
and also what bands are used.
Naturally, the most loss is on the lower bands, so 80m is usually used
as the band tested. On the higher bands, you can use a lesser antenna
with good results , where as on the low bands this may not be
possible.
As far as the ranking, usually the bugcatcher is considered king of
the hill. If a large capacity hat is used, no contest.
The coil location is more likely to be higher than most screwdrivers,
and it's easy to have an efficient coil.
The screwdrivers are generally a close second.
The hustler would be a fairly distant third. Hustlers have a lossy
coil for it's size. The big "super" ones, worse than the small ones.
The standard hamstick is lower still. How bad depends on the length of
the stinger on top.
An unloaded whip tuned with a tuner is about the worst.
Of course, there are exceptions...You can modify antennas to improve
them, and the price don't mean doodley as to the performance. Also, a
hamstick is fairly lame on 80m, but works quite well on the higher
bands as long as the stinger is not too short.
My antenna cost me nothing and is based from an old 20m hamstick. I
made a new appx 3 inch dia coil which has taps for all bands. It
weighs about the same as an average fishing rod and reel. It's 10 ft
total and center loaded. I'll take on most any bugcatcher or
screwdriver. It's equal to a 10 ft center loaded bugcatcher with a 3
inch coil. I also have a 3 ft extender mast which will increase it to
13 ft tall, and the coil 8 ft off the base. I can dog the screwdrivers
with low mounted coils on 80 and 40. I have a hustler coil and stinger
which I have tried on solid masts, on the same mount I use my normal
antenna on. My "plastic bugcatcher" mangled the hustler. No contest at

all. My homebrew coil, even formed on thin 3 inch plastic tube, is far superior to the hustler coil. I think very close to a normal bugcatcher coil with an open form.
I wish they had more "shootouts". That might be fun to have at the Belton TX hamfests....:/ Thats about the only hamfest I go to. And I miss half of those...

I finally have a picture of my mobile antenna taken at last weekends yard day.
http://web.wt.net/~nm5k/fd2003-1.jpg
It's to the left mounted on the side of my old "safari wagon".
It's not the best pix, but you can see what it looks like. It's in the standard 10 ft tall "driving" mode in that picture. The base is over 4 ft off the ground, mounted on the left side of the utility box. The coil is about 5.5 ft above the base, and the stinger is 5 ft. With the extender mast, the coil is over 8 ft off the base. Thats as tall as some peoples whole antenna...Of course, I don't usually drive with it that tall. How you see it in the pix is how I use it when driving. I have a quick disconnect, and you can take the antenna off in a second. It's very light and flexible. I can slap trees and it's no biggie. We were setting up my beam and tower that I hauled on that motorcycle trailer.
You can see other pix at
http://bvarc.freeshell.org/images/FD2003/index.html
They put us on TV this year. But me from a ways back ...:/ I told the cameraman I was too damn ugly to be on TV. So they showed me way off in the distance working on my beam and interviewed others closer up. One of our guys mentioned the "homeland security" aspect of the deal. They ate that up. I think thats why they put us on this year. Usually, they tape, but don't show on the air if there is no need for some "filler" on the newscast. MK

390. Re: Best Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 06:55:54 UTC
From: G&R <spam@limbo.hell>
Message-ID: <XDuNa.11616$bD1.980413@news20.bellglobal.com>
Source record: 113433

Hi,

If you are looking for a quad antenna I might suggest a Baby Boomer Quad by Degen Design. Despending on the actual mounting location this may be the ideal antenna.

www.degendesigns.com

If you have any questions, please contact me at www.degendesigns.com

73
Guenther
info@degendesigns.com

<paularmes@cox.net> wrote in message
news:5I5Na.582902$vU3.548174@news1.central.cox.net...
> Hi,
> I just got my general license.
> I am limited on space but will be able to mount an antenna about 6 feet
> above my roofline. Radials are not a possibility because of structural and
> aesthetic issues.
> I have a Icom 746Pro.
> I would like a multiband compact beam or quad or vertical.
> I will not be using an amplifier apart from the transceiver.
> What would you recommend?
> Thanks,
> Paul Armes

391. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 07:36:07 UTC
From: "Ralph A. Schmid, DK5RAS" <nospam@radio-link.net>
Message-ID: <ttvcgvsjev3s9r1dddl4emrcmqh0barlnl@4ax.com>
Source record: 113434
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"c" <no@spam.com> wrote:

>Hello All,
>
>I just saw the new yaesu vx-7r is also close
>to that price (vx-5, and th-f7)!

Buy the VX-7, the TH-F7 often dies, and the VX-5 is replaced by the
VX-7...

>What should I do?
>
>Cor

regards - Ralph

--

Want to get in touch? http://www.radio-link.net/whereisralph.txt

392. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 07:55:18 UTC
From: --Bill-- <exray.is.tired@of.spam>
Message-ID: <vgd1148hr8bq04@corp.supernews.com>
Source record: 113435
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Ralph A. Schmid, DK5RAS wrote:
> "c" <no@spam.com> wrote:
>
>
>>Hello All,
>>
>>I just saw the new yaesu vx-7r is also close
>>to that price (vx-5, and th-f7)!
>
>
> Buy the VX-7, the TH-F7 often dies, and the VX-5 is replaced by the
> VX-7...
>
>
>>What should I do?
>>
>>Cor
>
>
>
>
>
> regards - Ralph
>
Buy 'em both. Sell the loser. Otherwise you'll never realy know.

-BM

393. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 08:01:29 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0685D9.92D40FA4@cwis.net>
Source record: 113436

Reg Edwards wrote:
>

>
> Terminated Beveridges went before WW2.
>
> Have I spelt it right ?

...That was called prohibition. It was later repealed.
'Doc

394. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 08:22:57 UTC
From: Whinging Courier <markonusenetTAKEITAWAY@yahoo.co.uk>
Message-ID: <MPG.19709b3c4fc0808198980f@news.cis.dfn.de>
Source record: 113437
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

In uk.radio.amateur, Ralph A. Schmid, DK5RAS said:

>Buy the VX-7, the TH-F7 often dies, and the VX-5 is replaced by the
>VX-7...

What do you mean "often dies"? I bought a TH-F7 yesterday for no
particular reason (impulse buy) and now I'm not sure if I should regret
it.

Arse.

395. Re: Antenna field strength question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 08:31:44 UTC
From: atkes@general2.asu.edu
Message-ID: <be62dg$5po$1@news.asu.edu>
Source record: 113438

A little simpler equation than the one Roy gave if you know the Gain
(here it is not in dB, so for 0dB the Gain is 1) is from reciprocity:

Matched Cross Section = Gain*lamdba^2/(4*pi)

Assuming the wave matches the polarization of the antenna, the matched
received power is the incident Power/Area times the cross section.

P = Gain*lambda^2/(4*pi)*(Incident Power/area)

A plane wave with rms electric field of E_rms has an incident
Power/Area in SI units of E_rms^2/(mu_0 c), where c is the speed of
light and mu_0 is the permeability of vacuum 4*pi*10^(-7) Newtons/Amperes^2.

Plugging in, using a numerical factor of 3*10^8 m/s for c, mu_0*c has
a numerical value of 120*pi, and solving for E_rms gives

Erms = (1/lambda)*sqrt(480*pi^2*P/Gain)

Comparing with the equation Roy posted, we see that the G factor in
that equation is just Gain/2 for a thin wire, and he verifies that for
the half wave dipole where Gain=1.64 and G is .82.

73 Kevin w9cf

In rec.radio.amateur.antenna Roy Lewallen <w7el@eznec.com> wrote:

: The one critical piece of missing information is the frequency or
: wavelength. Manipulating some equations from King, Mimno, and Wing's
: _Transmission Lines, Antennas, and Waveguides_, the field necessary to
: generate a particular power P in a load connected to a receiving antenna is

: Erms = (1/WL) * sqrt((240*pi^2*P)/G)

: where Erms is the RMS field in V/m, WL is the wavelength in meters, and
: G is a complex function calculated and graphed in the text. (It's f in
: the text; I used G to avoid confusion with frequency.) This is for an
: infinitely thin antenna parallel to the impinging field, terminated with
: the complex conjugate of its feepoint impedance. For a half wave dipole,
: G is about 0.82. But a half wave dipole has a gain of 1.64 relative to
: an antenna with 0 dBi gain. So a field sqrt(1.64) = 1.28 times greater
: would be required for the 0 dBi antenna. Plugging in the numbers,

: Erms = 119.2/WL volts per meter.

: It should be possible to confirm this with NEC-2 by modeling a
: terminated dipole with an applied plane wave source. (EZNEC doesn't have
: the capability to model the plane wave source.)

: Roy Lewallen, W7EL

: MCB wrote:
:> I would be very grateful if someone could answer the following question:
:>
:>
:>
:> For an antenna operating in receive - What field strength present on the
:> antenna will result in an power output of 3W? The gain of the antenna is 1
:> (0dBi) and perfectly matched into 50ohms.
:>
:>

396. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 11:00:26 UTC
From: "Ralph A. Schmid, DK5RAS" <nospam@radio-link.net>
Message-ID: <4rbdgvca9vglco8j8efi5brv0nkmdpk18e@4ax.com>
Source record: 113440
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Whinging Courier <markonusenetTAKEITAWAY@yahoo.co.uk> wrote:

>What do you mean "often dies"? I bought a TH-F7 yesterday for no
>particular reason (impulse buy) and now I'm not sure if I should regret
>it.

The UHF preamp dies if you wear two radios on the same side of your
betl, or if you have two antennae with small distance installed on top
of your roof, one connected to a high power transceiver and the other
one to the F7. Kenwood knows about the problem, they should write this
in the manual...

>Arse.

regards - Ralph

--

Want to get in touch? http://www.radio-link.net/whereisralph.txt

397. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 11:01:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f06b218_5@corp.newsgroups.com>
Source record: 113439

Roy Lewallen wrote:
> It's not obvious to me how you'd get the beams from, say, two coherent
> lasers, to line up exactly superimposed like that, with the exact
> overlayment of the two beams extending from some point to infinity. Can
> you explain in words or direct us to a diagram showing how that could be
> accomplished?

The beam from *one* coherent laser is split into two parts and then re-
combined out of phase in a typical inferometer.

I don't know how it is possible to perfectly collimate two light waves in
free space because I'm fairly ignorant of interferometer hardware. But I
submit to you that collimation of two RF waves within the physical boundaries
of a coaxial transmission line is impossible to avoid. In a transmission line,
all one would have to do is generate the two wave components.

Seems to me, the two wave components happen to be s11*a1 and s12*a2 in the
b1 s-parameter equation. That's how b1 gets to zero, through 100% destructive
interference. Page 16 & 17 of HP's AN 95-1 Application Note on s-parameters
explains the power relationships of all the quantities in the equations and
incidentally, |s11|^2 is the power reflection coefficient looking into the
physical impedance discontinuity from the source side.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

398. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 11:15:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f06b571$1_5@corp.newsgroups.com>
Source record: 113441

Richard Harrison wrote:
> Cecil seems to have trouble seeing that out-of-phase sources produce
> out-of-phase currents in a load. You can be sure that if the load is a
> resistor, that is exactly what happens. Out-of-phase sources produce
> out-of-phase currents in a common resistor.

Are you sure?

Source #1
+--RG1--100V at zero degrees--------------+
| |
| Resistor
| |
+--RG2--100V at 180 degrees---------------+
Source #2

I measure zero voltage across the resistor and zero current through
the resistor. Kirchhoff's laws come to mind.

In the JAVA ap at:
http://micro.magnet.fsu.edu/primer/java/interference/waveinteractions2/

how do you get any current at all when the two signals are of equal
amplitude, equal frequency, and 180 degrees out of phase?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

399. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 11:43:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f06bbf4$1_5@corp.newsgroups.com>
Source record: 113442

Peter Brackett wrote:
> Additionally there is no such thing as a "power reflection coefficient" as
> you have called it.

Peter, please reference HP's Application Note, AN 95-1, page 17.

|s11|^2 = network input (Reflected Power)/(Incident Power)

Sure looks like a power reflection coefficient to me. Quoting the
Ap Note: "The previous four equations (for |a1|^2, |a2|^2, |b1|^2,
|b2|^2) show that s-parameters are simply related to power gain
and mismatch loss, quantities which are *often of more interest*
than the corresponding voltage functions."
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

400. Re: 13 cm antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 12:26:25 UTC
From: Atlas <shf@pandora.eb>
Message-ID: <RtzNa.2020$Jt.369901676@hestia.telenet-ops.be>
Source record: 113444

andy JACKSON heeft geschreven in bericht ...
>please could some one help me i am after a good 13 cms antenna for the use
>on atv,i have reciever at the moment but no metal work what would be the
>best and were to buy from. thanks for looking at this message andy
>2e1klp/m3klp
>
>Take a look at california amplifier antenna's.
They have parabolic grid antenna's of 21 dBi and 24 dBi gain.
It are wide band antenna's for 2.1 GHz till 2,5 GHz.

401. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 12:34:26 UTC
From: Whinging Courier <markonusenetTAKEITAWAY@yahoo.co.uk>
Message-ID: <MPG.1970d62eb7dcb546989815@news.cis.dfn.de>
Source record: 113443
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

In uk.radio.amateur, Ralph A. Schmid, DK5RAS said:

>The UHF preamp dies if you wear two radios on the same side of your
>betl, or if you have two antennae with small distance installed on top
>of your roof, one connected to a high power transceiver and the other
>one to the F7. Kenwood knows about the problem, they should write this
>in the manual...

That's good then, thanks. I won't be suffering from the problem you
describe as this is currently the only radio I possess and I don't have
any erections on the roof.

402. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 12:36:40 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be6gos$t5c$1@slb0.atl.mindspring.net>
Source record: 113445

Yuri: Paul Harvey would be proud of your story. --Peter K1PO

"Yuri Blanarovich" <k3bu@aol.comnoSaddam> wrote in message
news:20030705004526.23578.00000164@mb-m04.aol.com...
> >
> >Never heard of "Impendance"!
> >
> >What?
> >
>
> Peter, Peter
>
> Its "I'm pen dance" - said one pen to another while twisting waves around
the
> undeterminated cooper wire.
> The other pen said: "Just bring the wire through the window, hook it to
the
> antenna tuner also called matcher box, twist the knobs until you have no
Cecil
> reflections and you no need no stinkin' balun or baloney."
> The #1 pen said: "What a bright idea" and they continued in the pen dance
> untill they lost all the energy in the die electric mediuma.
> Now you know the rest of the story.
>
> Bada BUm

403. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 12:41:42 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be6h2alrk1@slb6.atl.mindspring.net>
Source record: 113446

Cecil:

In HP's applicaton note they refer to the magnitude squared of the
reflection coefficient which is *not* the reflection coefficient squared.

i.e. |S11|^2 is definitely not S11^2.

|S11|^2 = S11 x S11* ; i.e. S11 times its' complex conjugate.

--
Peter K1PO

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f06bbf4$1_5@corp.newsgroups.com...
> Peter Brackett wrote:
> > Additionally there is no such thing as a "power reflection coefficient"
as
> > you have called it.
>
> Peter, please reference HP's Application Note, AN 95-1, page 17.
>
> |s11|^2 = network input (Reflected Power)/(Incident Power)
>
> Sure looks like a power reflection coefficient to me. Quoting the
> Ap Note: "The previous four equations (for |a1|^2, |a2|^2, |b1|^2,
> |b2|^2) show that s-parameters are simply related to power gain
> and mismatch loss, quantities which are *often of more interest*
> than the corresponding voltage functions."
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

404. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 13:22:38 UTC
From: c <no@spam.com>
Message-ID: <3f06d86e$0$45380$1b62eedf@news.wanadoo.nl>
Source record: 113448
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Hello All,

Why does kenwood not made a good protection
in the RX front end section after so many years
expiriance?
It must have the same problem when people are in
the fields with contest (hi power).
I do not like the idea to always renember that the th-
f7 is sensetive for that.
It's intresting, I think to download a schematic of
this kenwood handheld by www.mods.dk

But I think to choose for the yaesu VX-5 or the new
VX-7.

What is the difference between them?

Does the VX-7 have something bad, or is het
100% okay?

Cor

"Whinging Courier" <markonusenetTAKEITAWAY@yahoo.co.uk> schreef in bericht
news:MPG.19709b3c4fc0808198980f@news.cis.dfn.de...
> In uk.radio.amateur, Ralph A. Schmid, DK5RAS said:
>
> >Buy the VX-7, the TH-F7 often dies, and the VX-5 is replaced by the
> >VX-7...
>
> What do you mean "often dies"? I bought a TH-F7 yesterday for no
> particular reason (impulse buy) and now I'm not sure if I should regret
> it.
>
> Arse.

405. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 13:44:59 UTC
From: "News.CIS.DFN.DE" <ken.TOPg1itv@ntlworld.com>
Message-ID: <be6kql$1n23c$1@ID-197247.news.dfncis.de>
Source record: 113447
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Whinging Courier" <markonusenetTAKEITAWAY@yahoo.co.uk> wrote in message
news:MPG.1970d62eb7dcb546989815@news.cis.dfn.de...
> In uk.radio.amateur, Ralph A. Schmid, DK5RAS said:
>
> >The UHF preamp dies if you wear two radios on the same side of your
> >betl, or if you have two antennae with small distance installed on top
> >of your roof, one connected to a high power transceiver and the other
> >one to the F7. Kenwood knows about the problem, they should write this
> >in the manual...
>
> That's good then, thanks. I won't be suffering from the problem you
> describe as this is currently the only radio I possess and I don't have
> any erections on the roof.

Have you tried Viagra?

G1ITV

PS Many years ago a GW1*** in Bangor told me he had a rotavator on his
roof! I suppose there isn't a shortage of slates in that are.

406. What is the biggest yaesu forum?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 13:51:04 UTC
From: c <no@spam.com>
Message-ID: <3f06d871$0$45380$1b62eedf@news.wanadoo.nl>
Source record: 113449
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Hello All,

Does some know where the biggest yaesu forum
is?
I know there is a lot on inet but please give me
a URL where lots of yaesu users are with there
comments.

73's Cor

407. Re: What is the biggest yaesu forum?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 14:15:54 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <ibndgv0olhp1s6uhpiqdk9kmruiq1aqtf6@4ax.com>
Source record: 113450
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Sat, 5 Jul 2003 15:51:04 +0200, "c" <no@spam.com> wrote:

>Hello All,
>
>Does some know where the biggest yaesu forum
>is?
>I know there is a lot on inet but please give me
>a URL where lots of yaesu users are with there
>comments.
>
There are a number of Yahoo Groups for various models.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

408. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 14:32:39 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgdodt7i9qna4a@corp.supernews.com>
Source record: 113451

```
That's impending impedance, a virtual quantity.
H.
NQ5H
;^P
"Dick Carroll;" <dixie@townsqr.com> wrote in message
news:be5j8f$p48$0@208.207.71.176...
>
>
> Peter Brackett wrote:
>
> > Mich:
> >
> > Never heard of "Impendance"!
> >
>
> What? U mever jeard of impendance, Pete? I thot that wuz
> impedance you hadn't figured out what was yet.
>
```

409. Re: Travelling Wave HF dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 15:19:33 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vgdr14ssgk46bc@corp.supernews.com>
Source record: 113452

I too once spent a lot of effort on trying to optimize rhombic antennas.
The words below should be firmly placed in everyone's mind.
73 Mac N8TT
--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Wes Stewart" <n7ws@_arrl.net> wrote in message
<snip>
>
> I am not a proponent of rhombics, in fact the plethora of minor lobes
> in most designs is awful. Also, the wide bandwidth properties are an
> illusion if the pattern is a consideration.
>
> I spent several hours optimizing the design and if minor lobes are a
> consideration (for EME they are), it is actually quite critical. That
> said, 23 dB is a lot of gain, even throwing away 37% of the power.

410. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 15:29:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f06f0df_4@corp.newsgroups.com>
Source record: 113453

Peter Brackett wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>>Peter, please reference HP's Application Note, AN 95-1, page 17.
>>|s11|^2 = network input (Reflected Power)/(Incident Power)
>>Sure looks like a power reflection coefficient to me.

> In HP's applicaton note they refer to the magnitude squared of the
> reflection coefficient which is *not* the reflection coefficient squared.
>
> i.e. |S11|^2 is definitely not S11^2.

Who said it was? That's why I put magnitude marks around s11 above.
As you probably know, RHO is often used without a gamma angle so
it is common to see RHO^2 as a power reflection coefficient. If
it will make you feel better, I'll try to remember to put magnitude
marks around |RHO|^2 from now on.

From the IEEE Dictionary: "reflection coefficient - ... the ratio
of some quantity associated with the reflected wave to the corresponding
quantity in the incident wave. Note: The reflection coefficient may
be different for different associated quantities, and the chosen
quantity must be specified. ... Examples of other quantities are
POWER and current." emphasis mine.

So your original assertion:

> Additionally there is no such thing as a "power reflection coefficient"
> as you have called it.

is proven false by the IEEE Dictionary. Don't you just hate it when
that happens? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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411. Ground plane and dipole antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 15:34:23 UTC
From: captainvideo462002@yahoo.com
Message-ID: <d980bc2c.0307050734.4bce8759@posting.google.com>
Source record: 113454

I operate a 110 Watt FM low band station for business use on 43.00 MHZ. When we
installed the system 12 years ago I cut a quarter wave dipole made from #12 solid bare copper wire, fed it with RG8U and suspended it from a wooden mast off my chimney at an angle of approximately 30 degrees between two plastic insulators. Having had no SWR meter at the time I simply cut it to its
theoroetical length and hoped for the best. It was only intended to be a temporary arrangement but it has worked so well through the years, affording us the coverage we needed that there was never any reason to go much further. Recently, we have expanded our operating territory and would really appreciate a little more coverage. So with this in mind, I borrowed an MFJ SWR/freq. meter from a friend and took a look at at my antenna at the transmitter end. According to it, the length seemed to be a bit too long, (which surprised me since I know my original calculations were correct), so I trimmed it, (a good 6 or 7 inches) to obtain an SWR of 1:1.
At the same time I constructed a second, ground plane antenna. This time my coax is Mil spec RG214U which terminates in a PL259 at the antenna end. This then screws onto a female chassis mount connector and is mounted inside a
PVC pipe. There is a #12 insulated copper wire cut to quarter wavelength which runs up inside the pipe as the active element. The pipe is capped off with RTV. Coming off the female connector, and through the pipe are 4 ground radials which are cut to .95 quarter wavelength. These are again connected to plastic insulators and tied off and droop at an angle of approximately 45 degrees, which according to the ARRL Antenna Book, provides a closer match for a vertical antenna to a 50 ohm line. When I performed the SWR check on this newly constucted antenna connected to the transmission line at the transmitter end, It seemed to resonate at around 39MHZ. which was certainly far from what I had expected. I did trim it accordingly, trying to be certain to leave the ground radials at 95 percent of the finished center conductor length, and eventually got the SWR as measured at the transmitter end down once again to very near 1:1. So in theory this should have been it. Or so I thought.....
Now both antennas go through a coaxial switch and feed my base station. And
although they both work, the old crappy dipole still seems to perform better than the ground plane. However I should add that since trimming the dipole I'm now questioning if its still as good as it was before I messed with it. I have tested both antennas between a distant mobile at different locations on more than one occaision and I seem to always find that switching to the

dipole always seems better. The dipole hangs from a wooden mast not quite vertical but as I said at a slight angle. Both antennas are at the same height and on the same roof about 10 feet apart. It seemed to me that no matter what, a good SWR reading at the transmitter end would mean maximum power transfer to the load, (antenna), or so I thought.
Recently I spoke with a friend who's been in the two way businees for years. I told him about my situation and he said that its very possible that my original by the book lengths were probably correct. He advised me to recut the antennas to theoretical length, and tune for best SWR first right at the antennas. At that point he suggested connect the transmission line and see what it looks like. Depending on the transmission line's length, he said that the line could sometimes be resonating on the operating freq. The SWR meter would see the line possibly resonant at the operating freq, and so it and the combination of an incorrect length antenna would fool it into thinking, (for want of a better
term), that everything is OK when of course its not? I do understand the concept but I'm not exactly certain of the correct procedure to use to properly address this. He suggested that I measure the lengths of my lines and confirm that neither one is cut to some multiple of my operating frequency. That would be nice to be able to do however, but since both are now run through the house and fished through the walls this is now impossible.
How does this sound: I recut both my antennas to theoretical lengths and then check for proper SWR using a two foot piece of coax right at each antenna. At that point I can tweak the element's lengths for optimum. When this is finished, hopefully I'll have two properly cut antennas for my operating frequency. Now he says that as long as my transmission line is not inadvertantly cut so as to fall as some multiple of my operating wavelength, and become the resonant element, I should be all set. But even better yet, at this point, if I terminate the antenna end of my transmission line with a dummy load and check its SWR, and as long as my feed line is flat at the operating freq then I should be able to connect it to the antenna and not affect my previous SWR measurement? In a perfect world then everything should be fine? Does this sound like a plan, or if anyone might have anything else to add, I'd really appreciate it.
I appologize for the long windedness of this post but I wanted to provide as much information as possible.
Thanks very much for reading it and for any additional help you may be able to offer. Lenny Stein.
---

412. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 15:54:07 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgdt6hgennseae@corp.supernews.com>
Source record: 113455

rotflmao
"Jim Higgins" <UseAddressBelow@pandora.orbl.org> wrote in message
news:pkqdgv4oqjhha7o8e8rljsfke0t9s0jh2a@4ax.com...
> On Fri, 4 Jul 2003 19:09:59 -0400, in
> <be51g8ssh1@slb2.atl.mindspring.net>, "Peter Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Mich:
> >
> >Never heard of "Impendance"!
> >
> >What?
>
> Impendance is the instantaneous risk that your antenna will fall
> down. It's a characteristic that springs of necessity from the
> rule that no antenna is big enough if it stays up indefinitely.
>
> --
> Jim Higgins, quasimodo AT yahoo DOT com
> icbm: 33.55.34N, 80.24.21W

413. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 16:39:27 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be6v04$1c1$1@slb6.atl.mindspring.net>
Source record: 113456

Cecil:

[snip]
> > Additionally there is no such thing as a "power reflection coefficient"
> > as you have called it.
>
> is proven false by the IEEE Dictionary. Don't you just hate it when
> that happens? :-)
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

Yes!

But... as you well know I often take great exception to that silly, sloppy, inexcuseable pretender of a technical dictionary. IEEE should withdraw that dictionary from circulation, it is an embarassment to our profession.

--
Peter K1PO
peter.brackett@ieee.org

414. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 16:56:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f070555$1_7@corp.newsgroups.com>
Source record: 113457

Peter Brackett wrote:
> But... as you well know I often take great exception to that silly, sloppy,
> inexcuseable pretender of a technical dictionary. IEEE should withdraw that
> dictionary from circulation, it is an embarassment to our profession.

For what's its worth, some QST articles in the 1970's talked about
the power reflection coefficient, RHO^2.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

415. Re: Ground plane and dipole antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 17:07:01 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F0705A2.CEFDA072@shaw.ca>
Source record: 113458

Lenny wrote:
>
> I operate a 110 Watt FM low band.....

The old adage "If it works, don't fix it!"
This is especially true for antennas.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

416. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 17:10:57 UTC
From: Dave Holford <holford@sympatico.ca>
Message-ID: <3F0706A1.F6078678@sympatico.ca>
Source record: 113461

Glenn Lewis wrote:
>
> Cast me in that lot of operators who moved into a new QTH with outdoor
> antenna restrictions! Has anyone come across (or actually used) an HF
> antenna design for the attic that got reasonably good operating
> results? Thanks for reading.
>
> KB5Q

A while back I was in that situation and for a year or so ran a multi-band dipole - several dipoles with a common feedpoint. I also used a 'slinky' dipole with reasonable results on 40m. Although it could be loaded up on 80m results were not very good on that band. The only time I had a problem was on 15m - running 100W - which would result in total loss of all sound on the stereo on the floor below; turned out the speaker leads were resonant near 15M and aligned with the antenna; changed the speaker positions to move the resonance and the problem was resolved.

Dave
VE3HLU

417. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 17:13:20 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f0706a3@shknews01>
Source record: 113459

The guy did not spell the term correctly -
we got the point. So, what's the big deal ?

Now, how about some helpful answers
- if you have any ...

Nic.

"Michalkun" <buranko2000@yahoo.com> wrote in message
news:Xns93AE64FC092E9michalkunyahoocom@128.233.192.251...
> Does anyone know how to find out wire's impendance so that I can match it
> to appropriate balun? I want to make an randomwire antenna but I'm not
> sure what balun to use, since no idea about the wire's impendance. I want
> to use copper wire.

418. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 17:16:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vge205rt2je21f@corp.supernews.com>
Source record: 113460

Let's stop right there so those of us trying to understand won't get confused.

You posed as an example of your question the web site showing interference between two light waves, "extending out to infinity", and wondering where the energy went. Good question. But it's not a good question if there's no way this situation could ever occur.

Let's do one thing at a time, ok? Before going on to transmission lines, scattering parameters, and whatever, let's see if the example you gave is even possible to accomplish.

Some of the participants in this thread are apparently familiar with optics. Hopefully, one of them can answer the following: Is it indeed possible to perfectly collimate two light waves, traveling in the same direction, in free space -- either from two separate sources or from a single source -- so that the two travel together "to infinity"? And do it without something happening like a reflection back from the point at which the two out of phase beams are combined?

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> It's not obvious to me how you'd get the beams from, say, two coherent
>> lasers, to line up exactly superimposed like that, with the exact
>> overlayment of the two beams extending from some point to infinity.
>> Can you explain in words or direct us to a diagram showing how that
>> could be accomplished?
>
>
> The beam from *one* coherent laser is split into two parts and then re-
> combined out of phase in a typical inferometer.
>
> I don't know how it is possible to perfectly collimate two light waves in
> free space because I'm fairly ignorant of interferometer hardware. But I
> submit to you that collimation of two RF waves within the physical
> boundaries
> of a coaxial transmission line is impossible to avoid. In a transmission
> line,
> all one would have to do is generate the two wave components.
> . . .

419. Re: Impendance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 17:45:12 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F070E94.46E4AF7F@shaw.ca>
Source record: 113462

"Nic. Santean" wrote:
>
> The guy did not spell the term correctly -
> we got the point. So, what's the big deal ?
>
> Now, how about some helpful answers
> - if you have any ...
>
> Nic.
>
The answers were given -- not enough information from his
post, and a couple of things to try.

--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

420. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 19:09:48 UTC
From: John DeGood <nu3e@arrl.net>
Message-ID: <Rt-cnerkFbSkv5qiXTWJjg@comcast.com>
Source record: 113463

I use a homebrew 6-band trap dipole for 10, 15, 20, 30, 40, and 80
meters. The series traps considerably shorten the antenna allowing it
to fit in a typical attic. For details see:

http://users.tellurian.com/jdegood/coaxtrap/

73,

John NU3E

Glenn Lewis wrote:

> Cast me in that lot of operators who moved into a new QTH with outdoor
> antenna restrictions! Has anyone come across (or actually used) an HF
> antenna design for the attic that got reasonably good operating
> results? Thanks for reading.
>
> KB5Q

421. Re: Ground plane and dipole antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 19:23:43 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <5dqcnZTPG_tfuJqiXTWJkg@comcast.com>
Source record: 113464

Lenny,

Some comments here.

When you cut the antenna by book, what book? The accepted length for a half wave dipole in feet is 468/F(MHz). That is 10.9 feet, 5.45 feet on each side. You said quarter wave - didn't mean that, did you? Your vertical radiator, and each of the ground plane wires should also be 5.45 feet.

RG213 is mil spec all right, WW2 mil. You might pick up a couple of db by switching to LMR400 coax. (same size)

I assume the mobile units use vertical antennas. Any horizontal components your antenna puts out will be attenuated by as much as 20 db relative to the vertical.

At 10 feet separation, it is quite possible that there is interaction between the antennas. Also, when you added the switch box, did you reverse the phase of the original antenna? I don't think there is any theory to back this up, but I would connect the center conductor of the coax to the high half of the dipole.

By conventional wisdom, the vertical should work better with vertical mobile units. You might try getting it higher up. You could use the radials as guys, with insulators at 5.45 feet. Forget the PVC.

The impedance of a dipole is about 70 Ohms, and the GP vertcal should be about 50 Ohms with the drooping radials; so, at resonance your dipole SWR would be about 1.5:1, not 1:1. Trimming it closer to 1 should not hurt anything though. All that PVC pipe is probably lowering the resonance of the GP.

Tam/WB2TT
"Lenny" <captainvideo462002@yahoo.com> wrote in message
news:d980bc2c.0307050734.4bce8759@posting.google.com...
> I operate a 110 Watt FM low band station for business use on 43.00
> MHZ.

422. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 20:30:16 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <be7cgsorr1@slb9.atl.mindspring.net>
Source record: 113465

Cecil:

I beg to differ from the IEEE's dictionary.

"The Reflection Coefficient" rho is complex not real.

rho= (R - Z)/(R + Z) is complex since the reference impedance R(p) is sometimes complex and most certainly the load impedance Z(p) is complex in the general case.

In fact in the general case considering the complex frequency p = s + jw, [p is Heaviside's operator or the LaPlace Transform frequency variable.] R(p), Z(p) and rho(p) are all complex functions of a complex variable.

For real sinusoidal angular [radian] frequencies w = 2*pi*f [Where f is in Hz] the reflection coefficient rho may be expressed as:

rho(jw) = [R(jw) - Z(jw)]/[R(jw) + Z(jw)] = B(jw)/A(jw)

Where A(jw) and B(jw) are the Fourier Transforms of the incident and reflected "voltage waves".

Now taking the logarithm of the complex rho we have the usual definitions:

ln[rho(jw)] = ln|rho(jw)| + j arctan[Im{rho(jw)}/Re{rho(jw)}] = Ae(w) + jphie(w):

Where Ae(w) is the "echo attenuation in Np, often called the return loss, and phie(w) is the echo phase often called the return phase.

A quantity that might be of interest to *you*, and which I believe you would have fun exploring, is the trigonometry free derivative of the echo phase with respect to frequency, called the "echo group delay" tgre(w):

tgre(w) = -d [phie(w)]/dw

tgre(jw) is always real [not complex] and has units of seconds and is called the "echo delay" it is actually the "group delay" of the echo returned in B when rho is driven by A at the discontinuity where R meets Z.

Wonder what tgre(jw) looks like?

Interesting, no?

--
Peter K1PO
Indialantic By-the-Sea, FL.

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f070555$1_7@corp.newsgroups.com...
> Peter Brackett wrote:
> > But... as you well know I often take great exception to that silly,
sloppy,
> > inexcuseable pretender of a technical dictionary. IEEE should withdraw
that
> > dictionary from circulation, it is an embarassment to our profession.
>
> For what's its worth, some QST articles in the 1970's talked about
> the power reflection coefficient, RHO^2.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

423. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 20:34:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f07388a_6@corp.newsgroups.com>
Source record: 113467

Roy Lewallen wrote:
> You posed as an example of your question the web site showing
> interference between two light waves, "extending out to infinity", and
> wondering where the energy went. Good question. But it's not a good
> question if there's no way this situation could ever occur.

Point is, it can occur in a transmission line which is what this
newsgroup is about. Since most of this information seems to be
contained in the field of optics, I'm asking a "what if" question.
Einstein asked a lot of "what if" questions.

> Is it indeed
> possible to perfectly collimate two light waves, traveling in the same
> direction, in free space -- either from two separate sources or from a
> single source -- so that the two travel together "to infinity"?

Point is, it is possible to conceptualize it and it can actually occur in
a transmission line where the coax does the necessary collimating.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

424. rsgb special offer join rsgb for ï¿½1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 20:37:29 UTC
From: g3zhi@hotmail.com
Message-ID: <3f092ad6.1247158@news.btinternet.com>
Source record: 113466

Join the Radio Society of Great Britain for ï¿½1.05 or 2 US dollars

Normal membership cost is ï¿½42.50 but if you join in July

with the RSGB special offer Membership will cost you ï¿½1.05

Thatï¿½s a massive saving of ï¿½41.45 pounds!

For that you get one years membership of RSGB which includes the RSGB
national radio magazine Radcom.

Go to http://www.qsl.net/g3zhi/rsgb.jpg for the application form.

http://www.qsl.net/g3zhi

425. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 20:50:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f073c35_6@corp.newsgroups.com>
Source record: 113468

Peter Brackett wrote:
> I beg to differ from the IEEE's dictionary.

Exactly what do you differ with them about? You didn't re-quote
the definition so I have no idea what you are talking about.

> "The Reflection Coefficient" rho is complex not real.

The reflection coefficient, rho, is often close enough to real
to be considered real. The power reflection coefficient is not
complex. The power reflection coefficient is |RHO|^2.

> rho= (R - Z)/(R + Z) is complex since the reference impedance R(p) is
> sometimes complex and most certainly the load impedance Z(p) is complex in
> the general case.

"Sometimes complex" but not always. The two characteristic impedances at
an impedance discontinuity between two transmission lines are usually
considered close enough to real to be considered real. It is indeed real
if the transmission lines are lossless, a common assumption. That greatly
simplifies the calculations and the power reflection coefficient becomes
very useful.

As you probably know, a lossless analysis is often sufficient for the
purpose. I analyze all my open-wire transmission lines as lossless
which is close enough for engineering accuracy. You must be a physicist. :-)

As far as I can determine, nothing in your posting disagreed with the
definition of "reflection coefficient" that I posted from the IEEE
Dictionary. Essentially all the IEEE definition said was that a voltage
reflection coefficient exists, a current reflection coefficient exists,
and a power reflection coefficient exists. Have another Mint Julep and
please chill out.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

426. What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 20:54:35 UTC
From: Batman <kg0wx@yahoo.com>
Message-ID: <fWGNa.427435$3n5.125085@news2.central.cox.net>
Source record: 113369

I'm planning on putting up a 130' inverted V fed with 450 ohm ladder line. At the radio end will be my trusty Yaesu FT-817 feeding to a LDG Z11 auto tuner. The tuners output will be coupled to the ladder line with a 4:1 balun. So far, so good.

Here's the sticking point: Isn't a 4:1 balun a mismatch for 450 ohm ladder line? I'm no expert (haven't hit the books since I got my ticket) but a 4:1 balun running on coax (50x4=200) seems a poor match for 450 ohm ladder line.......

Does it matter? Why does nobody make 8:1 baluns?

72's de Ken KG0WX

427. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 20:59:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgef268ef1p869@corp.supernews.com>
Source record: 113370

No, the example you proposed was for two light beams. You gave us the
URL with the example, and wondered where the energy went.

My question is, can the example you presented actually happen?

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> You posed as an example of your question the web site showing
>> interference between two light waves, "extending out to infinity", and
>> wondering where the energy went. Good question. But it's not a good
>> question if there's no way this situation could ever occur.
>
>
> Point is, it can occur in a transmission line which is what this
> newsgroup is about. Since most of this information seems to be
> contained in the field of optics, I'm asking a "what if" question.
> Einstein asked a lot of "what if" questions.
>
>> Is it indeed possible to perfectly collimate two light waves,
>> traveling in the same direction, in free space -- either from two
>> separate sources or from a single source -- so that the two travel
>> together "to infinity"?
>
>
> Point is, it is possible to conceptualize it and it can actually occur in
> a transmission line where the coax does the necessary collimating.

428. tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 21:12:53 UTC
From: BB <billybob@NOSPAMr3dnecks.nf.net>
Message-ID: <3F073F55.B0400907@NOSPAMr3dnecks.nf.net>
Source record: 113371

I've got a 20ft aluminum tower with a 10 steel mast on the top of it with a 2m antenna encased in pvc pipe. I'm running coax through a conduit pipe in the side of the house into my shack. What's the cheapest way to ground this setup for lightening? I've got a 6ft copper pipe and 40 feet of aluminum grounding wire. Do i just drive the pipe into the ground, wrap the groundwire around it, run it up the tower and wrap it around the mast?

thanks in advance for any advice anyone has.

429. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 21:54:04 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <AD2dnatE5f_G1JqiRTvUqg@crocker.com>
Source record: 113372

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f073c35_6@corp.newsgroups.com...
> "Sometimes complex" but not always. The two characteristic impedances at
> an impedance discontinuity between two transmission lines are usually
> considered close enough to real to be considered real. It is indeed real
> if the transmission lines are lossless, a common assumption. That greatly
> simplifies the calculations and the power reflection coefficient becomes
> very useful.

oh, so you are aloud to make simplifying assumptions when it is convenient
for you because you don't want to use the complex power and complex
reflection coefficient... but you won't let us make the steady state
assumptions that are much more widely used and accepted?!?!?!

430. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 21:55:27 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <UKSdna6PAesY1JqiRTvUpQ@crocker.com>
Source record: 113373

"Batman" <kg0wx@yahoo.com> wrote in message
news:fWGNa.427435$3n5.125085@news2.central.cox.net...
> I'm planning on putting up a 130' inverted V fed with
> 450 ohm ladder line. At the radio end will be my trusty
> Yaesu FT-817 feeding to a LDG Z11 auto tuner. The
> tuners output will be coupled to the ladder line with a
> 4:1 balun. So far, so good.
>
> Here's the sticking point: Isn't a 4:1 balun a mismatch
> for 450 ohm ladder line? I'm no expert (haven't hit the
> books since I got my ticket) but a 4:1 balun running on
> coax (50x4=200) seems a poor match for 450 ohm
> ladder line.......
>
> Does it matter? Why does nobody make 8:1 baluns?

the tuner should be able to tune that so the radio is happy. if the
impedance is out of range of the tuner then maybe you could try a higher
ratio balun.

431. Re: Ground plane and dipole antenna construction

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 22:02:45 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <veGcnUtENPDm1pqiXTWJgA@ctc.net>
Source record: 113374

> I operate a 110 Watt FM low band station for business use on 43.00
> MHZ. When we
> installed the system 12 years ago I cut a quarter wave dipole made
> from #12 solid bare copper wire, fed it with RG8U and suspended it
> from a wooden mast off my chimney at an angle of approximately 30
> degrees between two plastic insulators. Having had no SWR meter at the
> time I simply cut it to its
> theoroetical length and hoped for the best. It was only intended to be
> a temporary arrangement but it has worked so well through the years,
> affording us the coverage we needed that there was never any reason to
> go much further. Recently, we have expanded our operating territory
> and would really appreciate a little more coverage. So with this in
> mind, I borrowed an MFJ SWR/freq. meter from a friend and took a look
> at at my antenna at the transmitter end. According to it, the length
> seemed to be a bit too long, (which surprised me since I know my
> original calculations were correct), so I trimmed it, (a good 6 or 7
> inches) to obtain an SWR of 1:1.

I hope you mean a 1/2 wave dipole. You did not state how long the coax is. If very long then the swr will be way lower than the antenna actually is. If a halfwave antenna and 50 ohm coax you should see a swr of 1.5 to 1. The 1/2 wave antenna is 70 ohms if not too close to anything. YOur mistake is using the MFJ stuff without understanding what is going on and changing a working system. YOu can cut the antenna to the length where the swr is the lowest at the frequency you are usiing. If cutting an antenna for swr, sweep a few khz to mhz to each side of the desired frequency.

432. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 22:17:26 UTC
From: "G.Beat" <now9gb@spam.comcast.net>
Message-ID: <W7INa.15436$Ey6.6174@rwcrnsc52.ops.asp.att.net>
Source record: 113375

Glen E. Zook, K9STH regularly gives seminars and workshops on both RF grounding
and lightning protection. [These are 2 distinct subjects and each require separate treatment]

His web site has articles and instructional diagrams
http://home.comcast.net/~zcomco/

g. beat
w9gb
--
Do not use Reply.
Reply only through ARRL forwarding service to W9GB

"BB" <billybob@NOSPAMr3dnecks.nf.net> wrote in message
news:3F073F55.B0400907@NOSPAMr3dnecks.nf.net...
> I've got a 20ft aluminum tower with a 10 steel mast on the top of it
> with a 2m antenna encased in pvc pipe. I'm running coax through a
> conduit pipe in the side of the house into my shack. What's the
> cheapest way to ground this setup for lightening? I've got a 6ft copper
> pipe and 40 feet of aluminum grounding wire. Do i just drive the pipe
> into the ground, wrap the groundwire around it, run it up the tower and
> wrap it around the mast?
>
> thanks in advance for any advice anyone has.
>
>

433. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 22:23:18 UTC
From: jgboyles@aol.com
Message-ID: <20030705182318.25647.00000143@mb-m21.aol.com>
Source record: 113376

>I'm planning on putting up a 130' inverted V fed with
>450 ohm ladder line. The
>tuners output will be coupled to the ladder line with a 4:1 balun.

Hi Ken, If you are to use this very fine antenna on all bands, don't try to impedance match with a 4:1 balun. The problem is the antenna almost never presents a 450 ohm load to the tuner, so the 4:1 ratio can be anything. You will do the impedance matching with the auto tuner, the only reason you should a require a balun is for feedline radiation. Feedline radiation can cause a number of problems, or it can be no problem at all.
Your auto tuner should work if you run the 450 ohm line directly to it. If you feel you need a balun, there are several 1:1 choices that work quite well.

73 Gary N4AST

434. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 22:37:28 UTC
From: jgboyles@aol.com
Message-ID: <20030705183728.25647.00000145@mb-m21.aol.com>
Source record: 113377

>the tuner should be able to tune that so the radio is happy. if the
>impedance is out of range of the tuner then maybe you could try a higher
>ratio balun.

Hi Dave, Why should he be trying to impedance match with a balun, especially if he wants to operate on different bands, as most Hams do with a 130' dipole fed with ladder line.
The 4:1 balun or any other ratio other than 1:1 doesn't make much sense. A 130' dipole fed with ladder line, 1:1 balun and an auto tuner will work many bands. If it won't work your favorite band change the feedline a couple of feet, and then it will.
73 Gary N4AST

435. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-05 23:05:06 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <r7legv4ir593kk6qdoglghm917qm613fe2@4ax.com>
Source record: 113378

On Sat, 05 Jul 2003 20:54:35 GMT, "Batman" <kg0wx@yahoo.com> wrote:

>I'm planning on putting up a 130' inverted V fed with
>450 ohm ladder line. At the radio end will be my trusty
>Yaesu FT-817 feeding to a LDG Z11 auto tuner. The
>tuners output will be coupled to the ladder line with a
>4:1 balun. So far, so good.
>
>Here's the sticking point: Isn't a 4:1 balun a mismatch
>for 450 ohm ladder line? I'm no expert (haven't hit the
>books since I got my ticket) but a 4:1 balun running on
>coax (50x4=200) seems a poor match for 450 ohm
>ladder line.......
>
>Does it matter? Why does nobody make 8:1 baluns?
>
>72's de Ken KG0WX
>

Ken,

The balun impedance ratio is not particularly important on the system you describe. The reason being is that the impedance presented at the balun in seldom ever 450 Ohms. For example, here is the results of NEC model run for a 130 foot dipole mounted 50 feet high over average ground, fed with 65 feet of 450-Ohm window line.

Impedance at the antenna fed point.

Freq (MHz) Z Angle
1.900 1,078.42 -89.63ï¿½
3.750 95.03 37.13ï¿½
7.150 4,575.23 20.04ï¿½
10.125 550.00 -79.15ï¿½
14.175 2,522.73 52.01ï¿½
18.114 324.90 -67.39ï¿½
21.225 1,436.25 58.31ï¿½
24.930 731.19 71.76ï¿½

Impedance at transmitter's end of the transmission line.

1.900 79.69 -87.94ï¿½
3.750 734.64 -68.39ï¿½
7.150 668.20 -77.93ï¿½
10.125 1,535.40 68.10ï¿½
14.175 269.59 -74.96ï¿½

18.114 260.60 -63.80ï¿½
21.225 83.79 -27.45ï¿½
24.930 238.54 -68.61ï¿½
29.000 530.03 69.29ï¿½

As you can see, the balun never sees an impedance of 450-Ohms. In fact, chances of the transmitter's end of the transmission line ever presenting a 450-Ohm (R450 +j0) impedance is right up there with wining the Readers Digest sweepstakes. <g>

73,
Danny, K6MHE

436. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 00:03:26 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <be7ot9$6mj$1@slb9.atl.mindspring.net>
Source record: 113379

"Batman" <kg0wx@yahoo.com> wrote in message
news:fWGNa.427435$3n5.125085@news2.central.cox.net...
> I'm planning on putting up a 130' inverted V fed with
> 450 ohm ladder line. At the radio end will be my trusty
> Yaesu FT-817 feeding to a LDG Z11 auto tuner. The
> tuners output will be coupled to the ladder line with a
> 4:1 balun. So far, so good.
>
> Here's the sticking point: Isn't a 4:1 balun a mismatch
> for 450 ohm ladder line? I'm no expert (haven't hit the
> books since I got my ticket) but a 4:1 balun running on
> coax (50x4=200) seems a poor match for 450 ohm
> ladder line.......
>
> Does it matter? Why does nobody make 8:1 baluns?
>
> 72's de Ken KG0WX
>
>

The impedeance will vary considerably over the 80-10 meter range. the 4 to
1 enables a best compromise for it all.

Dan/W4NTI

437. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 00:34:51 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <wHednX_0O9ZF85qiRTvUqQ@crocker.com>
Source record: 113380

"JGBOYLES" <jgboyles@aol.com> wrote in message
news:20030705183728.25647.00000145@mb-m21.aol.com...
> >the tuner should be able to tune that so the radio is happy. if the
> >impedance is out of range of the tuner then maybe you could try a higher
> >ratio balun.
>
> Hi Dave, Why should he be trying to impedance match with a balun,
especially
> if he wants to operate on different bands, as most Hams do with a 130'
dipole
> fed with ladder line.
> The 4:1 balun or any other ratio other than 1:1 doesn't make much sense.
A
> 130' dipole fed with ladder line, 1:1 balun and an auto tuner will work
many
> bands. If it won't work your favorite band change the feedline a couple
of
> feet, and then it will.
> 73 Gary N4AST

i'm assuming from the description that his tuner doesn't have a balanced input so to feed it properly he would need some kind of balun. the exact ratio of the balun doesn't really matter as long as it gets something in the range that the tuner will handle.

438. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 00:57:15 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0773EB.59D558D2@cwis.net>
Source record: 113381

'BB',
40 feet of wire and a ground rod won't make a very good
electrical ground for your tower. But it's a good start.
The ground rod connected to your tower may satisfy your local
electrical code, but it's a 'p' poor ground for lightning
safety considerations. The 40 feet of wire you already have
plus a couple hundred feet more, laid out as radials (then
connected to the tower) will work much 'better'.
If the tower is metal and the mast (or antenna) is well
connected to the tower, there's no need to run a seperate
ground wire up the tower. It probably won't hurt a thing
but it also isn't helping much either.
Just for 'grins', go take a look at a copy of the National
Electrical Codes (NEC) at your local library. Lots of good
and interesting information in it...
'Doc

439. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 02:03:43 UTC
From: Alexander Schewelew <dl1pbd@gmx.net>
Message-ID: <be80ed$24srk$1@ID-34767.news.dfncis.de>
Source record: 113382

> Impedance at transmitter's end of the transmission line.
>
> 1.900 79.69 -87.94°
> 3.750 734.64 -68.39°
> 7.150 668.20 -77.93°
> 10.125 1,535.40 68.10°
> 14.175 269.59 -74.96°
> 18.114 260.60 -63.80°
> 21.225 83.79 -27.45°
> 24.930 238.54 -68.61°
> 29.000 530.03 69.29°

Not correct!

It is some better:

Fr R jX Z
1.900 0.65 -185 185
3.750 1604 -1513 2204
7.150 1055 1836 2117
10.125 41 84 93.5
14.175 196 802 825
18.114 130 323 348
21.225 135 418 439
24.930 58 -14 59.7
29.000 200 516 553

73,
Alex

440. Re: Best Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 02:12:12 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <es0fgvon9lo656lr79emo7hd81a5k649jd@4ax.com>
Source record: 113383

On Fri, 04 Jul 2003 02:33:37 GMT, paularmes@cox.net wrote:

>Hi,
>I just got my general license.
>I am limited on space but will be able to mount an antenna about 6 feet
>above my roofline. Radials are not a possibility because of structural and
>aesthetic issues.
>I have a Icom 746Pro.
>I would like a multiband compact beam or quad or vertical.
>I will not be using an amplifier apart from the transceiver.
>What would you recommend?
>Thanks,
>Paul Armes

Put up a 6 foot pole. Get some #26-guage black insulated wire from The
Wireman (see his web site). Make an inverted-v dipole. No one will see
the wire, just the pole. Feed the dipole with 300 ohm Radio Shack
clear-plastic twinlead. Tune the whole thing with your built-in tuner,
or an external tuner, if needed.

Put a little 6/2 meter beam on the pole, and brag to your neighbors
about your great "tv reception."

Bob
k5qwg

441. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 02:40:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f078e4b$1_4@corp.newsgroups.com>
Source record: 113384

Batman wrote:
> Here's the sticking point: Isn't a 4:1 balun a mismatch
> for 450 ohm ladder line? I'm no expert (haven't hit the
> books since I got my ticket) but a 4:1 balun running on
> coax (50x4=200) seems a poor match for 450 ohm
> ladder line.......

As an all HF band antenna, your feedline will always carry
a relatively high SWR. Therefore, you will *NEVER* see that
Z0=450 ohms. In my opinion, you would be better off with
a 1:1 choke, like a W2DU balun.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

442. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 02:44:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f078f36$1_4@corp.newsgroups.com>
Source record: 113385

Roy Lewallen wrote:

> No, the example you proposed was for two light beams. You gave us the
> URL with the example, and wondered where the energy went.
>
> My question is, can the example you presented actually happen?

I've already said that I am not familiar enough with interferometer
hardware to know the answer to that question. But the point is that
even if it cannot happen with light in free space, it can happen with
RF in a coaxial transmission line where collimation is forced on the
waves by the physical configuration. In fact, not being able to
accomplish that feat with light in free space may be the reason it is
not understood for transmission lines.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

443. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 02:49:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f07905d_4@corp.newsgroups.com>
Source record: 113386

David Robbins wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> news:3f073c35_6@corp.newsgroups.com...
>
>>"Sometimes complex" but not always. The two characteristic impedances at
>>an impedance discontinuity between two transmission lines are usually
>>considered close enough to real to be considered real. It is indeed real
>>if the transmission lines are lossless, a common assumption. That greatly
>>simplifies the calculations and the power reflection coefficient becomes
>>very useful.
>
> oh, so you are aloud to make simplifying assumptions when it is convenient
> for you because you don't want to use the complex power and complex
> reflection coefficient... but you won't let us make the steady state
> assumptions that are much more widely used and accepted?!?!?!

You are perfectly free to use whatever simplifying assumptions you choose.
All I am after is the physics laws underlying those simplified assumptions.
I'm not trying to change anything. I am trying to understand something.
I said this is *NOT* a new and different system of analysis. The only
purpose of my postings are to try to track the energy components
around an impedance discontinuity in a transmission line. What is wrong
with me being curious about that?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

444. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 02:54:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f079192_4@corp.newsgroups.com>
Source record: 113387

David Robbins wrote:
> the tuner should be able to tune that so the radio is happy. if the
> impedance is out of range of the tuner then maybe you could try a higher
> ratio balun.

If the SWR is 20:1, the impedance presented to the tuner might be
450/20 = 22.5 ohms. A 4:1 balun will try to bring that down to
5.6 ohms, not a good match. A higher ratio balun would be an even
worse match. The impedance can be out of range of the tuner on
the *low* end.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

445. Re: rsgb special offer join rsgb for £1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 03:05:03 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030705230503.13495.00000267@mb-m01.aol.com>
Source record: 113388

For those that are interested, from the message headers:

X-Complaints-To: news-complaints@lists.btinternet.com

446. Re: ground rod

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 03:10:54 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <2rMNa.113953$R73.13079@sccrnsc04>
Source record: 113389

Spencer -

A chemical ground rod may be your best solution
http://home.comcast.net/~zcomco/diagram1b.gif

Good web page (Glen Zook, K9STH) with articles & diagrams
http://home.comcast.net/~zcomco/

G. Beat
W9GB
--
Do not use Reply.
Reply only through ARRL forwarding service to W9GB

"SPENCER" <w1gak@cybermesa.nospam.com> wrote in message
news:3F012634.2060901@cybermesa.nospam.com...
> I just moved to New Mexico. I need advice on how to put my ground rod
> into this rocky soil. HELP
>
> Spencer
>

447. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 03:16:35 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f079652_1@news1.prserv.net>
Source record: 113390

Well, Gene,

Here's my comment. Cecil used to regularly post the results of various 75 meter mobile antenna "shootouts" until I posted the following comment:

These shootouts are worthless for the following reason. The shootouts measure ground wave signal level. Most useful 75 meter communication (i. e. over a dozen miles or so) is by way of ionospheric reflection (of high angle radiation), and the high angle radiation is not well correlated to the low angle which produces ground wave for these small aperture radiators.

So, until someone comes up with a practical way to fully characterize high angle radiation from typical mobile antennas, there is no well documented answer to your question, at least for 75 and 40 meters. For 20 meters and up, there isn't a great deal of difference unless you choose something really lossy.

--
Crazy George
Remove NO and SPAM from return address
"G.Balinski" <Nospam@nospam.com> wrote in message
news:XkgNa.35888$fG.18866@sccrnsc01...
> Has anyone put together a recent test of mobile HF antennas? I
think
> that I remembered something in past years called a "shoot out" or
something
> like that. As far as I remember though, it was as much of a test of the
> installation of the antennas as the antennas themselves as different
> vehicles and install methods were used. It would be nice to see on
> objective comparison of the various units like the Hustler series, Ham
> Stick, all the variants of the screw driver antennas, the Texas
Bugcatcher,
> etc. all mounted on the same platform with the same grounding system,
etc.
>
> Anyone seen such a test ?
>
> Thanks,
>
> Gene
>
>

448. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 03:56:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgf7fdaiaf73aa@corp.supernews.com>
Source record: 113391

That's interesting. In modeling, I've found that for antennas with about the same vertical pattern (which is the case for the "shootout" antennas"), the ground wave and sky wave are very well correlated. The difference between antennas (I believe) is primarily the efficiency. And when I model a single antenna and alter the efficiency by changing the ground or wire loss, the ground and sky waves change virtually exactly the same amount, as you'd expect.

Of course, the correlation would be poor between two antennas having different polarization, say one horizontal and the other vertical. But I don't think that's the case with typical "shootout" antennas -- even considering that the vehicle radiates nearly as strongly as the "antenna".

Do you have an example of two short vertical antennas for which the correlation between ground and sky wave is poor? I'd like to see if I can spot this poor correlation in model results.

Roy Lewallen, W7EL

Crazy George wrote:
> Well, Gene,
>
> Here's my comment. Cecil used to regularly post the results of various 75
> meter mobile antenna "shootouts" until I posted the following comment:
>
> These shootouts are worthless for the following reason. The shootouts
> measure ground wave signal level. Most useful 75 meter communication (i. e.
> over a dozen miles or so) is by way of ionospheric reflection (of high angle
> radiation), and the high angle radiation is not well correlated to the low
> angle which produces ground wave for these small aperture radiators.
>
> So, until someone comes up with a practical way to fully characterize high
> angle radiation from typical mobile antennas, there is no well documented
> answer to your question, at least for 75 and 40 meters. For 20 meters and
> up, there isn't a great deal of difference unless you choose something
> really lossy.
>
> --
> Crazy George
> Remove NO and SPAM from return address
> "G.Balinski" <Nospam@nospam.com> wrote in message
> news:XkgNa.35888$fG.18866@sccrnsc01...
>
>> Has anyone put together a recent test of mobile HF antennas? I
>

> think
>
>>that I remembered something in past years called a "shoot out" or
>
> something
>
>>like that. As far as I remember though, it was as much of a test of the
>>installation of the antennas as the antennas themselves as different
>>vehicles and install methods were used. It would be nice to see on
>>objective comparison of the various units like the Hustler series, Ham
>>Stick, all the variants of the screw driver antennas, the Texas
>
> Bugcatcher,
>
>>etc. all mounted on the same platform with the same grounding system,
>
> etc.
>
>>Anyone seen such a test ?
>>
>>Thanks,
>>
>> Gene
>>
>>
>
>
>

449. Re: rsgb special offer join rsgb for ?1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 03:57:13 UTC
From: 128 <jtf66674@hotmal.com>
Message-ID: <s6NNa.3544$ju6.58438@newsfep4-glfd.server.ntli.net>
Source record: 113392

"VHFRadioBuff" <vhfradiobuff@aol.comspamme> wrote in message
news:20030705230503.13495.00000267@mb-m01.aol.com...
> For those that are interested, from the message headers:
>
> X-Complaints-To: news-complaints@lists.btinternet.com
>

Hello,

I can't see why anyone would want to complain about that posting - it IS a genuine offer. I contacted the RSGB and they confirmed it is featured in the RADCOM magazine.

Are you just annoyed that you had to pay more to join or something, or maybe you can't get a licence!

450. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 07:02:30 UTC
From: "Ralph A. Schmid, DK5RAS" <nospam@radio-link.net>
Message-ID: <87ifgvsk6ro16klks4rgjnfhvpcpp2u9r7@4ax.com>
Source record: 113393
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"c" <no@spam.com> wrote:

>
>Hello All,
>
>Why does kenwood not made a good protection
>in the RX front end section after so many years
>expiriance?

Good question. They do not see this as a real problem, and I was told
by a Kenwood representative at a hamfest that wearing two handhelds on
a belt is almost misuse :(

And another problem is, many users even do not know that their
receiver is damaged, because they do not feel the difference between
0.2 and 0.6 uV at 12dB SINAD, and/or they do not have another radio to
compare.

>It must have the same problem when people are in
>the fields with contest (hi power).
>I do not like the idea to always renember that the th-
>f7 is sensetive for that.
>It's intresting, I think to download a schematic of
>this kenwood handheld by www.mods.dk
>
>
>But I think to choose for the yaesu VX-5 or the new
>VX-7.
>
>What is the difference between them?
>
>Does the VX-7 have something bad, or is het
>100% okay?

Take the VX-7, it is OK.

>Cor

regards - Ralph

--

Want to get in touch? http://www.radio-link.net/whereisralph.txt

451. Anybody have luck with loops?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 09:29:40 UTC
From: John Franklin <jpfrank@peoplepc.com>
Message-ID: <vgfqv01k41fd5f@corp.supernews.com>
Source record: 113394

I am planning to build a loop antenna with PVC pipe as the 'spider' for the loop. Each side of the loop will 4ft 2in. So with 4 complete loops on the form (12GA wire) I should have about a full wave length on 20M. I plan to tune it with an auto-tuner like an SGC. Has anybody had and degree of sucess with this combo..... I live in a ground floor apt. (YUCK!)

Thanks,

WB7FFI

452. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 10:22:48 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <klqdnQhq_eoCZZqiRTvUqw@crocker.com>
Source record: 113395

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f078f36$1_4@corp.newsgroups.com...
> Roy Lewallen wrote:
>
> > No, the example you proposed was for two light beams. You gave us the
> > URL with the example, and wondered where the energy went.
> >
> > My question is, can the example you presented actually happen?
>
> I've already said that I am not familiar enough with interferometer
> hardware to know the answer to that question. But the point is that
> even if it cannot happen with light in free space, it can happen with
> RF in a coaxial transmission line where collimation is forced on the
> waves by the physical configuration. In fact, not being able to
> accomplish that feat with light in free space may be the reason it is
> not understood for transmission lines.

you seem to be the only one not understanding it.

453. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 10:27:34 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <8JmdnWK4XrYIZJqiRTvU2Q@crocker.com>
Source record: 113396

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f07905d_4@corp.newsgroups.com...
> David Robbins wrote:
>
> > "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> > news:3f073c35_6@corp.newsgroups.com...
> >
> >>"Sometimes complex" but not always. The two characteristic impedances at
> >>an impedance discontinuity between two transmission lines are usually
> >>considered close enough to real to be considered real. It is indeed real
> >>if the transmission lines are lossless, a common assumption. That
greatly
> >>simplifies the calculations and the power reflection coefficient becomes
> >>very useful.
> >
> > oh, so you are aloud to make simplifying assumptions when it is
convenient
> > for you because you don't want to use the complex power and complex
> > reflection coefficient... but you won't let us make the steady state
> > assumptions that are much more widely used and accepted?!?!?!
>
> You are perfectly free to use whatever simplifying assumptions you choose.
> All I am after is the physics laws underlying those simplified
assumptions.
> I'm not trying to change anything. I am trying to understand something.
> I said this is *NOT* a new and different system of analysis. The only
> purpose of my postings are to try to track the energy components
> around an impedance discontinuity in a transmission line. What is wrong
> with me being curious about that?

if i am free to use a set of well defined and accepted assumptions that
leads to steady state solutions why do you attack them? the sinusoidal
steady state conditions are well understood by engineers and hams world wide
and provide accurate answers to transmission line problems. if you go back
to the formulas they are derived from in any of the many texts that have
been referenced you can see exactly where the currents and voltages come
from and how reflections work from the most basic boundry condition analysis
(and from then derive powers if you really feel the need). starting from a
derived value like power or energy will never give you a complete picture
because you can't see how the more fundamental values of voltage, current, E
and B interact.

454. Re: rsgb special offer join rsgb for ï¿½1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 13:03:21 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <bb7ggv4j7esaa44j5qjlhvm584kkv38ru7@4ax.com>
Source record: 113398

On Sat, 5 Jul 2003 20:37:29 +0000 (UTC), g3zhi@hotmail.com (g3zhi)
wrote:

>Join the Radio Society of Great Britain for ï¿½1.05 or 2 US dollars

It looks like an attractive offer for the Brits. But is the RSGB
really going to mail a dozen monthly magazines across the Atlantic to
we Yanks for only $2.00?

Bob
k5qwg

>
>Normal membership cost is ï¿½42.50 but if you join in July
>
>with the RSGB special offer Membership will cost you ï¿½1.05
>
>Thatï¿½s a massive saving of ï¿½41.45 pounds!
>
>For that you get one years membership of RSGB which includes the RSGB
>national radio magazine Radcom.
>
>Go to http://www.qsl.net/g3zhi/rsgb.jpg for the application form.
>
>http://www.qsl.net/g3zhi

455. Re: rsgb special offer join rsgb for £1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 13:57:55 UTC
From: "Alexander S. Wood" <alec_wood@dont.spam.me.ntlworld.com>
Message-ID: <3WVNa.3760$ju6.64120@newsfep4-glfd.server.ntli.net>
Source record: 113399

A regular poster to the uk.amateur.radio ng advises us that his application (from Australia) was accepted at this rate, so why not USA?

--
Alec Wood M1BNK
Teesside UK

Interested in Ham Radio....have a look at www.ukradioamateur.org

"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message news:bb7ggv4j7esaa44j5qjlhvm584kkv38ru7@4ax.com...
> On Sat, 5 Jul 2003 20:37:29 +0000 (UTC), g3zhi@hotmail.com (g3zhi)
> wrote:
>
> >Join the Radio Society of Great Britain for £1.05 or 2 US dollars
>
> It looks like an attractive offer for the Brits. But is the RSGB
> really going to mail a dozen monthly magazines across the Atlantic to
> we Yanks for only $2.00?
>
> Bob
> k5qwg
>
>
> >
> >Normal membership cost is £42.50 but if you join in July
> >
> >with the RSGB special offer Membership will cost you £1.05
> >
> >That's a massive saving of £41.45 pounds!
> >
> >For that you get one years membership of RSGB which includes the RSGB
> >national radio magazine Radcom.
> >
> >Go to http://www.qsl.net/g3zhi/rsgb.jpg for the application form.
> >
> >http://www.qsl.net/g3zhi
>
>
>

456. Re: High Sierra screwdriver

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:05:08 UTC
From: oceanview2002@earthlink.net
Message-ID: <999cf256.0307060605.4e2db8f8@posting.google.com>
Source record: 113400

> >I am contemplating purchasing a High Sierra screwdriver antenna to mount on
> >the rear of a motorhome. Does anyone have any experience with this antenna?

Yes, do buy the High Sierra. They don't use fingerstock and they have
an all metal custom motor. I had the Tarhell and the Hi Q, both were
pretty bad. They had used motors. The whip screwed into aluminum;
really! both stripped out after a few months. Machining on both
looked pretty poor.

On my High Sierra, the whip screws into brass. The motor is quiet.
It is a snap to tune. Machining is done by a CNC. Parts are
stainless. It is just top notch all the way around. You won't be
sorry. It even costs less than the other two.

73, Gus

457. Re: rsgb special offer join rsgb for £1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:06:08 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030706100608.13495.00000290@mb-m01.aol.com>
Source record: 113401

>I can't see why anyone would want to complain about that posting - it IS a
>genuine offer. I contacted the RSGB and they confirmed it is featured in
>the RADCOM magazine.

Hmm.. let's see, maybe because of the SPAMMING of every amateur radio newsgroup
on a regular basis?
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

458. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:16:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f08316f_1@corp.newsgroups.com>
Source record: 113402

David Robbins wrote:
> you seem to be the only one not understanding it.

If you are talking about reflected waves smart enough to know whether
to carry energy back from a mismatched load or not, yes, I don't
understand. IMO, a wave carries the same amount of energy back from
a mismatched load whether it is dissipated, radiated, or canceled.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

459. Re: Why is it called a 'screwdriver' antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:20:35 UTC
From: jimheath@foothill.net
Message-ID: <6a1f8d34.0307060620.54ed027e@posting.google.com>
Source record: 113403

Wedgew <wedgew@rochester.rr.com> wrote in message
news:<3F030933.4090506@rochester.rr.com>...
> Can anyone explain why it's called a 'screwdriver' antenna

I can. The idea has been around since the early 1950's. There is a patent in the early 1950's. There is also another patent in the early 1970's. Some companies came and went in the 1960's and 1970's. For example, there was the Autenna, MasterMobile and the Swantenna. All were motorized and tuned remotely.

High Sierra and TJ antennas began to advertise and manufacturer the antenna design using a Skil battery operated screwdriver in 1993. While TJ is pretty much gone from the picture, High Sierra still advertises monthly with quarter page ads in QST and CQ. It is fair to say that High Sierra really made the idea popular through a lot of advertising and going to conventions across the country over the last decade.

The motor was changed about 4 years ago from the screwdriver to a commercially made motor. The current production uses an all metal, custom, gearhead motor. But, the idea of a 'screwdriver antenna' has stuck.

460. Good attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:29:42 UTC
From: Rob M <rsmyers@rogers.com>
Message-ID: <3F083263.DE85E45D@rogers.com>
Source record: 113404

I need a good attic antenna that I can use for all the HF bands. I just want to put it up there and forget about it. I have an Heathkit SA-2060 so I should be able to tune out any problems.

Does anyone have any suggestions?

Thanks,
--- Rob
VE3 JQL

461. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:41:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f083723_1@corp.newsgroups.com>
Source record: 113405

David Robbins wrote:
> if i am free to use a set of well defined and accepted assumptions that
> leads to steady state solutions why do you attack them?

What you view as an attack upon the steady-state model is really an
attack upon the concepts of people who religiously believe that the
steady-state model has power and control over reality.

TRANSMISSION LINES WOULD WORK EXACTLY THE SAME WAY IN REALITY IF THE
STEADY-STATE MODEL HAD NEVER EXISTED! Oh, no! Now I have let your most
closely guarded secret out of the bag and turned your sacred cow into
hamburger. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

462. Re: rsgb special offer join rsgb for ?1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:50:17 UTC
From: 10-4GoodBuddy <10-4GoodBuddy@nowhere.net>
Message-ID: <20030706105019.091$Pg@news.newsreader.com>
Source record: 113406

```
they will only accept the orignal page from the magazine, or a photocopy;
scan & print will not be accepted
```

"g3zhi" <g3zhi@hotmail.com> wrote in message
news:3f092ad6.1247158@news.btinternet.com...
> Join the Radio Society of Great Britain for ?1.05 or 2 US dollars
>
> Normal membership cost is ?42.50 but if you join in July
>
> with the RSGB special offer Membership will cost you ?1.05
>
> That's a massive saving of ?41.45 pounds!
>
> For that you get one years membership of RSGB which includes the RSGB
> national radio magazine Radcom.
>
> Go to http://www.qsl.net/g3zhi/rsgb.jpg for the application form.
>
> http://www.qsl.net/g3zhi

463. Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 14:52:43 UTC
From: Rob M <rsmyers@rogers.com>
Message-ID: <3F0837C9.DA796B38@rogers.com>
Source record: 113407

Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or name for for it? Are there different types. What do you recommend?

Thanks,
--- Rob

464. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 15:03:08 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <bfacnYRUv8EOp5WiRTvUqg@crocker.com>
Source record: 113409

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f083723_1@corp.newsgroups.com...
> David Robbins wrote:
> > if i am free to use a set of well defined and accepted assumptions that
> > leads to steady state solutions why do you attack them?
>
> What you view as an attack upon the steady-state model is really an
> attack upon the concepts of people who religiously believe that the
> steady-state model has power and control over reality.
>
> TRANSMISSION LINES WOULD WORK EXACTLY THE SAME WAY IN REALITY IF THE
> STEADY-STATE MODEL HAD NEVER EXISTED! Oh, no! Now I have let your most
> closely guarded secret out of the bag and turned your sacred cow into
> hamburger. :-)

yep they sure would, but without the sinusoidal steady state solutions we
would not have smith charts, thumbrules about impedance transformations in
1/4 and 1/2 wavelength stubs, and it would take a phd to calculate a
matching network for a simple antenna. the power of the steady state
approach is that it gives us accurate answers to a wide range of common
problems that can be verified with simple measurements.

465. Re: Why is it called a 'screwdriver' antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 15:20:53 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <pdfggvggbcsu0bhmg94ol59rkvekh2r427@4ax.com>
Source record: 113410

The name TJ may be gone, but the company was purchased by Nott Ltd,
and they are very much in business. The line is carried by HRO.
http://www.antennex.com/antenna/bb3.htm

Dick - W6CCD

On 6 Jul 2003 07:20:35 -0700, jimheath@foothill.net (Jim) wrote:

>Wedgew <wedgew@rochester.rr.com> wrote in message
news:<3F030933.4090506@rochester.rr.com>...
>> Can anyone explain why it's called a 'screwdriver' antenna
>

>High Sierra and TJ antennas began to advertise and manufacturer the
>antenna design using a Skil battery operated screwdriver in 1993.
>While TJ is pretty much gone from the picture, High Sierra still
>advertises monthly with quarter page ads in QST and CQ.

466. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 15:29:46 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <KfXNa.8620$ZT5.4916@news2.east.cox.net>
Source record: 113411

What did Heath advise? I believe you can use mineral oil.

Pete

"Rob M" <rsmyers@rogers.com> wrote in message
news:3F0837C9.DA796B38@rogers.com...
> Where do you buy the oil for the Heathkit "Cantenna." Is there a certain
specification or name for for it? Are there different types. What do you
recommend?
>
> Thanks,
> --- Rob
>

467. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 15:36:25 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <be9flpkcv0@208.206.142.84>
Source record: 113412

Mineral oil from the pharmacy or Wal Mart

Rob M wrote:

> Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or name for for it? Are there different types. What do you recommend?
>
> Thanks,
> --- Rob

468. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 15:45:03 UTC
From: Bob Nielsen <nielsen@remove_this.oz.net>
Message-ID: <be9g5v$n0i$0@216.39.144.81>
Source record: 113413

On Sun, 06 Jul 2003 14:52:43 GMT, Rob M wrote:
> Where do you buy the oil for the Heathkit "Cantenna." Is there a
> certain specification or name for for it? Are there different types.
> What do you recommend?
>
> Thanks,
> --- Rob
>

Mineral oil (cheaper at a farm supply store than at the drugstore).

Bob, N7XY

469. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 15:52:19 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <79hggvo5hkffanicvkf4fv5sk04j1r3ji0@4ax.com>
Source record: 113414

On Sun, 06 Jul 2003 14:52:43 GMT, Rob M <rsmyers@rogers.com> wrote:

>Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or name for for it? Are there different types. What do you recommend?
>
>Thanks,
>--- Rob

Mineral oil from the drug store works. That's what I used, but it gets expensive buying all those half-pints. MFJ sells a gallon of transformer oil -- probably cheaper, but might be expensive to ship.

Bob
k5qwg

470. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 16:05:10 UTC
From: Guessing <Guessing@connectnet.net>
Message-ID: <XMXNa.90177$Pc5.35732@fed1read01>
Source record: 113415

Asked many times before -- go to http://www.google.com/

Select GROUPS (not WEBS) type in "Heathkit Cantenna Oil' get a zillion answers and discussions from the archives

Bottom line -- use mineral oil or Power line company oil -- but NOT PCB's

Think there are two types of mineral oil -- read the discussions for the proper one.

"Rob M" <rsmyers@rogers.com> wrote in message news:3F0837C9.DA796B38@rogers.com...
> Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or name for for it? Are there different types. What do you recommend?
>
> Thanks,
> --- Rob
>

471. Re: Hustler RM-75 ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 16:28:28 UTC
From: fmmck@aol.com
Message-ID: <20030706122828.19729.00000347@mb-m28.aol.com>
Source record: 113416

<< I've got a friend who is trying to get on 3882 with this antenna and he claims it needs a 6 foot whip in addition to the mast. I don't know anything about Hustler resonators and wonder what it could be. Do the resonators have anything in them besides a coil? >>

Mark-

The RM-75 comes with both a coil and a whip. Mine is NOT six feet long. I think four feet is closer, since it easily fits inthe trunk of my car. If your friend's does not have the whip, he may be able to fit a stainless whip from some other source. Perhaps it would be helpful to trim a piece of stiff wire for best SWR, to determine how long a whip is needed. I believe Hustler will sell you a new whip for less than the price of a new RM-75.

Mine works fairly well on a triple-magnet mount on my Toyota. It is a little worse than 1:1, and has a very narrow bandwidth, about twenty KHz as I recall.

73, Fred, K4DII

472. Re: Good attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 16:31:02 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <be9is5$9mi$1@hercules.btinternet.com>
Source record: 113417

Rob, on the grounds that anything will work, just hang up the longest length of plastic insulated wire in the form of an open ended loop which will fit nicely into your attic. Keep the ends 2 or 3 metres apart.

Use the domestic hot+cold plumbing system as a ground.

It will be hard to improve on such a simple arrangement unless you confine yourself just to one band.

We'll be listening out for you with similar set-ups.

Reg, G4FGQ

****

> I need a good attic antenna that I can use for all the HF bands. I just want to put it up there and forget about it. I have an Heathkit SA-2060 so I should be able to tune out any problems.
>
> Does anyone have any suggestions?
>
> Thanks,
> --- Rob
> VE3 JQL
>

473. Re: rsgb special offer join rsgb for ?1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 16:41:48 UTC
From: Chuck / KE4ETH <chuck_hawks@hotmail.com>
Message-ID: <DFWNa.13992$z34.1302@fe04.atl2.webusenet.com>
Source record: 113408

Went to the RSGB website and looked, Yea a genuine offer, BUT according to the web page, only original page from RadCom or photocopies will be accepted. No computer scanned copies.

I might be willing to join, even with out the mag. for a year, if an electronic printed copy would do.

Chuck

"Alexander S. Wood" <alec_wood@dont.spam.me.ntlworld.com> wrote in message news:3WVNa.3760$ju6.64120@newsfep4-glfd.server.ntli.net...
> A regular poster to the uk.amateur.radio ng advises us that his application
> (from Australia) was accepted at this rate, so why not USA?
>
> --
> Alec Wood M1BNK
> Teesside UK
>
> Interested in Ham Radio....have a look at www.ukradioamateur.org
>
> "Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
> news:bb7ggv4j7esaa44j5qjlhvm584kkv38ru7@4ax.com...
> > On Sat, 5 Jul 2003 20:37:29 +0000 (UTC), g3zhi@hotmail.com (g3zhi)
> > wrote:
> >
> > >Join the Radio Society of Great Britain for ?1.05 or 2 US dollars
> >
> > It looks like an attractive offer for the Brits. But is the RSGB
> > really going to mail a dozen monthly magazines across the Atlantic to
> > we Yanks for only $2.00?
> >
> > Bob
> > k5qwg
> >
> >
> > >
> > >Normal membership cost is ?42.50 but if you join in July
> > >
> > >with the RSGB special offer Membership will cost you ?1.05
> > >
> > >That's a massive saving of ?41.45 pounds!
> > >
> > >For that you get one years membership of RSGB which includes the RSGB

> > >national radio magazine Radcom.
> > >
> > >Go to http://www.qsl.net/g3zhi/rsgb.jpg for the application form.
> > >
> > >http://www.qsl.net/g3zhi
> >
> >
> >
>
>

474. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:08:23 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <bIYNa.238748$jp.6423877@twister.southeast.rr.com>
Source record: 113320

Shell oil sells dielectric oil. See if there is a distributor in the area.Last time I bought it, a year ago, cost was $28.00 USD for a 5 gal pail. Have gotten the stuff from Texaco too. Shell was about $7.00 cheaper for a pail.

"Rob M" <rsmyers@rogers.com> wrote in message news:3F0837C9.DA796B38@rogers.com...
> Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or name for for it? Are there different types. What do you recommend?
>
> Thanks,
> --- Rob
>

475. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:12:04 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030706131204.19916.00000149@mb-m18.aol.com>
Source record: 113418

>These shootouts are worthless for the following reason. The shootouts
>measure ground wave signal level. Most useful 75 meter communication (i. e.
>over a dozen miles or so) is by way of ionospheric reflection (of high angle
>radiation), and the high angle radiation is not well correlated to the low
>angle which produces ground wave for these small aperture radiators.
>
>So, until someone comes up with a practical way to fully characterize high
>angle radiation from typical mobile antennas, there is no well documented
>answer to your question, at least for 75 and 40 meters. For 20 meters and
>up, there isn't a great deal of difference unless you choose something
>really lossy.
>
>--
>Crazy George

Why would Cecil listen to Crazy George, at least in this case?

The shootouts are not worthless. Vertical antenna of 1/4 wavelength or less will produce the same pattern (OK car can participate as a nonhomogenious "radial") and measurements are indicative of the systems performance. See W7EL comments.
The true evaluation of mobile antennas should be done on the same car, same mount and same setup.

One interesting finding by K9UWA is that Q or quality of loading coil (wire size) does not have significant impact on efficiency of mobile antenna. That's measured and "reasoned" by W8JI.

Yuri, K3BU/m

476. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:12:38 UTC
From: richardharrison@webtv.net
Message-ID: <12315-3F085886-107@storefull-2317.public.lawson.webtv.net>
Source record: 113326

Cecil, W5DXP wrote:
"IMO, a wave carries the same amount of energy back from a mismatched load whether it is dissipated, radiated, or cancelled."

Energy is the ability to do work. Potential energy may be inherent in a ball at the top of an incline. Kinetic energy is inherent in the ball rolling down the incline. A pendulum is constantly exchanging potential energy for kinetic energy and vice versa.

A wave is a physical activity that rises and falls, or advances and retreats periodically as it travels through a medium.

A radio wave ia a physical, periodic, activity of energy traveling through a medium (which may be a complete vacuum) and which requires no substance for propagation, only the energy fields. These fields exhibit real force such as the magnetism which turns a motor or the electric attraction of plate volts on electrons in a vacuum tube.

A radio wave conveys energy in a vacuum or guided by conductors. Either way, a radio wave is energy in motion.

A radio wave may be conveyed, redirected, or absorbed.

To cancel is to annul, to bring to zero, and to invalidate for reuse.

A cancelled radio wave is neither conveyed nor redirected. It must then, be absorbed.

Best regards, Richard Harrison, KB5WZI

477. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:15:37 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <ZOYNa.238751$jp.6425378@twister.southeast.rr.com>
Source record: 113319

How did you figure the transmitter end impedances without knowing the length of his feedline.

"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message news:r7legv4ir593kk6qdoglghm917qm613fe2@4ax.com...
> On Sat, 05 Jul 2003 20:54:35 GMT, "Batman" <kg0wx@yahoo.com> wrote:
>
> >I'm planning on putting up a 130' inverted V fed with
> >450 ohm ladder line. At the radio end will be my trusty
> >Yaesu FT-817 feeding to a LDG Z11 auto tuner. The
> >tuners output will be coupled to the ladder line with a
> >4:1 balun. So far, so good.
> >
> >Here's the sticking point: Isn't a 4:1 balun a mismatch
> >for 450 ohm ladder line? I'm no expert (haven't hit the
> >books since I got my ticket) but a 4:1 balun running on
> >coax (50x4=200) seems a poor match for 450 ohm
> >ladder line.....
> >
> >Does it matter? Why does nobody make 8:1 baluns?
> >
> >72's de Ken KG0WX
> >
>
> Ken,
>
>
> The balun impedance ratio is not particularly important on the system
> you describe. The reason being is that the impedance presented at the
> balun in seldom ever 450 Ohms. For example, here is the results of NEC
> model run for a 130 foot dipole mounted 50 feet high over average
> ground, fed with 65 feet of 450-Ohm window line.
>
>
> Impedance at the antenna fed point.
>
> Freq (MHz) Z Angle
> 1.900 1,078.42 -89.63°
> 3.750 95.03 37.13°
> 7.150 4,575.23 20.04°
> 10.125 550.00 -79.15°
> 14.175 2,522.73 52.01°
> 18.114 324.90 -67.39°

> 21.225 1,436.25 58.31°
> 24.930 731.19 71.76°
>
> Impedance at transmitter's end of the transmission line.
>
> 1.900 79.69 -87.94°
> 3.750 734.64 -68.39°
> 7.150 668.20 -77.93°
> 10.125 1,535.40 68.10°
> 14.175 269.59 -74.96°
> 18.114 260.60 -63.80°
> 21.225 83.79 -27.45°
> 24.930 238.54 -68.61°
> 29.000 530.03 69.29°
>
> As you can see, the balun never sees an impedance of 450-Ohms. In
> fact, chances of the transmitter's end of the transmission line ever
> presenting a 450-Ohm (R450 +j0) impedance is right up there with
> wining the Readers Digest sweepstakes. <g>
>
> 73,
> Danny, K6MHE
>
>
>

478. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:28:41 UTC
From: richardharrison@webtv.net
Message-ID: <12317-3F085C49-12@storefull-2317.public.lawson.webtv.net>
Source record: 113325

Cecil, W5DXP wrote:
"---people who religiously believe that the steady-state model has power and control over reality."

Maybe so. But, many more people simply believe there are models which can accurately predict steady-state behavior when given the right data and properly manipulated.

Best regards, Richard Harrison, KB5WZI

479. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:32:44 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <03ZNa.238753$jp.6427288@twister.southeast.rr.com>
Source record: 113328

Ive tried this setup with 4:1 and 1:1 BALUNS, seems to always be a band that doesnt load up that well. Rig up something so you can add in a 1/4 wavelength of transmission line on the band that gives trouble. Or better yet use two antennas designed so that the hard to feed points on one antenna are the easy ones on the other.

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message news:3f078e4b$1_4@corp.newsgroups.com...
> Batman wrote:
> > Here's the sticking point: Isn't a 4:1 balun a mismatch
> > for 450 ohm ladder line? I'm no expert (haven't hit the
> > books since I got my ticket) but a 4:1 balun running on
> > coax (50x4=200) seems a poor match for 450 ohm
> > ladder line.......
>
> As an all HF band antenna, your feedline will always carry
> a relatively high SWR. Therefore, you will *NEVER* see that
> Z0=450 ohms. In my opinion, you would be better off with
> a 1:1 choke, like a W2DU balun.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

480. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:35:31 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnbggnf3.kh5.bit-bucket@localhost.config.com>
Source record: 113321

On Sun, 06 Jul 2003 14:52:43 GMT, Rob M hath writ:

> Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or name for for it? Are there different types. What do you recommend?

FAQ
Google Groups returns 150, and Google Web returns 51 hits using
a exact copy of your Subject: for the search.

Jonesy W3DHJ
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

481. Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:37:23 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <n7ZNa.238754$jp.6428636@twister.southeast.rr.com>
Source record: 113322

Whats the best way to attach a solder lug to aluminum tubing. I dont want ot pop-rivet it on because that is too hard to get off and sheet metal screwa always come loose. I was thinking about putting in a pop rivet then drill and tap the rivet.

482. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:41:51 UTC
From: John Franklin <jpfrank@peoplepc.com>
Message-ID: <vggnprm2g8tf80@corp.supernews.com>
Source record: 113323

I always used automatic transmission fluid in mien. ATF
dissapates the heat fast, just like it does in a transmission.

Pat

483. Re: rsgb special offer join rsgb for ?1.05 or $2 for a year

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:49:26 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <be9nc1qtj1@slb6.atl.mindspring.net>
Source record: 113324

Andy, the VhfRadio Boob. Is a world class trouble making agitator. Then
when caught is a first class liar. Just forget him.

Dan/W4NTI

"128" <jtf66674@hotmal.com> wrote in message
news:s6NNa.3544$ju6.58438@newsfep4-glfd.server.ntli.net...
>
> "VHFRadioBuff" <vhfradiobuff@aol.comspamme> wrote in message
> news:20030705230503.13495.00000267@mb-m01.aol.com...
> > For those that are interested, from the message headers:
> >
> > X-Complaints-To: news-complaints@lists.btinternet.com
> >
>
> Hello,
>
> I can't see why anyone would want to complain about that posting - it IS a
> genuine offer. I contacted the RSGB and they confirmed it is featured in
> the RADCOM magazine.
>
> Are you just annoyed that you had to pay more to join or something, or
maybe
> you can't get a licence!
>
>
>

484. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:50:25 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <BjZNa.238757$jp.6429657@twister.southeast.rr.com>
Source record: 113329

Forgot to add, Shells is Diala AX and Exxon s Univolt. cant remember what
the Texaco stuff is called.

"Jimmy" <Gfender@carolina.rr.com> wrote in message
news:bIYNa.238748$jp.6423877@twister.southeast.rr.com...
> Shell oil sells dielectric oil. See if there is a distributor in the
> area.Last time I bought it, a year ago, cost was $28.00 USD for a 5 gal
> pail. Have gotten the stuff from Texaco too. Shell was about $7.00 cheaper
> for a pail.
>
>
> "Rob M" <rsmyers@rogers.com> wrote in message
> news:3F0837C9.DA796B38@rogers.com...
> > Where do you buy the oil for the Heathkit "Cantenna." Is there a
certain
> specification or name for for it? Are there different types. What do you
> recommend?
> >
> > Thanks,
> > --- Rob
> >
>
>

485. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 17:53:51 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307060953.2281eda4@posting.google.com>
Source record: 113327

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message
news:<3f079652_1@news1.prserv.net>...
> Well, Gene,
>
> Here's my comment. Cecil used to regularly post the results of various 75
> meter mobile antenna "shootouts" until I posted the following comment:
>
> These shootouts are worthless for the following reason. The shootouts
> measure ground wave signal level. Most useful 75 meter communication (i. e.
> over a dozen miles or so) is by way of ionospheric reflection (of high angle
> radiation), and the high angle radiation is not well correlated to the low
> angle which produces ground wave for these small aperture radiators.

Well, I sorta disagree for pretty much the same reasons as Roy. The
patterns , unless distorted by the car body, will not change very much
at all between the various height short vertical antennas. All should
have about the same exact pattern, with differences in efficiency. So
if you increase the FS at 5 degrees, you should have also increased FS
at 35 degrees if increased efficiency was the reason for the increase.
I think in most all cases, the high angle radiation does correlate to
the low angle radiation quite closely.
>
> So, until someone comes up with a practical way to fully characterize high
> angle radiation from typical mobile antennas, there is no well documented
> answer to your question, at least for 75 and 40 meters. For 20 meters and
> up, there isn't a great deal of difference unless you choose something
> really lossy.

Well, being most all mobile verticals are not really well suited for
NVIS type operation, there should not be too much high angle
radiation, unless the pattern is distorted by the car body. I've
always noticed on 80m, late night is always better than early evening
when the skip is short. But even if you wanted to test, you could have
a guy off about 200 miles to do a "double check" of the high angle
operation. The hard part is the varying propagation. I think that in
itself, is the main reason for the ground wave tests. Here at home, I
can tell which of mine are best just by the receiver readings alone.
If you really wanted to even things up, place all antennas on the same
flat ground system to test. But then, that takes away the fun of
trying to improve the car ground, height, etc.. MK

486. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 18:08:37 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <m1pggvc3goj3k66atedo46lj20quuu0uk9@4ax.com>
Source record: 113330

If you read my description below you will see I used 450-Ohm ladder
line 65 feet in length.

The calculations for the input impedance was done using TL Details
software by Dan Maquire AC6LC. A very nice freeware program.

73
Danny, K6MHE

On Sun, 06 Jul 2003 17:15:37 GMT, "Jimmy" <Gfender@carolina.rr.com>
wrote:

>How did you figure the transmitter end impedances without knowing the length
>of his feedline.
>
[snip]
>>
>>
>> The balun impedance ratio is not particularly important on the system
>> you describe. The reason being is that the impedance presented at the
>> balun in seldom ever 450 Ohms. For example, here is the results of NEC
>> model run for a 130 foot dipole mounted 50 feet high over average
>> ground, fed with 65 feet of 450-Ohm window line.
>>
>>
>> Impedance at the antenna fed point.
>>
>> Freq (MHz) Z Angle
>> 1.900 1,078.42 -89.63ï¿½
>> 3.750 95.03 37.13ï¿½
>> 7.150 4,575.23 20.04ï¿½
>> 10.125 550.00 -79.15ï¿½
>> 14.175 2,522.73 52.01ï¿½
>> 18.114 324.90 -67.39ï¿½
>> 21.225 1,436.25 58.31ï¿½
>> 24.930 731.19 71.76ï¿½
>>
>> Impedance at transmitter's end of the transmission line.
>>
>> 1.900 79.69 -87.94ï¿½
>> 3.750 734.64 -68.39ï¿½
>> 7.150 668.20 -77.93ï¿½
>> 10.125 1,535.40 68.10ï¿½
>> 14.175 269.59 -74.96ï¿½
>> 18.114 260.60 -63.80ï¿½

>> 21.225 83.79 -27.45ï¿½
>> 24.930 238.54 -68.61ï¿½
>> 29.000 530.03 69.29ï¿½
>>
>> As you can see, the balun never sees an impedance of 450-Ohms. In
>> fact, chances of the transmitter's end of the transmission line ever
>> presenting a 450-Ohm (R450 +j0) impedance is right up there with
>> wining the Readers Digest sweepstakes. <g>
>>
>> 73,
>> Danny, K6MHE
>>
>>
>>
>

487. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:05:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f087513$1_2@corp.newsgroups.com>
Source record: 113331

David Robbins wrote:
> ... without the sinusoidal steady state solutions we
> would not have smith charts, thumbrules about impedance transformations in
> 1/4 and 1/2 wavelength stubs, and it would take a phd to calculate a
> matching network for a simple antenna. the power of the steady state
> approach is that it gives us accurate answers to a wide range of common
> problems that can be verified with simple measurements.

I don't know anybody who disagrees with that. What I disagree with is
the adoption of the steady-state model as a religion which, in turn,
dictates reality, e.g. standing waves that exist without reflected
waves.

Modulation and noise can easily prove that wave energy is making a
round trip from a mismatched load back to the match point and back
to the load, ad infinitum. The steady-state model does not cause
those reflections to disappear from reality.
--
73, Cecil http://www.qsl.net/w5dxp

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488. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:08:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0875bd_2@corp.newsgroups.com>
Source record: 113332

Yuri Blanarovich wrote:
> The shootouts are not worthless.

Darn tootin'! The breakfast alone is worth the trip. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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489. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:21:06 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030706152106.13292.00000137@mb-m13.aol.com>
Source record: 113333

>
>Whats the best way to attach a solder lug to aluminum tubing. I dont want ot
>pop-rivet it on because that is too hard to get off and sheet metal screwa
>always come loose. I was thinking about putting in a pop rivet then drill
>and tap the rivet.
>
>
>
>

All stainless steel hose clamp. Clen the surfaces, use some Noalox and clamp
the wire to the tubing with hose clamp. Good contact and removable.

Yuri, K3BU

490. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:24:06 UTC
From: BB <billybob@NOSPAMr3dnecks.nf.net>
Message-ID: <3F087756.BD6372FD@NOSPAMr3dnecks.nf.net>
Source record: 113337

So do you burry the radials? or just run them along the ground?

'Doc wrote:

> 'BB',
> 40 feet of wire and a ground rod won't make a very good
> electrical ground for your tower. But it's a good start.
> The ground rod connected to your tower may satisfy your local
> electrical code, but it's a 'p' poor ground for lightning
> safety considerations. The 40 feet of wire you already have
> plus a couple hundred feet more, laid out as radials (then
> connected to the tower) will work much 'better'.
> If the tower is metal and the mast (or antenna) is well
> connected to the tower, there's no need to run a seperate
> ground wire up the tower. It probably won't hurt a thing
> but it also isn't helping much either.
> Just for 'grins', go take a look at a copy of the National
> Electrical Codes (NEC) at your local library. Lots of good
> and interesting information in it...
> 'Doc

491. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:27:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f087a2b_2@corp.newsgroups.com>
Source record: 113334

Richard Harrison wrote:
> To cancel is to annul, to bring to zero, and to invalidate for reuse.

Add "in one direction" and you will have it. No such constraints about the other directions. The 'lost' enery can simply flow in another direction.

> A cancelled radio wave is neither conveyed nor redirected. It must then,
> be absorbed.

Nope, the energy in a canceled EM wave will simply go the other direction, just like canceled light reflections in a non-glare thin-film coating. The Melles-Griot web page says that the energy in canceled EM waves is NOT absorbed or lost. It says the energy 'lost' in the reflected wave cancellation process joins the forward wave as "enhanced intensity". Here's the quote:

"If the two reflections are of equal amplitude, then this amplitude (and hence intensity) minimum will be zero."

Rearward-traveling reflected waves are canceled at the air to thin-film boundary.

"In the absence of absorption or scatter, the principle of conservation of energy indicates all "lost" reflected intensity will appear as enhanced intensity in the transmitted beam."

Energy from the canceled reflected waves joins the forward wave.

The same thing happens at the match point in a transmission line and works even better than non-glare thin-films for light since we are dealing with single frequency coherent collimated waves within a transmission line.
--
73, Cecil http://www.qsl.net/w5dxp

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

492. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:32:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f087b59_2@corp.newsgroups.com>
Source record: 113335

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "---people who religiously believe that the steady-state model has power
> and control over reality."
>
> Maybe so. But, many more people simply believe there are models which
> can accurately predict steady-state behavior when given the right data
> and properly manipulated.

And I'm not addressing those people. The ones I disagree with are the ones who say reflected waves cease to exist the instant that steady-state is achieved. I know you don't believe that, Richard.
--
73, Cecil http://www.qsl.net/w5dxp

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493. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:34:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f087be0$1_2@corp.newsgroups.com>
Source record: 113336

Jimmy wrote:
> Ive tried this setup with 4:1 and 1:1 BALUNS, seems to always be a band that
> doesnt load up that well. Rig up something so you can add in a 1/4
> wavelength of transmission line on the band that gives trouble. Or better
> yet use two antennas designed so that the hard to feed points on one antenna
> are the easy ones on the other.

Or better yet, just feed the transmission line at a current maximum
point as described on my web page. All transmitter end impedances
are resistive and between 35 ohms and 85 ohms - no tuner needed.
--
73, Cecil http://www.qsl.net/w5dxp

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494. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 19:38:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f087ceb$1_2@corp.newsgroups.com>
Source record: 113338

Jimmy wrote:
> Whats the best way to attach a solder lug to aluminum tubing. I dont want ot
> pop-rivet it on because that is too hard to get off and sheet metal screwa
> always come loose. I was thinking about putting in a pop rivet then drill
> and tap the rivet.

Attach an aluminum clamp to the tubing and then attach the lug to
the aluminum clamp. Be sure the lug is tinned with solder which is
a fair dissimilar metals contact for aluminum.
--
73, Cecil http://www.qsl.net/w5dxp

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------== Over 80,000 Newsgroups - 16 Different Servers! =-----

495. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 20:12:13 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F08829D.DE344975@cwis.net>
Source record: 113339

BB,
As long as they are deep enough so the lawn mower
doesn't get them, or you don't trip over them, it really
doesn't matter.
'Doc

496. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 20:17:05 UTC
From: Whinging Courier <markonusenetTAKEITAWAY@yahoo.co.uk>
Message-ID: <MPG.1972941838b26cf9989818@news.cis.dfn.de>
Source record: 113340
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

In uk.radio.amateur, News.CIS.DFN.DE said:

>Have you tried Viagra?

No. I suffer with vertigo :)

497. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 20:44:13 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <D7qdnUjppau9F5WiRTvU2Q@crocker.com>
Source record: 113341

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f087b59_2@corp.newsgroups.com...
> Richard Harrison wrote:
>
> > Cecil, W5DXP wrote:
> > "---people who religiously believe that the steady-state model has power
> > and control over reality."
> >
> > Maybe so. But, many more people simply believe there are models which
> > can accurately predict steady-state behavior when given the right data
> > and properly manipulated.
>
> And I'm not addressing those people. The ones I disagree with are the
> ones who say reflected waves cease to exist the instant that steady-
> state is achieved. I know you don't believe that, Richard.

who ever said they 'cease to exist'???? the great power of the steady state model is that the reflections have reflected enough times that each additional reflection is of negligible magnitude, at this point the currents, voltages, and yes, even the powers traveling in each direction along the line are at essentially constant values (the 'steady state') and you no longer have to look at each reflection separately. that is the great shortcoming of the arguments you have been presenting, you are taking a snapshot of what is really an infinite summation of reflections in both directions along a line between the mismatch points, and that is why it is so hard to use the exact solution, you have to sum each reflection until you get tired of doing it or reach the same value that the steady state solution gives you in one step. so its not that the steady state solution ignores the reflections, it has all the reflections already summed up in one neat package.

you know what is also funny... if you go into detail and analyze what Hecht is doing in Optics, most of those simple statements and thumbrules about reflected intensities, glare cancellation, and interference are a result of the steady state solution.... it happens so quickly at those frequencies that they don't even bother discussing the intermediate steps, they go right to the final solution... which is of course the 'steady state' for the system. if you went into complete analysis of a thin film that cancels reflections you would have to sum a multitude of internal reflections until you found that after many internal reflections they eventually canceled the initial reflection and voila.... steady state with no reflection, just like a coaxial matching section... complete with its forward and backward wave components and reflections at each impedance discontinuity.

498. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:00:56 UTC
From: Ron <rmrippy@hotmail.com>
Message-ID: <3F088CC1.2060605@hotmail.com>
Source record: 113342

I have a buddipole in my attic mounted on a camera tripod. This makes a simple and neat installation, but is not working out as well as I would like (no reflection on the buddipole, which is fine product). I am using an Icom 746pro, getting some RFI on the TV, telephone, etc and am wondering if an inverted V running under the eave of the house and fed at the peak of the roof would work any better. I live in an end unit condo and the eave faces an open field. Any opinions on this?

Ron, W4TQT

Dave Holford wrote:
>
> Glenn Lewis wrote:
>>
>> Cast me in that lot of operators who moved into a new QTH with outdoor
>> antenna restrictions! Has anyone come across (or actually used) an HF
>> antenna design for the attic that got reasonably good operating
>> results? Thanks for reading.
>>
>> KB5Q
>
> A while back I was in that situation and for a year or so ran a
> multi-band dipole - several dipoles with a common feedpoint. I also used
> a 'slinky' dipole with reasonable results on 40m. Although it could be
> loaded up on 80m results were not very good on that band. The only time
> I had a problem was on 15m - running 100W - which would result in total
> loss of all sound on the stereo on the floor below; turned out the
> speaker leads were resonant near 15M and aligned with the antenna;
> changed the speaker positions to move the resonance and the problem was
> resolved.
>
> Dave
> VE3HLU

499. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:07:37 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vgh3t6kfggi38b@corp.supernews.com>
Source record: 113343

You can get pop rivets that are either tapped or have a nut attached.
Go to a fastener shop, it's truly amazing all the different kinds of pop
rivets.

hank wd5jfr

"Jimmy" <Gfender@carolina.rr.com> wrote in message
news:n7ZNa.238754$jp.6428636@twister.southeast.rr.com...
> Whats the best way to attach a solder lug to aluminum tubing. I dont want
ot
> pop-rivet it on because that is too hard to get off and sheet metal screwa
> always come loose. I was thinking about putting in a pop rivet then drill
> and tap the rivet.
>
>

500. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:22:12 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F089287.409@comcast.net>
Source record: 113344

I have reservations regarding the validity of mobile antenna shootouts.

First, I have never participated in one or even witnessed one. With that disclaimer on the record I'll proceed.

I managed an antenna range for five years. On the range we measured antenna performance for satellites and military missiles on US government contract.

We would not consider any measurement within 1000 wavelengths as indicating valid field intensity [looking for a uniform plane of the Poynting Vector]. We also measured AZ-EL characteristics.

Translating that to 80 meters requires that the receiving antenna be located 80 kilometers [~ 50 miles] from the source and also that the source be rotatable in AZ-EL.

Seems to raise questions regarding how valid is the measurement of a ham mobile antenna on a vehicle made at ground level at a range of 100 meters or 1 mile.

The data from shootouts is the data. But, interpreting that one slice out of a two dimensional hemisphere to claim one is better than the other takes a big leap of faith.

Deacon Dave, W1MCE
Manager, Textron Antenna Range, Dracut, Massachusetts, retired
Both the range and I are now retired :-)

Yuri Blanarovich wrote:
>>These shootouts are worthless for the following reason. The shootouts
>>measure ground wave signal level. Most useful 75 meter communication (i. e.
>>over a dozen miles or so) is by way of ionospheric reflection (of high angle
>>radiation), and the high angle radiation is not well correlated to the low
>>angle which produces ground wave for these small aperture radiators.
>>
>>So, until someone comes up with a practical way to fully characterize high
>>angle radiation from typical mobile antennas, there is no well documented
>>answer to your question, at least for 75 and 40 meters. For 20 meters and
>>up, there isn't a great deal of difference unless you choose something
>>really lossy.
>>
>>--
>>Crazy George
>
>
>

> Why would Cecil listen to Crazy George, at least in this case?
>
> The shootouts are not worthless. Vertical antenna of 1/4 wavelength or less
> will produce the same pattern (OK car can participate as a nonhomogenious
> "radial") and measurements are indicative of the systems performance. See W7EL
> comments.
> The true evaluation of mobile antennas should be done on the same car, same
> mount and same setup.
>
> One interesting finding by K9UWA is that Q or quality of loading coil (wire
> size) does not have significant impact on efficiency of mobile antenna. That's
> measured and "reasoned" by W8JI.
>
> Yuri, K3BU/m

501. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:24:29 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F089311.6030807@comcast.net>
Source record: 113345

He calculated the impedance at the ANTENNA FEEDPOINT!

DD, W1MCE

Jimmy wrote:
> How did you figure the transmitter end impedances without knowing the length
> of his feedline.
>
> "Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
> news:r7legv4ir593kk6qdoglghm917qm613fe2@4ax.com...
>
>>On Sat, 05 Jul 2003 20:54:35 GMT, "Batman" <kg0wx@yahoo.com> wrote:
>>
>>
>>>I'm planning on putting up a 130' inverted V fed with
>>>450 ohm ladder line. At the radio end will be my trusty
>>>Yaesu FT-817 feeding to a LDG Z11 auto tuner. The
>>>tuners output will be coupled to the ladder line with a
>>>4:1 balun. So far, so good.
>>>
>>>Here's the sticking point: Isn't a 4:1 balun a mismatch
>>>for 450 ohm ladder line? I'm no expert (haven't hit the
>>>books since I got my ticket) but a 4:1 balun running on
>>>coax (50x4=200) seems a poor match for 450 ohm
>>>ladder line.......
>>>
>>>Does it matter? Why does nobody make 8:1 baluns?
>>>
>>>72's de Ken KG0WX
>>>
>>
>>Ken,
>>
>>
>>The balun impedance ratio is not particularly important on the system
>>you describe. The reason being is that the impedance presented at the
>>balun in seldom ever 450 Ohms. For example, here is the results of NEC
>>model run for a 130 foot dipole mounted 50 feet high over average
>>ground, fed with 65 feet of 450-Ohm window line.
>>
>>
>>Impedance at the antenna fed point.
>>
>>Freq (MHz) Z Angle
>>1.900 1,078.42 -89.63ï¿½

>>3.750 95.03 37.13ï¿½
>>7.150 4,575.23 20.04ï¿½
>>10.125 550.00 -79.15ï¿½
>>14.175 2,522.73 52.01ï¿½
>>18.114 324.90 -67.39ï¿½
>>21.225 1,436.25 58.31ï¿½
>>24.930 731.19 71.76ï¿½
>>
>>Impedance at transmitter's end of the transmission line.
>>
>>1.900 79.69 -87.94ï¿½
>>3.750 734.64 -68.39ï¿½
>>7.150 668.20 -77.93ï¿½
>>10.125 1,535.40 68.10ï¿½
>>14.175 269.59 -74.96ï¿½
>>18.114 260.60 -63.80ï¿½
>>21.225 83.79 -27.45ï¿½
>>24.930 238.54 -68.61ï¿½
>>29.000 530.03 69.29ï¿½
>>
>>As you can see, the balun never sees an impedance of 450-Ohms. In
>>fact, chances of the transmitter's end of the transmission line ever
>>presenting a 450-Ohm (R450 +j0) impedance is right up there with
>>wining the Readers Digest sweepstakes. <g>
>>
>>73,
>>Danny, K6MHE
>>
>>
>>
>
>
>

502. antenna design for 418Khz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:35:17 UTC
From: Peter K <posttonews@btinternet.com>
Message-ID: <bea4ml$n9h$1@sparta.btinternet.com>
Source record: 113346

Can anyone point me at a site with "homebrewed" solutions for a receiving antenna for RTTY (navtex) on 418KHz?
The antenna is for use on a small yacht and therefore I've dismissed loop designs on directional grounds. I've got acceptable results using 2.4m of 1 1/4" waste pipe wound with around 320m of 30swg enameled wire but I would like to reduce the length.
Am I "playing" in the right area?
I was thinking of breaking the winding in the middle and connecting coax to make a dipole feeding into the 50ohm receiver socket.
Another idea was the mast and rigging wires all run from a fibreglass (insulated? for radio frequencies?) hull could they be used ?

Thanks

Peter K
--
Replace to with 2 in email address

503. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:35:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f08983a$1_3@corp.newsgroups.com>
Source record: 113348

David Robbins wrote:
> if you went into complete analysis of a thin film that cancels
> reflections you would have to sum a multitude of internal reflections until
> you found that after many internal reflections they eventually canceled the
> initial reflection and voila.... steady state with no reflection, just like
> a coaxial matching section... complete with its forward and backward wave
> components and reflections at each impedance discontinuity.

So even you agree that there is wave cancellation. Now all you have to
convince us of is those canceled waves carried zero energy. Good luck.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

504. Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:36:50 UTC
From: restamp@hotmail.com
Message-ID: <SD0Oa.148437$BA.50588475@twister.columbus.rr.com>
Source record: 113347

I got on the new 60m band today using my G5RV and had a few
very nice QSOs.

The G5RV is essentially a 102 ft dipole. Empirically, it tunes
up fine on 60m (with a transmatch). My question is: How much
gain does it exhibit over a 88 ft true-blue 60m dipole? My guess:
Not much, as it is only 16% long. However, the FCC does mandate
that we "do the calculations" for non-dipole antennas to ensure
we do not exceed the 50W ERP requirement.

So, can anyone tell me what the gain of a G5RV exhibits on the
60m band so I can determine what power limits I need to observe
for that band?

Thanks in advance,
Rob Stampfli

505. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:45:14 UTC
From: froggers <not.froggers@nospam.ntlworld.com>
Message-ID: <3l0Oa.2719$vn2.90404@newsfep2-gui.server.ntli.net>
Source record: 113349

Solder it on

Nick

506. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:51:18 UTC
From: jgboyles@aol.com
Message-ID: <20030706175118.08931.00000218@mb-m20.aol.com>
Source record: 113351

>I have reservations regarding the validity of mobile antenna shootouts.

>Seems to raise questions regarding how valid is the measurement of a ham
>mobile antenna on a vehicle made at ground level at a range of 100
>meters or 1 mile.

>The data from shootouts is the data. But, interpreting that one slice
>out of a two dimensional hemisphere to claim one is better than the
>other takes a big leap of faith

If you look at it like this, an 80m mobile antenna is very short in terms of wavelength. As such, the biggest problem is efficiency, getting as much rf out as possible without ground and I**R losses dropping efficiency below a few percent. In a shootout what I would try to do is squeeze another few % efficiency, and not worry about elevation angles and that sort of thing, as I would do on my own 80m mobile. I think this is the deal with shootouts, the best efficiency of a short 80m antenna as measured by an FSM a couple hundred meters away.
If you have an antenna with high efficiency, then you change the playing field.
73 Gary N4AST

507. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 21:58:29 UTC
From: Leland Cox <lcox107@comcast.net>
Message-ID: <WIacnT2w-PDDBZWiXTWJjg@comcast.com>
Source record: 113350

Heath recommended transformer oil for the highest dissipation. Other
oils will not provide the efficiency of the transformer oil. I stopped
at a power company repair facility and they filled up my can free!

Old oil can contain PCB's The power guys will know the difference!

If you are not planning on tuning up a kilowatt, the mineral oil will be
just fine. I have never had mine feel warm!

Les, AA4F

Rob M wrote:
> Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or
name for for it? Are there different types. What do you recommend?
>
> Thanks,
> --- Rob
>

508. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:02:24 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307061402.486fea6b@posting.google.com>
Source record: 113352

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030706131204.19916.00000149@mb-m18.aol.com>...

>
> One interesting finding by K9UWA is that Q or quality of loading coil (wire
> size) does not have significant impact on efficiency of mobile antenna. That's
> measured and "reasoned" by W8JI.

I disagree though, but not because of wire size. Some coils are extra
lossy. Usually from using thin wire, with a very tight winding ratio.
But there is a design problem with the hustler coils and their metal
end caps, if I remember right.
I forgot exactly what the deal was, but it should be in google. I
agree in *most* cases, ground losses will overshadow coil losses, but
if the coil is bad enough, it's loss then becomes noticable. If this
were not the case, I could use the hustler coil with the same results
as my homemade "bugcatcher" style coils. But I can't.
In some respects the extra loss in the hustler coil is intentional
from what I hear. They wanted to make it easier to get a usable match
on most any car. But I don't like using excess coil loss as a psuedo
"matching device". In my coil testing here, I've found thin wire coils
can be quite efficient if the winding ratio is optimum. One of my "pet
peeve" screwdriver brands also uses excess coil loss as an aid to
matching, or to avoid the use of a matching device altogether. The
coils are about 1.5 to 2 inches dia, and use thin wire wound very
tightly. A friend of mine had one and was trying to set the matching
device. I doodled with it a while, and it was horrible. So much coil
loss, you had trouble hearing a noise peak as you tuned the coil.
Really bad...Maybe the worst mobile antenna I've ever seen. And it's
called a "screwdriver". Just to show, all screwdrivers are not alike.
Not by a long shot. MK

509. Re: Why is it called a 'screwdriver' antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:06:16 UTC
From: jimheath@foothill.net
Message-ID: <6a1f8d34.0307061406.7671f1af@posting.google.com>
Source record: 113353

Dick <rhughes33@cableone.net> wrote in message
news:<pdfggvggbcsu0bhmg94ol59rkvekh2r427@4ax.com>...
> The name TJ may be gone, but the company was purchased by Nott Ltd,
> and they are very much in business. The line is carried by HRO.
> http://www.antennex.com/antenna/bb3.htm
>

Nice to hear they are still in business. They have not advertised in
many years. As I understand it, HRO stopped carrying the line a long
time ago. I just checked the HRO web site and found nothing under Nott
or TJ. Not that it matters much.

73, Jim

510. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:18:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgh80rk0k1f6b4@corp.supernews.com>
Source record: 113355

Dave, you have to remember that "shootout" measurements are relative, not absolute. I've never heard any of the "shootout" proponents claim that they're accurately measuring field intensity -- just relative field intensity, a much, much easier problem -- particularly when all the radiators are essentially vertically polarized and electrically short. So all have very nearly the same polarization and vertical pattern.

About the weakest point I see in the measurements (assuming properly calibrated field strength meters, and care taken in keeping power input and physical position constant) is the uneven horizontal patterns caused by the vehicles. And while I'd be skeptical of fractional dB accuracy, I'd regard differences of a few dB to be pretty indicative of relative antenna performance in the field.

Roy Lewallen, W7EL

Dave Shrader wrote:
> I have reservations regarding the validity of mobile antenna shootouts.
>
> First, I have never participated in one or even witnessed one. With that
> disclaimer on the record I'll proceed.
>
> I managed an antenna range for five years. On the range we measured
> antenna performance for satellites and military missiles on US
> government contract.
>
> We would not consider any measurement within 1000 wavelengths as
> indicating valid field intensity [looking for a uniform plane of the
> Poynting Vector]. We also measured AZ-EL characteristics.
>
> Translating that to 80 meters requires that the receiving antenna be
> located 80 kilometers [~ 50 miles] from the source and also that the
> source be rotatable in AZ-EL.
>
> Seems to raise questions regarding how valid is the measurement of a ham
> mobile antenna on a vehicle made at ground level at a range of 100
> meters or 1 mile.
>
> The data from shootouts is the data. But, interpreting that one slice
> out of a two dimensional hemisphere to claim one is better than the
> other takes a big leap of faith.
>
> Deacon Dave, W1MCE
> Manager, Textron Antenna Range, Dracut, Massachusetts, retired
> Both the range and I are now retired :-)

511. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:26:59 UTC
From: Leland Cox <lcox107@comcast.net>
Message-ID: <lzGdnQHk6_eRApWiU-KYvA@comcast.com>
Source record: 113354

Bob,
Glad you had good luck on 60M. My G5RV and antenna autotuner does not work well at all! I get about a 5:1 SWR.

Les, AA4F

Rob Stampfli wrote:

> I got on the new 60m band today using my G5RV and had a few
> very nice QSOs.
>
> The G5RV is essentially a 102 ft dipole. Empirically, it tunes
> up fine on 60m (with a transmatch). My question is: How much
> gain does it exhibit over a 88 ft true-blue 60m dipole? My guess:
> Not much, as it is only 16% long. However, the FCC does mandate
> that we "do the calculations" for non-dipole antennas to ensure
> we do not exceed the 50W ERP requirement.
>
> So, can anyone tell me what the gain of a G5RV exhibits on the
> 60m band so I can determine what power limits I need to observe
> for that band?
>
> Thanks in advance,
> Rob Stampfli

512. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:31:06 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <DhadndcGduk9PpWiU-KYuQ@ctc.net>
Source record: 113356

> up fine on 60m (with a transmatch). My question is: How much
> gain does it exhibit over a 88 ft true-blue 60m dipole? My guess:
> Not much, as it is only 16% long. However, the FCC does mandate
> that we "do the calculations" for non-dipole antennas to ensure
> we do not exceed the 50W ERP requirement.
>
> So, can anyone tell me what the gain of a G5RV exhibits on the
> 60m band so I can determine what power limits I need to observe
> for that band?
>
I would treat it like a dipole and not worry about it. Whaterver small gain
it has is probably used up in losses in the feedline and matching. YOu are
probably loosing more than enough in the transmatch to make up the
differance in the gain.

513. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:36:50 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <s6adndTX1b6eOJWiXTWJkw@ctc.net>
Source record: 113357

> About the weakest point I see in the measurements (assuming properly
> calibrated field strength meters, and care taken in keeping power input
> and physical position constant) is the uneven horizontal patterns caused
> by the vehicles. And while I'd be skeptical of fractional dB accuracy,
> I'd regard differences of a few dB to be pretty indicative of relative
> antenna performance in the field.
>
>
I thought the vehicle was driven in a circle (same circle for all) to
average out the patern.

514. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:40:29 UTC
From: Michael Melland <w9wis@charter.net>
Message-ID: <vgh9afhk49rk90@corp.supernews.com>
Source record: 113358

That's Shell "Diala".... power companies get it by the tanker usually and it is what they now fill transformers with. It's non-PCB and great stuff, a highly refined mineral oil with additives to prevent corrosion and water infiltration. My power company gave me a gallon for nothing. They said at their quantities 1 to 2 gallons wouldn't be wort the bookeeping costs to sell it <grin>.

Mike, W9WIS

515. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:44:00 UTC
From: k9sqg@aol.com
Message-ID: <20030706184400.03453.00000148@mb-m12.aol.com>
Source record: 113359

Installing a ground rod at the bottom of the tower hole and using heavy braid to connect it to the tower is a way of grounding the tower also and has the benefit of "no bends" in the conductor going to the ground rod. With a ground rod next to the tower/concrete base, essentially half of the area available to the ground rod for dissipating the energy is absent (i.e. the volume presented by the concrete). Of course, after the tower is installed eliminates this option.

73s,

Evan

516. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:51:45 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgha1ik7il7d7e@corp.supernews.com>
Source record: 113360

And Roy,
The signal strength range from a simple whip and tuner to (for example) a
102" whip on a bugcatcher on a hustler base (ie. BIG, RESONANT AND MATCHED)
is more like several s-units than a few db.
After decades of tuning HF mobile antennas with field strength meters
located on the hood or miles away I have concluded that if the field
strength
up close gets better, it usually gets better far away, as well.
And that condition coincides with a resonant, matched antenna.
Nothing wrong with shootouts;
Just remember it's a limited data set and avoid any "real" shootouts!
73, H. NQ5H

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vgh80rk0k1f6b4@corp.supernews.com...
> Dave, you have to remember that "shootout" measurements are relative,
> not absolute. I've never heard any of the "shootout" proponents claim
> that they're accurately measuring field intensity -- just relative field
> intensity, a much, much easier problem -- particularly when all the
> radiators are essentially vertically polarized and electrically short.
> So all have very nearly the same polarization and vertical pattern.
>
> About the weakest point I see in the measurements (assuming properly
> calibrated field strength meters, and care taken in keeping power input
> and physical position constant) is the uneven horizontal patterns caused
> by the vehicles. And while I'd be skeptical of fractional dB accuracy,
> I'd regard differences of a few dB to be pretty indicative of relative
> antenna performance in the field.
>
> Roy Lewallen, W7EL
>
> Dave Shrader wrote:
> > I have reservations regarding the validity of mobile antenna shootouts.
> >
> > First, I have never participated in one or even witnessed one. With that
> > disclaimer on the record I'll proceed.
> >
> > I managed an antenna range for five years. On the range we measured
> > antenna performance for satellites and military missiles on US
> > government contract.
> >
> > We would not consider any measurement within 1000 wavelengths as
> > indicating valid field intensity [looking for a uniform plane of the
> > Poynting Vector]. We also measured AZ-EL characteristics.

> >
> > Translating that to 80 meters requires that the receiving antenna be
> > located 80 kilometers [~ 50 miles] from the source and also that the
> > source be rotatable in AZ-EL.
> >
> > Seems to raise questions regarding how valid is the measurement of a ham
> > mobile antenna on a vehicle made at ground level at a range of 100
> > meters or 1 mile.
> >
> > The data from shootouts is the data. But, interpreting that one slice
> > out of a two dimensional hemisphere to claim one is better than the
> > other takes a big leap of faith.
> >
> > Deacon Dave, W1MCE
> > Manager, Textron Antenna Range, Dracut, Massachusetts, retired
> > Both the range and I are now retired :-)
>

517. Re: Antennas for Kites

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:54:38 UTC
From: "Ken Coghill III, WB4ZOH" <wb4zoh@arrl.net>
Message-ID: <Fn6dnXivZO0yNZWiU-KYvA@comcast.com>
Source record: 113361

Henry Kolesnik wrote:
> My favorite kite was a surplus WWII that had yellow fabric and about 4 feet
> tall..
> It was easy to launch, had a lot of lift and quite durable..
> But it was in pre-ham days..
> I wish I could find another to put up some antennas..
> Anyone know where I can find one?
> tnx
> hank wd5jfr
>
> "William H. O'Hara, III" <whoohara@yahoo.com> wrote in message
> news:Xns93AC78BD32A0AAX2A3DA5M1512AODKAMO@65.100.3.61...
>
>>Would someone like to comment on their
>>favorite antenna for a kite setup. Would
>>you please give reasons such as VSWR,
>>ERP, and ease of use.
>>
>>Thanks
>>Bill
>
>
>
I've built several 'delta' and 'Cody War Kites' to lift 500-650 feet of
antenna wire. A good source for info and kites: http://www.intothewind.com/
good luck,

Ken

--
Ken Coghill III, WB4ZOH
"Without music life would be a mistake" - - Nietzsche

518. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 22:58:30 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <ifSdnbjNG_AFNJWiRTvU2Q@crocker.com>
Source record: 113362

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f08983a$1_3@corp.newsgroups.com...
> David Robbins wrote:
> > if you went into complete analysis of a thin film that cancels
> > reflections you would have to sum a multitude of internal reflections
until
> > you found that after many internal reflections they eventually canceled
the
> > initial reflection and voila.... steady state with no reflection, just
like
> > a coaxial matching section... complete with its forward and backward
wave
> > components and reflections at each impedance discontinuity.
>
> So even you agree that there is wave cancellation. Now all you have to
> convince us of is those canceled waves carried zero energy. Good luck.

sure, when you superimpose fields they can cancel each other. that is seen
by solving for the voltage and/or current at an impedance discontinuity.

try this exercise:

100v AC 50 ohm source ------50 ohm 1 wave------|----75 ohm 1/2 wave----| 50
ohm resistive load

for the purposes of this exercise the cables are lossless, and the source
can be modeled as a perfect sinusoidal voltage source in series with a 50
ohm resistance. the 50 ohm line is 1 wavelength at the frequency of the
source. the 75 ohm line is 1/2 electrical wavelength at the frequency of the
source. the source is turned on at time=0 and is a sine wave starting at 0
degrees phase. The period of the source is 1 usec.

show wave components on both sides of the 50-75 ohm cable junction from:
t=0 to 1 usec
t=1 to 2 usec
t=2 to 3 usec
t=3 to 4 usec
t=4 to 5 usec
and
t=100 to 101 usec

519. Re: Why is it called a 'screwdriver' antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 23:07:40 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <vmahgvo416rpee465jfav14ug0vvjbng5j@4ax.com>
Source record: 113363

I'm almost certain the last time I went to HRO Phoenix (last month)
the BB3 display was still mounted on a table back by the other
antennas. Maybe it's just a local thing as HRO Phoenix is the closest
HRO to the Nott BB3 factory in Farmington New Mexico. I have been
there twice. Nice people to deal with. You have piqued my interest
though, and I will check with HRO when we go to Phoenix next week.

73, Dick - W6CCD

On 6 Jul 2003 15:06:16 -0700, jimheath@foothill.net (Jim) wrote:

>Dick <rhughes33@cableone.net> wrote in message
news:<pdfggvggbcsu0bhmg94ol59rkvekh2r427@4ax.com>...
>> The name TJ may be gone, but the company was purchased by Nott Ltd,
>> and they are very much in business. The line is carried by HRO.
>> http://www.antennex.com/antenna/bb3.htm
>>
>
>Nice to hear they are still in business. They have not advertised in
>many years. As I understand it, HRO stopped carrying the line a long
>time ago. I just checked the HRO web site and found nothing under Nott
>or TJ. Not that it matters much.
>
>73, Jim

520. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-06 23:31:29 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <18chgv82humsu1p0h53gp5m6mh15lqj483@4ax.com>
Source record: 113364

That strange as I gave the impedance at BOTH the antenna fed point and
at the transmitter end of the ladder line.

Danny, K6MHE

On Sun, 06 Jul 2003 21:24:29 GMT, Dave Shrader
<david.shrader@comcast.net> wrote:

>He calculated the impedance at the ANTENNA FEEDPOINT!
>
>DD, W1MCE
>
>Jimmy wrote:
>> How did you figure the transmitter end impedances without knowing the length
>> of his feedline.
>>
>> "Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
>> news:r7legv4ir593kk6qdoglghm917qm613fe2@4ax.com...
>>
>>>On Sat, 05 Jul 2003 20:54:35 GMT, "Batman" <kg0wx@yahoo.com> wrote:
>>>
>>>
>>>>I'm planning on putting up a 130' inverted V fed with
>>>>450 ohm ladder line. At the radio end will be my trusty
>>>>Yaesu FT-817 feeding to a LDG Z11 auto tuner. The
>>>>tuners output will be coupled to the ladder line with a
>>>>4:1 balun. So far, so good.
>>>>
>>>>Here's the sticking point: Isn't a 4:1 balun a mismatch
>>>>for 450 ohm ladder line? I'm no expert (haven't hit the
>>>>books since I got my ticket) but a 4:1 balun running on
>>>>coax (50x4=200) seems a poor match for 450 ohm
>>>>ladder line.......
>>>>
>>>>Does it matter? Why does nobody make 8:1 baluns?
>>>>
>>>>72's de Ken KG0WX
>>>>
>>>
>>>Ken,
>>>
>>>
>>>The balun impedance ratio is not particularly important on the system
>>>you describe. The reason being is that the impedance presented at the
>>>balun in seldom ever 450 Ohms. For example, here is the results of NEC

>>>model run for a 130 foot dipole mounted 50 feet high over average
>>>ground, fed with 65 feet of 450-Ohm window line.
>>>
>>>
>>>Impedance at the antenna fed point.
>>>
>>>Freq (MHz) Z Angle
>>>1.900 1,078.42 -89.63ï¿½
>>>3.750 95.03 37.13ï¿½
>>>7.150 4,575.23 20.04ï¿½
>>>10.125 550.00 -79.15ï¿½
>>>14.175 2,522.73 52.01ï¿½
>>>18.114 324.90 -67.39ï¿½
>>>21.225 1,436.25 58.31ï¿½
>>>24.930 731.19 71.76ï¿½
>>>
>>>Impedance at transmitter's end of the transmission line.
>>>
>>>1.900 79.69 -87.94ï¿½
>>>3.750 734.64 -68.39ï¿½
>>>7.150 668.20 -77.93ï¿½
>>>10.125 1,535.40 68.10ï¿½
>>>14.175 269.59 -74.96ï¿½
>>>18.114 260.60 -63.80ï¿½
>>>21.225 83.79 -27.45ï¿½
>>>24.930 238.54 -68.61ï¿½
>>>29.000 530.03 69.29ï¿½
>>>
>>>As you can see, the balun never sees an impedance of 450-Ohms. In
>>>fact, chances of the transmitter's end of the transmission line ever
>>>presenting a 450-Ohm (R450 +j0) impedance is right up there with
>>>wining the Readers Digest sweepstakes. <g>
>>>
>>>73,
>>>Danny, K6MHE
>>>
>>>
>>>
>>
>>
>>

521. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 00:23:11 UTC
From: "Dave, AA6YQ" <dhb@mediaone.net>
Message-ID: <P33Oa.30953$C83.2659245@newsread1.prod.itd.earthlink.net>
Source record: 113365
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

http://www.qsl.net/dxlab/ - 8 free applications that automate DXing activities from spot collection/analysis to transceiver control to logging to propagation prediction to QSL route discovery. These applications run independently, but sense each other's presence and interoperate automatially.

If you like Pathfinder, you should try the rest of the DXLab Suite -- and its all free!

73,

Dave, AA6YQ

"c" <no@spam.com> wrote in message
news:3ef2d26a$0$76762$1b62eedf@news.wanadoo.nl...
> Hello All,
>
> Do you have nice amateur software
> on your computer wich is NOT in my
> list?
> PLEASE LET US KNOW, it's nice to compare,
> also for the other people in this news-group.
>
> The software list is also on my webte:
> http://www.qsl.net/pd0rkc
>
> PSK
> WinPSK v2.13 s
> n MIXWIN 2.07 s
> LOGGER 7.09 s
> LOGGER-UPDATE 8.07 s
>
> SSTV
> n CHROMAPIX V1.5.10 s
> MMSSTV 1.08 s
> n MSCAN V3.20 s
> n MIXWIN 2.07 s
> EZSSTV v3.0 m
> DL4SAW GSHPC V2.3 s
> JVFAX v.7.1 m
> n W95SSTV 1.10 s
> n RADIOCOM 4.0
>
> RTTY

> HAMCOM v3.1 m
> n MIXWIN 2.07 s
> MMTTY 1.65 s
> MORSE DECODER
> n CWGET v1.36 s
> MORSE TRAINER
> n NUMORSE 1.09
>
> PACKET
> AGWE 2002.308 s
> TPK v1.83 m
> n WINPACK 6.80 s
> TSTHOST V2.21B m
>
> APRS
> n UIVIEW2.39 s
>
> RTTY/CW/PACKET
> HAMSOPE 1.51 s
> BUZZER DECODER
> POCSAC v2.5 s
>
> ANTENNA
> DL6WU
>
> SATELLITE
> n NOVA 2.1q
> SATSCAPE 2.00
>
>
> INTERNET QSO
> ECHOLINK 1.5.832
>
> DB CALCULATIONS
> minidBcalculator 1.3.2
>
> EME/SCATTER
> wsjt300
>
> DTMF TONES
> dtmfdail
>
> KENWOOD TS-2000
> service manual
>
> LOGBOOK
> vqlog 2.3b
>
>
>

>

522. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 00:42:59 UTC
From: BB <billybob@NOSPAMr3dnecks.nf.net>
Message-ID: <3F08C213.E9810F0F@NOSPAMr3dnecks.nf.net>
Source record: 113367

If my tower is just in the ground (not in concrete) do I still need the rod? The tower would esentially be grounded by putting it in the ground right?

K9SQG wrote:

> Installing a ground rod at the bottom of the tower hole and using heavy braid
> to connect it to the tower is a way of grounding the tower also and has the
> benefit of "no bends" in the conductor going to the ground rod. With a ground
> rod next to the tower/concrete base, essentially half of the area available to
> the ground rod for dissipating the energy is absent (i.e. the volume presented
> by the concrete). Of course, after the tower is installed eliminates this
> option.
>
> 73s,
>
> Evan

523. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 00:50:58 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <beag2bqch1@slb4.atl.mindspring.net>
Source record: 113366

Agreed....Have you all noticed how civilized the hams are on 60 meters?
Sounds like it used to be everywhere in ham radio.

What a refreshing change.

Dan/W4NTI

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:DhadndcGduk9PpWiU-KYuQ@ctc.net...
> > up fine on 60m (with a transmatch). My question is: How much
> > gain does it exhibit over a 88 ft true-blue 60m dipole? My guess:
> > Not much, as it is only 16% long. However, the FCC does mandate
> > that we "do the calculations" for non-dipole antennas to ensure
> > we do not exceed the 50W ERP requirement.
> >
> > So, can anyone tell me what the gain of a G5RV exhibits on the
> > 60m band so I can determine what power limits I need to observe
> > for that band?
> >
> I would treat it like a dipole and not worry about it. Whaterver small
gain
> it has is probably used up in losses in the feedline and matching. YOu
are
> probably loosing more than enough in the transmatch to make up the
> differance in the gain.
>
>

524. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 01:03:02 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030706210302.21015.00000271@mb-m05.aol.com>
Source record: 113368

>>K3BU:
>> One interesting finding by K9UWA (sorry, that should be W9UCW) is that Q or quality of loading coil (wire
>> size) does not have significant impact on efficiency of mobile antenna.
>That's
>> measured and "reasoned" by W8JI.

>NM5K:
>I disagree though, but not because of wire size. Some coils are extra
>lossy. Usually from using thin wire, with a very tight winding ratio.
>But there is a design problem with the hustler coils and their metal
>end caps, if I remember right.
>I forgot exactly what the deal was, but it should be in google. I
>agree in *most* cases, ground losses will overshadow coil losses, but
>if the coil is bad enough, it's loss then becomes noticable. If this
>were not the case, I could use the hustler coil with the same results
>as my homemade "bugcatcher" style coils. But I can't.
>In some respects the extra loss in the hustler coil is intentional
>from what I hear.

That's what I thought, besides, big coils look impressive, but...

Here is the part of Barry's W9UCW posting on TopBand reflector explaining his work and findings: (again that is measured and not 'splained by W8JI "theories")

>>As for the HI-Q vs. LO-Q loading coil discussion, I would like to offer up a sampling of results from a massive study of inductively loaded verticals, especially mobile antennas. Most of this data was collected over a period of 3 years at a test site built near Fletcher, NC. A goodly number of people were involved. Thousands of measurements were made and all test series were repeated many times. There were near-field and far-field pick-up points and a dozen or so parameters were measured.

This all started with the "Q" question. It was the big issue when I started mobiling on 75 and 160 around 1960. Many of us enjoyed the increased band width and low amount of proximity effects of long, skinny resonators, and seemingly felt no difference in signal compared to the big open HI-Q coils, where a little rain or a small bug put you out of band. Unscientific you say? You bet.

Around 1970, some guys from Argonne Labs, in an effort to show us the error of our ways, brought down equipment to a "160 Meter Reunion" and set up a measurement program. About 75 people were there. On the "Q" question, the comparison was between similarly laid out center/top loaded antennas. One had a big open wound, heavy wire, spaced turn coil with a 8" diameter and a

1:1 length/diameter ratio. The other had a 1" diameter close wound coil on a PVC form using #20 wire. The length/diameter ratio was over 20:1. It was covered with shrink tubing.

The measured worst case scenario (of any HF band) was on 160. The difference was .3db. That's 3 tenths. We were all shocked and immediately agreed that the test had to be flawed...even those of us that thought the LO-Q coil was a better deal. It just couldn't be that close.

That test was modified and tried over and over. I know of 5 more run between 1972 and 1992....all with the same results. Personally, the big beasty open HI-Q coils look like "real radio" to me. There's just no real reason to use them unless you prefer pinpoint bandwidth and terrible "proximity" problems. We reconfirmed the numbers in the Fletcher Program.

The reason the difference is small is that the current diminishes so rapidly in the first few turns of lumped inductance, whether Hi-Q or LO-Q, and therefore only the loss in those turns is being compared. The same is true for inductively top loaded base station verticals. Loss in the coil is insignificant. Most calculations to the contrary made in texts, articles and some modeling programs are based on the current being equal throughout the coil. This is not true. Of course, most mentions of this loss are not quantified at all.

On the other hand, the position of the coil in the available vertical mast means everything. Here's the bottom line: All other factors being the same, the inductively loaded vertical with the longest mast between feed point and lumped inductance wins the radiated field strength contest. This means that a standard Hustler setup is louder than any "Screwdriver" or "Bug Catcher" unless they have more than
4½' of mast below the coil. We confirmed that in Fletcher, too. As an example, for 80M, a 9ft. top loaded mast was down 20.5db from a full quarter wave, both measured on the test stand. The base loaded 9 ft. mast was 36.5db down, a difference of 16db. BTW, the same mast loaded with a Smart tuner or Icom AH-4 was 44.5db down. Results are worse on 160.

Bandwidth is controlled by two things; the length/diameter ratio of the inductor and the capacitance/inductance ratio of the resonator. (Top whip or hat to coil inductance)….higher means wider in both cases
<< (de W9UCW)

Seems that Hustler tried to "match" the low band resonators by introducing some extra loses in their loading coils. I rewound the resonators with 1/4" copper tubing (20 and up) but in view of W9UCW findings maybe there is good compromise between ugliness and performance.

Yuri, K3BUm

525. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 02:03:19 UTC
From: kf4tun <kf4tun@adelphia.net>
Message-ID: <Hx4Oa.10419$Hw.7535985@news2.news.adelphia.net>
Source record: 113269

Where does one buy aluminum solder?

Jim, kf4tun

"froggers" <not.froggers@nospam.ntlworld.com> wrote in message
news:3I0Oa.2719$vn2.90404@newsfep2-gui.server.ntli.net...
> Solder it on
>
> Nick
>
>

526. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 02:42:13 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F08DE05.114287E9@cwis.net>
Source record: 113270

Evan,
What effect (if any) does the curing concrete have on
the braid (acids, etc.), I wonder?
'Doc

527. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 02:50:42 UTC
From: dplatt@radagast.org
Message-ID: <vgho02n69vkr99@corp.supernews.com>
Source record: 113271

In article <Hx4Oa.10419$Hw.7535985@news2.news.adelphia.net>,
kf4tun <kf4tun@adelphia.net> wrote:

>Where does one buy aluminum solder?

See http://www.rcfaq.com/answers/engines/solderalum.htm for some
suggestions. It's definitely available.

I've even heard people report that they've been able to solder
reliably to aluminum using a combination of ordinary 64/40 solder,
activated rosin flux, and a bit of trickery involving a dentist's
pick. The trick is this: flux the joint well, heat thoroughly, apply
some solder (it'll bead up and won't stick). Then, take the dentist's
pick, and while continuing to heat the solder and junction, scrape the
pick _through_ the bead of molten solder and scratch the surface of
the aluminum underneath (naturally, the pick has to be hot enough that
it doesn't cause the solder to congeal).

The scratching action breaks up the layer of oxide on the surface of
the aluminum. If the molten solder is lying right on the metal, it
(and the remnants of the flux) will exclude oxygen long enough to
allow the solder to fuse with the aluminum.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

528. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 02:56:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f08e375_5@corp.newsgroups.com>
Source record: 113273

H. Adam Stevens wrote:
> The signal strength range from a simple whip and tuner to (for example) a
> 102" whip on a bugcatcher on a hustler base (ie. BIG, RESONANT AND MATCHED)
> is more like several s-units than a few db.

As a matter of fact, a 138" whip with SGC-230 was 12 dB down from the top
rated bugcatcher and screwdriver.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

529. Re: Best Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 02:56:27 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F08E15B.2D6AF30D@cwis.net>
Source record: 113272

Paul,

1. Find a large plastic bird house.
2. Drill/cut/glue/whatever house back together around
2 meter antenna.
3. Mount on pole on top of your house.
4. Run guys to appropriate places in your yard.
5. Feed guys as antennas.
6. Brag about your birds to the neighbors.
7. If neighbors complain, accuse them of being "anti-bird"
and turn them in to the SPCA / Audabon Society (sp).
'Doc

PS - Or...
1. Substitute a flag for the bird house.
2. Wear camies and a 'do-rag'.
3. Paint face with camo-paint.
4. Sneak around in the shadows in the yard at night.
5. Give neighbors dirty looks.

530. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 03:00:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vghohoa85108c3@corp.supernews.com>
Source record: 113274

I recall reading a treatise many years ago where the author made the case that any attempt to solder copper to aluminum was doomed to failure. His argument was that there would inevitably be corrosion at the interface due to the large electrochemical difference between the two metals and, although the joint might be initially sound, it was bound to fail after some length of time.

I've never tried soldering aluminum so don't have any direct experience. Has anyone had an aluminum-copper joint that's remained strong after several years? If so, indoors or outdoors?

Roy Lewallen, W7EL

Dave Platt wrote:
> In article <Hx4Oa.10419$Hw.7535985@news2.news.adelphia.net>,
> kf4tun <kf4tun@adelphia.net> wrote:
>
>
>>Where does one buy aluminum solder?
>
>
> See http://www.rcfaq.com/answers/engines/solderalum.htm for some
> suggestions. It's definitely available.
>
> I've even heard people report that they've been able to solder
> reliably to aluminum using a combination of ordinary 64/40 solder,
> activated rosin flux, and a bit of trickery involving a dentist's
> pick. The trick is this: flux the joint well, heat thoroughly, apply
> some solder (it'll bead up and won't stick). Then, take the dentist's
> pick, and while continuing to heat the solder and junction, scrape the
> pick _through_ the bead of molten solder and scratch the surface of
> the aluminum underneath (naturally, the pick has to be hot enough that
> it doesn't cause the solder to congeal).
>
> The scratching action breaks up the layer of oxide on the surface of
> the aluminum. If the molten solder is lying right on the metal, it
> (and the remnants of the flux) will exclude oxygen long enough to
> allow the solder to fuse with the aluminum.
>

531. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 03:13:06 UTC
From: dplatt@radagast.org
Message-ID: <vghpa2tlvbp627@corp.supernews.com>
Source record: 113275

In article <vghohoa85108c3@corp.supernews.com>,
Roy Lewallen <w7el@eznec.com> wrote:

>I recall reading a treatise many years ago where the author made the
>case that any attempt to solder copper to aluminum was doomed to
>failure. His argument was that there would inevitably be corrosion at
>the interface due to the large electrochemical difference between the
>two metals and, although the joint might be initially sound, it was
>bound to fail after some length of time.

Hmmm... good point.

The URL I quoted did make the point that soldered aluminum joints are
not particularly strong. The usual capillary action during soldering
doesn't take place, so you have to fillet the joint to build up enough
metal to provide strength.

Welding is apparently preferable if mechanical strength is required.

>I've never tried soldering aluminum so don't have any direct experience.
>Has anyone had an aluminum-copper joint that's remained strong after
>several years? If so, indoors or outdoors?

No data, sorry.

Another possibility might be to use one of the professional "COPALUM"
copper-to-aluminum crimping systems, designed for doing safety
upgrades in small-gauge aluminum wiring systems in houses. These
crimp sleeves need a lot of pressure to apply properly, though, and
the equipment isn't all that easy to come by.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

532. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 03:29:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f08eb24$1_5@corp.newsgroups.com>
Source record: 113276

David Robbins wrote:
> try this exercise:
>
> 100v AC 50 ohm source ------50 ohm 1 wave------|----75 ohm 1/2 wave----| 50
> ohm resistive load

The forward power on the 50 ohm line is 200W. The reflected power on the 200 ohm line is 0W. The forward power on the 75 ohm line is 208.33W. The reflected power on the 75 ohm line is 8.33W. The physical reflection coefficient rho = (75-50)/(75+50) = 0.2 making rho^2 = 0.04.

200W(rho^2) = 8W reflected, 200W(1-rho^2) = 192W transmitted

8.33W(rho^2) = 0.33W re-reflected, 8.33W(1-rho^2) = 8W not re-reflected

The reflected component voltages on the source side are 20V at zero deg and 20V at 180 deg which causes cancellation of the reflected wave toward the source. There's 16W of destructive interference.

The forward component voltages on the load side are 120V at zero deg and 5V at zero deg which causes a forward voltage on the 75 ohm line of 125V. There's 16W of constructive interference. The reflected voltage is 25V on the 75 ohm line and arrives out of phase with the 125V of forward voltage so the voltage at the impedance discontinuity is 100v.
--
73, Cecil http://www.qsl.net/w5dxp

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533. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 03:31:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f08eb9b$1_5@corp.newsgroups.com>
Source record: 113277

kf4tun wrote:
> Where does one buy aluminum solder?

I bought some at the Ft. Tuthill hamfest in AZ.
--
73, Cecil http://www.qsl.net/w5dxp

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534. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 03:35:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f08eca0_5@corp.newsgroups.com>
Source record: 113278

Roy Lewallen wrote:
> Has anyone had an aluminum-copper joint that's remained strong after
> several years?

I've often wondered why someone doesn't invent a copper to
aluminum bar of some kind, copper on one end and aluminum
on the other. What prohibits a gradual molecular merging
of those two elements?
--
73, Cecil http://www.qsl.net/w5dxp

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535. Coax to scanner extention?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 04:01:44 UTC
From: achilles03@hotmail.com
Message-ID: <fef44ceb.0307062001.240da0cd@posting.google.com>
Source record: 113279

I'm still getting my feet wet in the world of AR, and was hoping to learn some from the more experienced people in this group.

I was planning on using my scanner while listening to an airborne transmitter. However, I know the car frame causes a lot of path loss (anyone happen to know a ballpark figure right off the top of their head?). Therefore, I was planning on placing the antenna outside the car and running a coax inside the car. My questions are:

1. Does it matter what area of the car I place the antenna on? Or is the only thing that matters the fact that the antenna is outside of the car's faraday cage?

2. How much loss in scanner sensitivity can I expect with, say, a 6ft coax inserted? (I imagine not much, but I'm just curious).

Thanks in advance for anyone who has any insight or information!
Dave

536. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 04:02:09 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vghs64o6ashf3d@corp.supernews.com>
Source record: 113280

Actually, I've made the connection as one poster suggested -- clamped the wire under a stainless steel clamp. It does seem to be slowly corroding the aluminum, but after 20 years outside in the rain, the corrosion still isn't bad. Some Noalox would probably would have helped.

Roy Lewallen, W7EL

537. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 04:31:35 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F08F791.93DA90C1@shaw.ca>
Source record: 113281

Roy Lewallen wrote:
>
> I recall reading a treatise many years ago where the author made the
> case that any attempt to solder copper to aluminum was doomed to
> failure. His argument was that there would inevitably be corrosion at
> the interface due to the large electrochemical difference between the
> two metals and, although the joint might be initially sound, it was
> bound to fail after some length of time.
>
> I've never tried soldering aluminum so don't have any direct experience.
> Has anyone had an aluminum-copper joint that's remained strong after
> several years? If so, indoors or outdoors?
>
> Roy Lewallen, W7EL
>
>

It would sure make building magnetic loops where resistive
joints are undesirable a lot easier! :-)
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

538. Re: Coax to scanner extention?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 05:00:45 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F08FE7D.D4DF7A27@cwis.net>
Source record: 113282

David,
As high as you can get it, would be best. I'm not sure
you could measure the loss in 6 feet of coax, too small.
'Doc

539. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 06:03:21 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <J28Oa.241060$jp.6528677@twister.southeast.rr.com>
Source record: 113285

I use 70 gal of it a year, Can says "Diala AX". I think this is suppose to be a grade above the Diala. The Texaco stuff I used in the past was yellow this is clear. Had to change it when a charging transformer melted down.

"Michael Melland" <w9wis@charter.net> wrote in message news:vgh9afhk49rk90@corp.supernews.com...
> That's Shell "Diala".... power companies get it by the tanker usually and it
> is what they now fill transformers with. It's non-PCB and great stuff, a
> highly refined mineral oil with additives to prevent corrosion and water
> infiltration. My power company gave me a gallon for nothing. They said at
> their quantities 1 to 2 gallons wouldn't be wort the bookeeping costs to
> sell it <grin>.
>
> Mike, W9WIS
>
>

540. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 06:05:19 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <z48Oa.241064$jp.6527905@twister.southeast.rr.com>
Source record: 113283

Anybody know what the fee air rating of a cantenna resistor is?

"Rob M" <rsmyers@rogers.com> wrote in message
news:3F0837C9.DA796B38@rogers.com...
> Where do you buy the oil for the Heathkit "Cantenna." Is there a certain
specification or name for for it? Are there different types. What do you
recommend?
>
> Thanks,
> --- Rob
>

541. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 06:13:56 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <Ec8Oa.241075$jp.6529313@twister.southeast.rr.com>
Source record: 113284

Aluminum actually takes solder pretty well. 60/40 solid core solder and a
little 20 weight motor oil for flux. The trick is to get rid of any existing
oxidation and prevent it from oxidizing using the oil. I just won some beer
moneey by soldering a tab top to a piece of wire. Didnt want a soldered
joint though.

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vghohoa85108c3@corp.supernews.com...
> I recall reading a treatise many years ago where the author made the
> case that any attempt to solder copper to aluminum was doomed to
> failure. His argument was that there would inevitably be corrosion at
> the interface due to the large electrochemical difference between the
> two metals and, although the joint might be initially sound, it was
> bound to fail after some length of time.
>
> I've never tried soldering aluminum so don't have any direct experience.
> Has anyone had an aluminum-copper joint that's remained strong after
> several years? If so, indoors or outdoors?
>
> Roy Lewallen, W7EL
>
> Dave Platt wrote:
> > In article <Hx4Oa.10419$Hw.7535985@news2.news.adelphia.net>,
> > kf4tun <kf4tun@adelphia.net> wrote:
> > >
> > >
> >>Where does one buy aluminum solder?
> > >
> > >
> > > See http://www.rcfaq.com/answers/engines/solderalum.htm for some
> > > suggestions. It's definitely available.
> > >
> > > I've even heard people report that they've been able to solder
> > > reliably to aluminum using a combination of ordinary 64/40 solder,
> > > activated rosin flux, and a bit of trickery involving a dentist's
> > > pick. The trick is this: flux the joint well, heat thoroughly, apply
> > > some solder (it'll bead up and won't stick). Then, take the dentist's
> > > pick, and while continuing to heat the solder and junction, scrape the
> > > pick _through_ the bead of molten solder and scratch the surface of
> > > the aluminum underneath (naturally, the pick has to be hot enough that
> > > it doesn't cause the solder to congeal).
> > >
> > > The scratching action breaks up the layer of oxide on the surface of
> > > the aluminum. If the molten solder is lying right on the metal, it

> > (and the remnants of the flux) will exclude oxygen long enough to
> > allow the solder to fuse with the aluminum.
> >
>

542. Re: Lightning dangers from Faraday's cage comprimise while storm...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 06:51:17 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <FL8Oa.241119$jp.6529526@twister.southeast.rr.com>
Source record: 113286

Lightning does some pretty weird stuff.
Several years ago I was given a Radio Shack Color cumpter that had been
struck by lightning. Upon checking it out I found all the ICs and power
supply was good. After pullling the microprocessor from its socket I noticed
3 runs on the pc board that was vaporized. I repaired the runs and the
computer worked as good as new. Runs were on the sddress lines. Go Figure.

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:26134-3F02DCC1-9@storefull-2313.public.lawson.webtv.net...
> Henry Kolesnik wrote:
> "---Dan, N5AR was travelling down an interstate and lightning hit the 2
> meter whip on his van and blew the antenna, coax, and radio to
> pieces---."
>
> It is likely N5AR`s 19-in whip and appurtenances would have been spared
> if he had 36-in extensions of grounded whips at the corners of his van`s
> roofline. The air terminals made by these corner whips would have
> relieved the short 2-meter band whip of stress.
>
> It is surprising that the lightning created such havoc, especially if
> the antenna was not a mag-mount but was mounted on a through the roof
> fitting. The spacing between center conductor and roof or inside the
> fitting or coax is so small. RG-58 breaks down at not much more than
> 1400 volts peak. Evaporation of the antenna fitting or coax at the
> fitting should have kept the lightning from the radio.
>
> Impedance and velocity factor discourage lightning propagation inside
> coax. A gas tube may save a radio from an antenna contact with a power
> line, but it`s superfluous for a strong lightning transient in every
> case I`ve seen. First problem is the delay in gas firing time. In power
> and audio circuits, capacitance can slow the voltage rise giving the gas
> tube time to fire. This is an unavailable tactic in an r-f circuit.
>
> Best regards, Richard Harrison, KB5WZI
>

543. Re: Coax to scanner extention?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 07:03:27 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgi6q57h87308e@corp.supernews.com>
Source record: 113287

Reflection of waves off the car surface can affect the sensitivity in various directions, and height above ground will increase range. So the best position is in the center of the top of the car. But any position outside the car will be considerably better than being inside the car. Although the car body shields incoming waves, it doesn't make much of a Faraday cage at aviation-band frequencies because the window and winshield holes are quite large in terms of wavelength. (If they weren't, and the car body really did make an effective Faraday cage, you wouldn't be able to hear hardly anything at all from inside the car.)

The loss of 6 feet of RG-58 size coax, or even very small RG-174 size coax, will be negligible (less than 1 dB) at aviation band frequencies.

Roy Lewallen, W7EL

David Harper wrote:
> I'm still getting my feet wet in the world of AR, and was hoping to
> learn some from the more experienced people in this group.
>
> I was planning on using my scanner while listening to an airborne
> transmitter. However, I know the car frame causes a lot of path loss
> (anyone happen to know a ballpark figure right off the top of their
> head?). Therefore, I was planning on placing the antenna outside the
> car and running a coax inside the car. My questions are:
>
> 1. Does it matter what area of the car I place the antenna on? Or is
> the only thing that matters the fact that the antenna is outside of
> the car's faraday cage?
>
> 2. How much loss in scanner sensitivity can I expect with, say, a 6ft
> coax inserted? (I imagine not much, but I'm just curious).
>
>
> Thanks in advance for anyone who has any insight or information!
> Dave

544. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 08:20:34 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f093263$2_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113289
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

So, you come home in the evening and see what
DX you can falsely claim to have worked?

What more evidence do we need that DXing has become a
CBer's activity?

Back to the days when QSL cards and awards were a
measure of the individual's technical prowess in specifying,
designing, manufacturing and setting up his own station.

Dave, AA6YQ <dhb@mediaone.net> wrote in message
news:P33Oa.30953$C83.2659245@newsread1.prod.itd.earthlink.net...
> http://www.qsl.net/dxlab/ - 8 free applications that automate DXing
> activities from spot collection/analysis to transceiver control to logging
> to propagation prediction to QSL route discovery. These applications run
> independently, but sense each other's presence and interoperate
> automatially.

545. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 08:36:51 UTC
From: froggers <not.froggers@nospam.ntlworld.com>
Message-ID: <UfaOa.37$s61.11472@newsfep2-gui.server.ntli.net>
Source record: 113288

Aluminium solder is available from e.g. Maplins and Farnell / RS in the UK.

I also have heard that removing the oxide layer by scratching the surface whilst under an oil film then soldering with ordinary solder works OK.

Using Aluminium solder makes soldering aluminium seem pretty much the same as soldering copper / tinned copper things together - Aluminium needs to be really clean though and just scratched clean - I think the oxide layer forms instantly
(microseconds?) but the aluminium solder flux seems to take care of it.
I also use it to patch up holes in the aluminium grill pan which seem to appear
remarkably frequently...

Nick

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f08eb9b$1_5@corp.newsgroups.com...
> kf4tun wrote:
> > Where does one buy aluminum solder?
>
> I bought some at the Ft. Tuthill hamfest in AZ.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

546. Re: Attic HF Antenna - Any Good Designs?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 08:43:50 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0932C6.8C3A0597@cwis.net>
Source record: 113290

Ron,
I wouldn't expect a huge difference but I think
it couldn't help but be 'better'...
'Doc

547. home-made preamplifier

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 09:41:38 UTC
From: Aj <arttu.jauhiainen@phnet.fi>
Message-ID: <zebOa.359$hT5.241@reader1.news.jippii.net>
Source record: 113291

I'm thinking of building myself some kind of a active preselector or a preamplifier
to improve my reception. Any ideas? Someone mentioned that here might be several
people who have the knowledge and have built antenna amplifiers. My receiver is a
Sangean ATS 909 and I usually listen to SW (120 - 60m).

548. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 10:30:28 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <5cG0YuJEvUCEAC@ifwtech.co.uk>
Source record: 113296

Roy Lewallen wrote:
>I recall reading a treatise many years ago where the author made the
>case that any attempt to solder copper to aluminum was doomed to
>failure. His argument was that there would inevitably be corrosion at
>the interface due to the large electrochemical difference between the
>two metals and, although the joint might be initially sound, it was
>bound to fail after some length of time.
>
>I've never tried soldering aluminum so don't have any direct
>experience. Has anyone had an aluminum-copper joint that's remained
>strong after several years? If so, indoors or outdoors?

Aluminum-soldered connections to both brass and aluminum have lasted more than ten years outdoors on the moonbounce array, here in the moderately damp English climate... and they'll probably be good for another ten.

Aluminum soldering is possible, but not easy. Here are a few tips that I found out the hard way.

The connections were all drilled through the larger piece and pinned with a screw for mechanical strength, so the joint cannot possible flex or move. Then add the solder for electrical continuity *only*. This is important for antenna work - never rely on solder alone for mechanical strength. It doesn't ever have much strength, and if you allow solder to be flexed by the wind, it will very quickly fatigue, crystallize and break.

Aluminum soldering is tricky. Practise on some scrap pieces, because you *will* make a mess of it first time!

To make the solder work, it is *essential* to file and scrape the aluminum absolutely clean and bright, and to degrease it with solvent. (A thin, invisible film of aluminum oxide re-forms instantly. The special flux will take care of that, but don't expect it to handle any corrosion that's heavy enough to be visible.) Whenever I tried a short-cut, the solder failed to run properly and the whole thing turned into a cruddy mess. The cleanup/rescue job then took much, much longer and the finished result was never as good as when I'd taken the trouble to get it right first time.

Because aluminum is very good at conducting heat away from the joint, and the metal pieces will probably be large, you'll need a torch (butane is OK, but a butane/propane mix gives a bit more heating power). Use the hot gases *outside* of the visible flame to heat the metal, not the flame itself. Move the flame all around the metal - front, sides, top,

bottom and around the back - so it all comes up to the same temperature at the same time. From time to time, remove the flame and just touch the hot metal with the end of the solder, until the solder melted and runs freely around the joint.

Don't let the aluminum get too hot! The melting temperature of aluminum solder is quite high, and there is a narrow range between the metal being hot enough to melt the solder, and becoming so hot that it oxidizes. If you see a cruddy oxide layer form, you've already passed the point of no return and the joint is a failure. The *only* way forward is then to let it cool, file away all the crud and start again. Do *not* try to rescue an oxidized joint by adding more heat and more solder - it won't work, and it only makes the cleanup job harder.

When the pieces are just hot enough, the solder runs freely just like normal tin-lead, and makes a neat fillet. (If the joint looks at all lumpy and rough, it's a failure.) When the aluminum surface is properly 'tinned' with the special solder, it's possible to continue with regular cored tin-lead solder, which is easier to work.

On my antennas, the finished joints were lightly sprayed with polyurethane to keep moisture away, but this flaked off after a few years. After ten years there was only light corrosion, confined to the solder itself, and it wasn't at all serious.

So much for the good news. The bad news is that the I tried several aluminum solders, and only one of them worked (for me). Unfortunately that solder only came in little packets that had been re-branded by the supplier, who have since discontinued it. I never did find out what the original make was.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

549. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 10:44:17 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <t3qdnYKtkdzc0pSiRTvUpQ@crocker.com>
Source record: 113292

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f08eb24$1_5@corp.newsgroups.com...
> David Robbins wrote:
> > try this exercise:
> >
> > 100v AC 50 ohm source ------50 ohm 1 wave------|----75 ohm 1/2 wave----|
50
> > ohm resistive load
>
> The forward power on the 50 ohm line is 200W. The reflected power on the
> 200 ohm line is 0W. The forward power on the 75 ohm line is 208.33W. The
> reflected power on the 75 ohm line is 8.33W. The physical reflection
> coefficient rho = (75-50)/(75+50) = 0.2 making rho^2 = 0.04.
>
> 200W(rho^2) = 8W reflected, 200W(1-rho^2) = 192W transmitted
>
> 8.33W(rho^2) = 0.33W re-reflected, 8.33W(1-rho^2) = 8W not re-reflected
>
> The reflected component voltages on the source side are 20V at zero deg
> and 20V at 180 deg which causes cancellation of the reflected wave toward
> the source. There's 16W of destructive interference.
>
> The forward component voltages on the load side are 120V at zero deg and
> 5V at zero deg which causes a forward voltage on the 75 ohm line of
> 125V. There's 16W of constructive interference. The reflected voltage is
> 25V on the 75 ohm line and arrives out of phase with the 125V of forward
> voltage so the voltage at the impedance discontinuity is 100v.

wow, you skipped over all the questions i asked and went right to the steady
state solution! now how in the world could you do that????? i thought you
didn't believe in the steady state solution?!?!?!?

QED... even cecil believes in the sinusoidal steady state.

550. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 11:42:17 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgin67ie1mic92@corp.supernews.com>
Source record: 113293

That's quite a few db.
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f08e375_5@corp.newsgroups.com...
> H. Adam Stevens wrote:
> > The signal strength range from a simple whip and tuner to (for example)
a
> > 102" whip on a bugcatcher on a hustler base (ie. BIG, RESONANT AND
MATCHED)
> > is more like several s-units than a few db.
>
> As a matter of fact, a 138" whip with SGC-230 was 12 dB down from the top
> rated bugcatcher and screwdriver.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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551. Re: home-made preamplifier

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 11:52:53 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f095efa$0$48895$edfadb0f@dtext02.news.tele.dk>
Source record: 113294

Hello Aj

> I'm thinking of building myself some kind of a active preselector or a
> preamplifier
> to improve my reception. Any ideas? Someone mentioned that here might be
> several

It is my meaning that you do not need any amplifier, on the SW bands it is
not veak signal strenght that is a problem it is the strong signals that is
the problem. I can only recomend you to build a passive preselector, that
is what you realy need, I have build one and it is working very, very well.
You can find the buildinginstructions here

http://www.bavarian-contest-club.de/projects/presel/list.htm

If you have any problems with building one, please mail me.

Regards Max

SWL and HAM.

552. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 11:56:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f096220$1_3@corp.newsgroups.com>
Source record: 113295

froggers wrote:
> Using Aluminium solder makes soldering aluminium seem pretty much the same
> as soldering copper / tinned copper things together - Aluminium needs to be
> really clean though and just scratched clean - I think the oxide layer forms
> instantly (microseconds?) but the aluminium solder flux seems to take care of it.

The oxidation can probably be prevented by doing the soldering in a nitrogen
filled box.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

553. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 12:24:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0968b4$1_3@corp.newsgroups.com>
Source record: 113297

David Robbins wrote:
> wow, you skipped over all the questions i asked and went right to the steady
> state solution! now how in the world could you do that????? i thought you
> didn't believe in the steady state solution?!?!?!?

I have always believed in the steady-state solution, David, because it gives correct answers. What I don't believe in is the steady-state religion with its reflected waves that don't exist. In fact, the s-parameter steady-state solution assumes that forward and reflected waves exist and that two reflected wave components cancel to cause 'b1' to equal zero.

What you seem to have missed is that I performed the steady-state solution using *average powers* to obtain the RMS voltages. Like the HP Application Note, AN 95-1, says, "Power gain and mismatch loss are often of more interest than the corresponding voltage functions."

The entire discussion has boiled down to one point. When wave components cancel in a transmission line and thus cease to exist, what happens to the energy that pre-existed in those canceled wave components?
--
73, Cecil http://www.qsl.net/w5dxp

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554. TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 12:29:34 UTC
From: "Henry B." <hbienert@cox.net>
Message-ID: <IIdOa.14859$1a6.12190@lakeread01>
Source record: 113298

I was given an old antenna this weekend at a housewarming party at our new lake house which is in the CEA "blue" zone for TV rerception.One guest said it was a Yagi. It has 2 elliptical (about 60" by 4" shape) side pieces about 2 feet apart on about a 30" main strut.There are also a few 12" single tubes along the strut.When placed in my attic and connected via cable I get perfect Channel 13;good 6,8;fair 12,poor 32,38 and only a faint 4.With rotation,I can get any of them,including 4
to move up to E-Good.Can I buy another antenna and use some type of cable slitter or must I spring for the $70 RShack rotor?I am NOT using an amplifier.Thanks
--
Hank

555. Re: home-made preamplifier

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 12:39:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f096c17_3@corp.newsgroups.com>
Source record: 113299

Max wrote:
> It is my meaning that you do not need any amplifier, on the SW bands it is
> not veak signal strenght that is a problem it is the strong signals that is
> the problem.

Around here in Texas, atmospheric noise is also a huge problem which
an amplifier won't help.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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556. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 13:53:07 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <fpuigv4gps5i392pkqquv6ddct18ds14te@4ax.com>
Source record: 113300

"Jimmy" <Gfender@carolina.rr.com>
shared these priceless pearls of wisdom:

->Anybody know what the fee air rating of a cantenna resistor is?

About $20.

{;-)

Jim

Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

557. Re: Oil for Heathkit Cantenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 13:54:55 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <7ruigvo5g3p5khukidbogm9k7thhhr0jla@4ax.com>
Source record: 113301

I've had my cantenna for about thirty years. Started it on automatic transmission fluid and have used it ever since. Everything from 5 watt VHF rigs to kilowatt CW and always within the specifications shown on the side of the can.

Cheap. Wal-Mart.

Jim

Rob M <rsmyers@rogers.com>
shared these priceless pearls of wisdom:

->Where do you buy the oil for the Heathkit "Cantenna." Is there a certain specification or name for for it? Are there different types. What do you recommend?
->
->Thanks,
->--- Rob

Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

558. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 13:55:09 UTC
From: richardharrison@webtv.net
Message-ID: <2583-3F097BBD-563@storefull-2316.public.lawson.webtv.net>
Source record: 113304

Cecil, W5DXP wrote:
"Nope, the energy in a canceled EM wave will simply go the other direction, just like canceled light in a non-glare thin-film coating."

Energy which simply goes the other direction is not canceled. It is redirected. Cancel is the wrong word. Reflect is the right word.

In Cecil`s example of a 1/2-wave of higher impedance transmission line inserted in a 50-ohm system, there are internal reflections at each end of the foreign line, but none in the 50-ohm part of the system.

The load resistance is too low for the foreign line.

Reflected voltage has reversed phase..

Total phase shift for voltage in a round-trip through 1/2-wave of foreign transmission line is 360-degrees plus 180-degrees in reflection from the low impedance.

Reflected voltage is out-of-phase with incident voltage at the load and at input to the foreign line.

Reflected current is not reversed in polarity at the load or back at the source of new current.

Reflected voltage and current combine at the input of the foreign line to drop impedance presented to the generator to 50-ohms.

As in the case of incident energy being reflected at the load end of the foreign line, reflected energy is re-reflected at the source end.

The re-reflection puts voltage back in-phase with the new voltage.

Reflected current was not phase inverted by first reflection, nor is it inverted by re-reflection. The impedance is too low on both ends for the foreign transmission line.

New volts and amps entering the transmission system are nearly indistinguishable from the re-reflected energy, so there is a merger.

Best regards, Richard Harrison, KB5WZI

559. Re: TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 14:03:50 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <pKednfuxp4BW4JSiXTWJgQ@comcast.com>
Source record: 113302

Hank,

Another antenna wouldn't do you any good. You need a rotator, as the channels are not all in the same direction. If you were to get a non directional antenna, then all channels would come in equally poor. If you put up two antennas, you can't combine them with a splitte; you would have to install an A/B switch.

Tam/WB2TT
"Henry B." <hbienert@cox.net> wrote in message
news:IIdOa.14859$1a6.12190@lakeread01...
> I was given an old antenna this weekend at a housewarming party at our new
> lake house which is in the CEA "blue" zone for TV rerception.One guest
said
> it was a Yagi. It has 2 elliptical (about 60" by 4" shape) side pieces
about
> 2 feet apart on about a 30" main strut.There are also a few 12" single
tubes
> along the strut.When placed in my attic and connected via cable I get
> perfect Channel 13;good 6,8;fair 12,poor 32,38 and only a faint 4.With
> rotation,I can get any of them,including 4
> to move up to E-Good.Can I buy another antenna and use some type of cable
> slitter or must I spring for the $70 RShack rotor?I am NOT using an
> amplifier.Thanks
> --
> Hank
>
>

560. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 14:07:09 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <i9mcnVZPBY4h45SiRTvUqw@crocker.com>
Source record: 113303

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f0968b4$1_3@corp.newsgroups.com...
> David Robbins wrote:
> > wow, you skipped over all the questions i asked and went right to the
steady
> > state solution! now how in the world could you do that????? i thought
you
> > didn't believe in the steady state solution?!?!?!?
>
> I have always believed in the steady-state solution, David, because it
> gives correct answers. What I don't believe in is the steady-state
religion
> with its reflected waves that don't exist. In fact, the s-parameter
steady-
> state solution assumes that forward and reflected waves exist and that two
> reflected wave components cancel to cause 'b1' to equal zero.
>
> What you seem to have missed is that I performed the steady-state
> solution using *average powers* to obtain the RMS voltages. Like the
> HP Application Note, AN 95-1, says, "Power gain and mismatch loss are
> often of more interest than the corresponding voltage functions."
>
> The entire discussion has boiled down to one point. When wave components
> cancel in a transmission line and thus cease to exist, what happens to the
> energy that pre-existed in those canceled wave components?

and your answer showed just where that happens... by stating that the
voltage at the 50/75 ohm discontinuity is 100v all the wave components are
accounted for right there. the 'cancellation' occurs AT the discontinuity
where you do the summation of currents and voltages, therefore there can be
no waves to cancel further down the transmission line in either direction.

think about destructive interference this way, if you are 1 wavelength down
the line from the discontinuity and are looking for the waves that
destructively interfere with each other what do you see? nothing, the waves
have already canceled each other... so, move closer to the discontinuity,
say at 1/2 wavelength... still nothing, the waves have already canceled...
move closer, still nothing... closer, still nothing, get right up to the
discontinuity, but not touching it... still nothing... there couldn't be
anything at any distance away from the discontinuity or there would not be
complete cancellation at any distance. so what is left? the cancellation
occurs exactly at the discontinuity and the waves never propagate down the
line at all, it is an absolutely necessary part of the wave solution in the
line. if you could ever actually find a point away from the discontinuity
where those waves existed before they canceled each other, they would never

be able to cancel as they would not be in the right phase and magnitude relation to each other to start with, and they can't change relative phases or amplitudes as they propagate.

the same goes on the other side for the constructive interference. you can never find a point away from the discontinuity where you could see the separate waves that haven't combined... so all the interference occurs at a single point and you can draw any size bubble around it you want and sum up powers, voltages, currents, etc and they will all add up... but you really only need to look at that one point.

561. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 14:47:26 UTC
From: Sarge <sarge43@ev1.net>
Message-ID: <vgj21o2i7eipb9@corp.supernews.com>
Source record: 113305

common practice with us is to put in 4 8ft ground rods then connect them all together and then to the tower. A static disipator (baby bottle brush looking gizmo) at the top and its own run of wire to grnd. is a great help.

BB wrote:
> If my tower is just in the ground (not in concrete) do I still need
> the rod? The tower would esentially be grounded by putting it in the
> ground right?
>
> K9SQG wrote:
>
>> Installing a ground rod at the bottom of the tower hole and using
>> heavy braid to connect it to the tower is a way of grounding the
>> tower also and has the benefit of "no bends" in the conductor going
>> to the ground rod. With a ground rod next to the tower/concrete
>> base, essentially half of the area available to the ground rod for
>> dissipating the energy is absent (i.e. the volume presented by the
>> concrete). Of course, after the tower is installed eliminates this
>> option.
>>
>> 73s,
>>
>> Evan

562. Re: Lightning dangers from Faraday's cage comprimise while storm...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 14:50:17 UTC
From: richardharrison@webtv.net
Message-ID: <22938-3F0988A9-408@storefull-2313.public.lawson.webtv.net>
Source record: 113306

Jimmy wrote:
"Runs were on the address lines."

This is reasonable as address lines can operate with external devices.

An example is a data modem connected with a phone line. Phone lines are usually arrested to the same ground used by the commercial power. This is to minimize surge voltage difference between power and phone lines.

If one of these lines takes a hit and the other doesn`t take the same hit by the time it arrives at your machine, your computer may be the most susceptible breakdown site should protection fail.

Any external device, not just a modem, poses a hazard which depends on its exposure to lightning.

Best regards, Richard Harrison, KB5WZI

563. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 15:22:49 UTC
From: W7TI <noway@nohow.com>
Message-ID: <38y9duhs2q3d$.1f1lr663oro06.dlg@40tude.net>
Source record: 113310
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Mon, 7 Jul 2003 09:20:34 +0100, Airy R Bean wrote:

> So, you come home in the evening and see what
> DX you can falsely claim to have worked?
>
> What more evidence do we need that DXing has become a
> CBer's activity?
>
> Back to the days when QSL cards and awards were a
> measure of the individual's technical prowess in specifying,
> designing, manufacturing and setting up his own station.

Lighten up, Airy. Dave's software collection would be outstanding if he charged for it. Having it available for free is an incredible bargain.

If you don't care for automated things, fine, but at least get your facts straight. None of Dave's software works a station for you. None of it builds, assembles or tests your hardware. If you want to live in the '50's, ok, but please don't criticize those of us who like a little progress from time to time.

--
73, Bill W7TI (licensed since 1957)

564. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 15:27:34 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <ra4jgvg8uj6qiv1ecf6cnhb3m71kt5n6hv@4ax.com>
Source record: 113307

On Sun, 06 Jul 2003 21:02:09 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Actually, I've made the connection as one poster suggested -- clamped
>the wire under a stainless steel clamp. It does seem to be slowly
>corroding the aluminum, but after 20 years outside in the rain, the
>corrosion still isn't bad. Some Noalox would probably would have helped.
>
>Roy Lewallen, W7EL

Best way is to have a stainless clamp with a tab that first touches
the aluminum. The copper wire then goes between the tab and the clamps
band. That way the copper wire never touches the aluminum. Copper will
cause the aluminum to corrode quickly.

With a standard clamp you are left pretty much with contact of the
wire only to the stainless clamp. The other part of the clamp
providing contact to the aluminum.

The same type of clamp with a tab is recommended when connecting
copper wire to a galvanized tower. The copper will quickly destroy the
galvanized coating if in direct contact with it.

73
Gary K4FMX

565. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 15:42:44 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bec4dm$3f30g$1@ID-134747.news.dfncis.de>
Source record: 113309

Back in the "OLD CORPS" where I learned to solder
strength was always built mechanically, not wit
solder. When making a connection if you could not
identify every lead in a connection you had used
far too much solder. Does not matter whether it
is copper on copper, aluminum on aluminum, or
whatever on whatever, solder is for electrical
connection only not mechanical strength.

--
73 es cul

wb3fup
a Salty Bear

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in
message news:5cG0YuJEvUCEAC@ifwtech.co.uk...
> Roy Lewallen wrote:
> >I recall reading a treatise many years ago
where the author made the
> >case that any attempt to solder copper to
aluminum was doomed to
> >failure. His argument was that there would
inevitably be corrosion at
> >the interface due to the large electrochemical
difference between the
> >two metals and, although the joint might be
initially sound, it was
> >bound to fail after some length of time.
> >
> >I've never tried soldering aluminum so don't
have any direct
> >experience. Has anyone had an aluminum-copper
joint that's remained
> >strong after several years? If so, indoors or
outdoors?
>
> Aluminum-soldered connections to both brass and
aluminum have lasted
> more than ten years outdoors on the moonbounce
array, here in the
> moderately damp English climate... and they'll
probably be good for
> another ten.
>

> Aluminum soldering is possible, but not easy.
Here are a few tips that I
> found out the hard way.
>
> The connections were all drilled through the
larger piece and pinned
> with a screw for mechanical strength, so the
joint cannot possible flex
> or move. Then add the solder for electrical
continuity *only*. This is
> important for antenna work - never rely on
solder alone for mechanical
> strength. It doesn't ever have much strength,
and if you allow solder to
> be flexed by the wind, it will very quickly
fatigue, crystallize and
> break.
>
> Aluminum soldering is tricky. Practise on some
scrap pieces, because you
> *will* make a mess of it first time!
>
> To make the solder work, it is *essential* to
file and scrape the
> aluminum absolutely clean and bright, and to
degrease it with solvent.
> (A thin, invisible film of aluminum oxide
re-forms instantly. The
> special flux will take care of that, but don't
expect it to handle any
> corrosion that's heavy enough to be visible.)
Whenever I tried a
> short-cut, the solder failed to run properly and
the whole thing turned
> into a cruddy mess. The cleanup/rescue job then
took much, much longer
> and the finished result was never as good as
when I'd taken the trouble
> to get it right first time.
>
> Because aluminum is very good at conducting heat
away from the joint,
> and the metal pieces will probably be large,
you'll need a torch (butane
> is OK, but a butane/propane mix gives a bit more
heating power). Use the
> hot gases *outside* of the visible flame to heat
the metal, not the
> flame itself. Move the flame all around the
metal - front, sides, top,

> bottom and around the back - so it all comes up
to the same temperature
> at the same time. From time to time, remove the
flame and just touch the
> hot metal with the end of the solder, until the
solder melted and runs
> freely around the joint.
>
> Don't let the aluminum get too hot! The melting
temperature of aluminum
> solder is quite high, and there is a narrow
range between the metal
> being hot enough to melt the solder, and
becoming so hot that it
> oxidizes. If you see a cruddy oxide layer form,
you've already passed
> the point of no return and the joint is a
failure. The *only* way
> forward is then to let it cool, file away all
the crud and start again.
> Do *not* try to rescue an oxidized joint by
adding more heat and more
> solder - it won't work, and it only makes the
cleanup job harder.
>
> When the pieces are just hot enough, the solder
runs freely just like
> normal tin-lead, and makes a neat fillet. (If
the joint looks at all
> lumpy and rough, it's a failure.) When the
aluminum surface is properly
> 'tinned' with the special solder, it's possible
to continue with regular
> cored tin-lead solder, which is easier to work.
>
> On my antennas, the finished joints were lightly
sprayed with
> polyurethane to keep moisture away, but this
flaked off after a few
> years. After ten years there was only light
corrosion, confined to the
> solder itself, and it wasn't at all serious.
>
> So much for the good news. The bad news is that
the I tried several
> aluminum solders, and only one of them worked
(for me). Unfortunately
> that solder only came in little packets that had
been re-branded by the
> supplier, who have since discontinued it. I

never did find out what the
> original make was.
>
>
> --
> 73 from Ian G3SEK 'In Practice'
columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF
DX Book'
> http://www.ifwtech.co.uk/g3sek

566. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 15:42:46 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <u15jgvg0j50115snka4j1o34se6elohm0b@4ax.com>
Source record: 113308

4 ground rods is a great help but it would be much better to place
them around the tower and run a separate lead from each to the tower.
Much lower inductance that way. If they are placed around the tower,
tying the rods together is a waste of wire. The extra wire could be
put to better use as a radial.

A ground lead running down the tower is also a waste of wire unless
the tower is made of wood. A metal tower will have many times less
inductance than the wire you run down it. Again the extra wire would
be much better if used as a buried radial.

Bonding the tower leg joints with a strap around each is a help.

The only help the static dissipater brushes give is decoration on the
tower. If for some reason someone prefers that look then ok.
For any kind of lightning protection a rabbits foot hung on the tower
works as well.

73
Gary K4FMX

On Mon, 7 Jul 2003 09:47:26 -0500, "Sarge" <sarge43@ev1.net> wrote:

>common practice with us is to put in 4 8ft ground rods then connect them all
>together and then to the tower. A static disipator (baby bottle brush
>looking gizmo) at the top and its own run of wire to grnd. is a great help.
>
>
>
>
>BB wrote:
>> If my tower is just in the ground (not in concrete) do I still need
>> the rod? The tower would esentially be grounded by putting it in the
>> ground right?
>>
>> K9SQG wrote:
>>
>>> Installing a ground rod at the bottom of the tower hole and using
>>> heavy braid to connect it to the tower is a way of grounding the
>>> tower also and has the benefit of "no bends" in the conductor going
>>> to the ground rod. With a ground rod next to the tower/concrete
>>> base, essentially half of the area available to the ground rod for
>>> dissipating the energy is absent (i.e. the volume presented by the
>>> concrete). Of course, after the tower is installed eliminates this
>>> option.
>>>

>>> 73s,
>>>
>>> Evan
>

567. Re: TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 15:50:55 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bec4t1$3dtsc$1@ID-134747.news.dfncis.de>
Source record: 113311

Yes you can combine the antennas with a splitter.
That is why they are called splitter/combiners.
The bad news is that you get almost one half the
energy out of a splitter/combiner that you put in.
There is a nearly 3db (50%) insertion loss. If
you had two antennas, each pointed in a different
direction you might solve your problem. The rotor
is probably the most aestically pleasing solution,
and not that much more expensive than the best
antenna mounted amplifier that R/S sells, $60 for
the amplifier vs. $70 for the rotor. With an
antenna the amp should be mounted at the antenna,
it is broadbanded (if you plan to operate your
station at all, no one it the house will watch TV
while you are on the air.

--
73 es cul

wb3fup
a Salty Bear

"Tarmo Tammaru" <t-tammaru@home.com> wrote in
message news:pKednfuxp4BW4JSiXTWJgQ@comcast.com...
> Hank,
>
> Another antenna wouldn't do you any good. You
need a rotator, as the
> channels are not all in the same direction. If
you were to get a non
> directional antenna, then all channels would
come in equally poor. If you
> put up two antennas, you can't combine them with
a splitte; you would have
> to install an A/B switch.
>
> Tam/WB2TT
> "Henry B." <hbienert@cox.net> wrote in message
> news:IIdOa.14859$1a6.12190@lakeread01...
> > I was given an old antenna this weekend at a
housewarming party at our new
> > lake house which is in the CEA "blue" zone for
TV rerception.One guest
> said
> > it was a Yagi. It has 2 elliptical (about 60"

by 4" shape) side pieces
> about
> > 2 feet apart on about a 30" main strut.There
are also a few 12" single
> tubes
> > along the strut.When placed in my attic and
connected via cable I get
> > perfect Channel 13;good 6,8;fair 12,poor 32,38
and only a faint 4.With
> > rotation,I can get any of them,including 4
> > to move up to E-Good.Can I buy another antenna
and use some type of cable
> > slitter or must I spring for the $70 RShack
rotor?I am NOT using an
> > amplifier.Thanks
> > --
> > Hank
> >
> >
>
>

568. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 15:59:45 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f09997d_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113312
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Lighten up, Bill. Ham Radio is all about personal
technical achievement, and not about some automated
process doing the work for you. If the DX is going to be identified and
tracked for you, with your rig being tuned for you, as was implied,
then you might as well claim DXCC from using a GSM mobile
phone, because your "achievement" will be indistinguishable.

As to price, a CB rig being given away for free is still a CB rig.

Now that the Morse requirement is being done away with,
perhaps it is time to ask again what is the difference between a CB
operator and a Radio Ham?

W7TI <noway@nohow.com> wrote in message
news:38y9duhs2q3d$.1f1lr663oro06.dlg@40tude.net...
> On Mon, 7 Jul 2003 09:20:34 +0100, Airy R Bean wrote:
> > So, you come home in the evening and see what
> > DX you can falsely claim to have worked?
> > What more evidence do we need that DXing has become a
> > CBer's activity?
> > Back to the days when QSL cards and awards were a
> > measure of the individual's technical prowess in specifying,
> > designing, manufacturing and setting up his own station.
> Lighten up, Airy. Dave's software collection would be outstanding if he
> charged for it. Having it available for free is an incredible bargain.
> If you don't care for automated things, fine, but at least get your facts
> straight. None of Dave's software works a station for you. None of it
> builds, assembles or tests your hardware. If you want to live in the
> '50's, ok, but please don't criticize those of us who like a little
> progress from time to time.

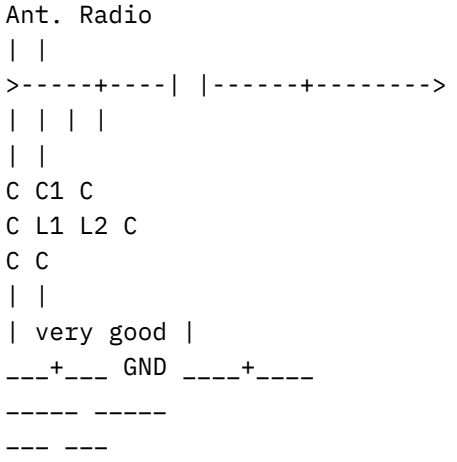
569. Re: Lightning dangers from Faraday's cage comprimise while storm chasing/spotting?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 16:36:38 UTC
From: K7JEB <k7jeb@arrl.no_spam.net>
Message-ID: <qkhOa.43907$3o3.2922874@bgtnsc05-news.ops.worldnet.att.net>
Source record: 113313

> Henry Kolesnik wrote:
> "---Dan, N5AR was travelling down an interstate and lightning hit the 2
> meter whip on his van and blew the antenna, coax, and radio to
> pieces---."

> Richard Harrison, KB5WZI:
> It is surprising that the lightning created such havoc, especially if
> the antenna was not a mag-mount but was mounted on a through the roof
> fitting. The spacing between center conductor and roof or inside the
> fitting or coax is so small. RG-58 breaks down at not much more than
> 1400 volts peak. Evaporation of the antenna fitting or coax at the
> fitting should have kept the lightning from the radio.

A highpass filter could serve as a lightning arrestor.
In the one shown below, for VHF, C1 could be a 27pF
'doorknob' capacitor rated at 5kV and L1, L2 could each
be 5 turns of #12 wire, 1 inch in diameter. I think you
get the idea.



Jim Bromley, K7JEB k7jeb(at)arrl(dot)net
Glendale, Arizona

570. Re: TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 16:42:58 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <JLWdnfADy_OLPpSiXTWJhA@comcast.com>
Source record: 113314

You do not want a slitter. Trust me. You will get ghosts, plus lose half
your signal.

Tam/WB2TT
"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bec4t1$3dtsc$1@ID-134747.news.dfncis.de...
> Yes you can combine the antennas with a splitter.
> That is why they are called splitter/combiners.
> The bad news is that you get almost one half the
> energy out of a splitter/combiner that you put in.
> There is a nearly 3db (50%) insertion loss. If
> you had two antennas, each pointed in a different
> direction you might solve your problem. The rotor
> is probably the most aestically pleasing solution,
.....

571. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 16:57:06 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <bec8p2$29l8$1@news1.tribune.com>
Source record: 113315

Reg's program Dipole 3 has default calculations for a "standard" G5RV and
lets you adjust each item your self.
My 90 foot dipole with Paralell line does fine.
A standard G5RV with the Standard Coax length loses 56% of its power in the
coax.
http://www.btinternet.com/~g4fgq.regp/
KA9CAR

"Rob Stampfli" <restamp@hotmail.com> wrote in message
news:SD0Oa.148437$BA.50588475@twister.columbus.rr.com...
> I got on the new 60m band today using my G5RV and had a few
> very nice QSOs.
>
> The G5RV is essentially a 102 ft dipole. Empirically, it tunes
> up fine on 60m (with a transmatch). My question is: How much
> gain does it exhibit over a 88 ft true-blue 60m dipole? My guess:
> Not much, as it is only 16% long. However, the FCC does mandate
> that we "do the calculations" for non-dipole antennas to ensure
> we do not exceed the 50W ERP requirement.
>
> So, can anyone tell me what the gain of a G5RV exhibits on the
> 60m band so I can determine what power limits I need to observe
> for that band?
>
> Thanks in advance,
> Rob Stampfli

572. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 17:41:42 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09B0D6.B7D3B92F@uci.edu>
Source record: 113316

W5DXP wrote:
> TRANSMISSION LINES WOULD WORK EXACTLY THE SAME WAY IN REALITY IF THE
> STEADY-STATE MODEL HAD NEVER EXISTED!

The same holds true for any model one might happen to use in that
sentence.

ac6xg

573. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 17:44:34 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09B182.4DA23925@uci.edu>
Source record: 113219

W5DXP wrote:
> Now all you have to
> convince us of is those canceled waves carried zero energy. Good luck.

Define once an for all what you mean by "carry energy". Thanks.

jk

574. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 17:50:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09b503$1_4@corp.newsgroups.com>
Source record: 113318

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "Nope, the energy in a canceled EM wave will simply go the other
> direction, just like canceled light in a non-glare thin-film coating."
>
> Energy which simply goes the other direction is not canceled. It is
> redirected. Cancel is the wrong word. Reflect is the right word.

I didn't say the *energy* was canceled, Righard. I said the *wave* was canceled. Energy cannot be canceled but waves can be canceled. Canceled waves don't reflect, they are destroyed. Energy left over from wave cancellation event can be thought of as being reflected since it changes directions.

> As in the case of incident energy being reflected at the load end of the
> foreign line, reflected energy is re-reflected at the source end.

What is the mechanism of physics that causes 100% re-reflection? There is no short, open, or pure reactance at the match point.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

575. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 17:52:28 UTC
From: 6212hgk{invert}@newsguy.com
Message-ID: <3f09b319.9890015@News.CIS.DFN.DE>
Source record: 113317
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Sat, 5 Jul 2003 01:42:37 +0200, "c" <no@spam.com> wrote:

>Hello All,
>
>I just saw the new yaesu vx-7r is also close
>to that price (vx-5, and th-f7)!
>
>What should I do?

Although the VX-7R has improved features, the waterproofed speaker makes
hearing much more difficult to me. Please do yourself a favor and listen
to both of them side by side before purchase.
<snip>
--
Nobody but a fool goes into a federal counterrorism operation without duct tape - Richard
Preston, THE COBRA EVENT.

576. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:00:16 UTC
From: olllllllo@sbcglobal.net
Message-ID: <QyiOa.257$5d6.45@newssvr32.news.prodigy.com>
Source record: 113220
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Lighten up, Francis...

When you key a mic, or tap a key, there is an "automated process"
taking place.

That's right. "PERSONAL technical achievement". Perhaps there are
HAMS who enjoy modern technology interlacing with traditional items
like HF. Perhaps this particular HAM enjoys the orchestration of various
software processes that he manages and configures to enhance his very
PERSONAL technical achievement within the hobby?

Perhaps it is time to ask again, what have all these whiny, crybaby types
done to advance the service, or at least keep it in line with the real
world?

As far as CB-esque operators, HF is chock FULL of them, Morse code
requirment or NOT. I avoid HF like I avoid CB, and for the EXACT same
reasons!

Personally, I think an activity like HAM radio should be one where each
licensee must make certain achievements, or they forfeit the license. Such
as advance from 5wpm to something higher, or integrating modern technology
into the communication mix. If CW is a mandatory requirement (and I think it
should be), then so should areas like the digital modes, and the microwave
end.

Do you know your DHCP from your RHCP or LHCP? Doubt it!

Sitting back saying CW is the end-all, and bitching like 5 year olds does
absolutely
nothing for the hobby. At least nothing good.

As you were. 73.

"Airy R Bean" <SPAM@trap> wrote in message
news:3f09997d_3@mk-nntp-1.news.uk.worldonline.com...
> Lighten up, Bill. Ham Radio is all about personal
> technical achievement, and not about some automated
> process doing the work for you. If the DX is going to be identified and
> tracked for you, with your rig being tuned for you, as was implied,
> then you might as well claim DXCC from using a GSM mobile
> phone, because your "achievement" will be indistinguishable.
>
> As to price, a CB rig being given away for free is still a CB rig.
>
> Now that the Morse requirement is being done away with,

> perhaps it is time to ask again what is the difference between a CB
> operator and a Radio Ham?
>

577. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:07:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09b907_4@corp.newsgroups.com>
Source record: 113221

David Robbins wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> and your answer showed just where that happens... by stating that the
> voltage at the 50/75 ohm discontinuity is 100v all the wave components are
> accounted for right there.

Yes, that is exactly what I have been saying. My web page article specifically states that *ALL* of the destructive interference and constructive interference happens at the match *point* and nowhere else. Here is a quote from that article which I wrote about a year ago:

"The impedance discontinuity point, like other geometric points, is infinitesimal and has no dimensions. In other words, the source side of the impedance discontinuity point and the load side of the impedance discontinuity point are the same point and are not physically separate from each other. Since a diagram cannot occupy a point, any diagram is, of necessity, in two dimensions but that does not mean or imply that anything happens at any real-world distance from either side of the point. EVERYTHING DISCUSSED HERE HAPPENS AT EXACTLY THE IMPEDANCE DISCONTINUITY POINT, NOT ANYWHERE ELSE." Capitals here, bold italics in the article.

> the 'cancellation' occurs AT the discontinuity
> where you do the summation of currents and voltages, therefore there can be
> no waves to cancel further down the transmission line in either direction.

Yes, exactly what my web article says. See above.

> think about destructive interference this way, if you are 1 wavelength down
> the line from the discontinuity and are looking for the waves that
> destructively interfere with each other what do you see? nothing, the waves
> have already canceled each other... so, move closer to the discontinuity,
> say at 1/2 wavelength... still nothing, the waves have already canceled...
> move closer, still nothing... closer, still nothing, get right up to the
> discontinuity, but not touching it... still nothing... there couldn't be
> anything at any distance away from the discontinuity or there would not be
> complete cancellation at any distance.

Yes, exactly as explained in my web article. See above.

> the cancellation
> occurs exactly at the discontinuity and the waves never propagate down the
> line at all, ...

Yes, exactly as explained in my web article. See above.

> the same goes on the other side for the constructive interference. you can
> never find a point away from the discontinuity where you could see the
> separate waves that haven't combined... so all the interference occurs at a
> single point and you can draw any size bubble around it you want and sum up
> powers, voltages, currents, etc and they will all add up... but you really
> only need to look at that one point.

Yes, exactly as explained in my web article. See above. It seems that you now agree with me. I have *NEVER* said the interference occurs anywhere except at the match point.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

578. Re: Lightning dangers from Faraday's cage comprimise while storm c...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:09:22 UTC
From: richardharrison@webtv.net
Message-ID: <17080-3F09B752-151@storefull-2314.public.lawson.webtv.net>
Source record: 113223

Jim, K7JEB wrote:
"A highpass filter could serve as a lightning arrester."

Lightning contains a spectrum of frequencies. Any bandpass restriction reduces exposure to damage. Most applications don`t require allpass connections. Might as well limit passband.

Tower lighting chokes are made which carry a lot of amps. These are used on AM broadcast tower lighting circuits to avoid shorting the r-f on the tower to ground through the tower lighting circuits. They also very successfully keep lightning out of the plant`s a-c circuits. These chokes with bypass capacitors on the plant side form a lowpass filter.

I`ve used the same tower lighting chokes very successfully to protect a wide variety of electrical equipment from surges on the power line. My first protection job was the first Motorrola transistor base station to be marketed. Motorola tried many schemes to prevent lightning destruction to no avail. My tower lighting chokes with appropriate arresters and capacitors solved the problem. It was immediately widely imitated and used for many other devices, not just transistor radios.

Best regards, Richard Harrison, KB5WZI

579. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:12:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09ba37_4@corp.newsgroups.com>
Source record: 113222

Jim Kelley wrote:

> W5DXP wrote:
>>TRANSMISSION LINES WOULD WORK EXACTLY THE SAME WAY IN REALITY IF THE
>>STEADY-STATE MODEL HAD NEVER EXISTED!
>
> The same holds true for any model one might happen to use in that
> sentence.

Exactly! Including the one that you keep repeating over and over,
ad infinitum.
--
73, Cecil http://www.qsl.net/w5dxp

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580. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:18:06 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f09bb54_1@mk-nntp-1.news.uk.worldonline.com>
Source record: 113225
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Yup, and TCP/IP is nowt to do with Ham Radio. The circularly
polarised antennae are more to do with Radio Astronomy than
Ham Radio.

> Do you know your DHCP from your RHCP or LHCP? Doubt it!

581. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:25:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09bd2a_4@corp.newsgroups.com>
Source record: 113226

Jim Kelley wrote:
>
> W5DXP wrote:
>>Now all you have to
>>convince us of is those canceled waves carried zero energy. Good luck.
>
> Define once an for all what you mean by "carry energy". Thanks.

The power in a traveling wave is |V*I|. That's the number of joules
of energy that passes a point in a second. Waves CANNOT exist without
energy. If waves contain energy, then they give up that energy when
they are destroyed by wave cancellation. The waves cease to exist
at the point of cancellation. The energy in those waves CANNOT cease
to exist. You agree that wave cancellation exists. Walter Maxwell
agrees that wave cancellation exists. Steven Best agrees that wave
cancellation exists. The question is: What happens to the pre-existing
energy in waves that are going to be canceled. You somehow make it
disappear, at least in your wet dreams, by saying canceled waves didn't
contain any energy before they were canceled. (Those grapes were probably
sour! :-) Steven Best just lets the energy fade away toward the source
but never reach the source. Walter Maxwell has his "virtual short".
Energy direction-of-flow reversal during the wave cancellation event makes
the most sense to me from a Conservation of Energy point of view, and I am
working on a physics explanation hopefully acceptable to you and others.
--
73, Cecil http://www.qsl.net/w5dxp

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582. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:26:24 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <j56dnVSvjvAeJpSiRTvUqw@crocker.com>
Source record: 113224

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f09b907_4@corp.newsgroups.com...
> David Robbins wrote:
>
> > "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> > and your answer showed just where that happens... by stating that the
> > voltage at the 50/75 ohm discontinuity is 100v all the wave components
are
> > accounted for right there.
>
> Yes, that is exactly what I have been saying. My web page article
specifically
> states that *ALL* of the destructive interference and constructive
interference
> happens at the match *point* and nowhere else. Here is a quote from that
article
> which I wrote about a year ago:

but you see, you have been talking about waves getting canceled... a wave can not exist at a POINT. so all the diagrams you were drawing about waves going this way and that from the mismatch point were misleading those who hadn't read your web page, which is probably most of those on this group. your further arguments about optics and trying to overlay phase shifted lasers were just adding to that impression that you really were trying to cancel waves somewhere down the line which is obviously impossible.

583. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:27:15 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09BB83.CC9357C5@uci.edu>
Source record: 113228

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>TRANSMISSION LINES WOULD WORK EXACTLY THE SAME WAY IN REALITY IF THE
> >>STEADY-STATE MODEL HAD NEVER EXISTED!
> >
> > The same holds true for any model one might happen to use in that
> > sentence.
>
> Exactly! Including the one that you keep repeating over and over,
> ad infinitum.

That is your claim. Mine is that your model fits the bill. :-)

jk

584. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:37:07 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09bff6_4@corp.newsgroups.com>
Source record: 113229

David Robbins wrote:
> but you see, you have been talking about waves getting canceled... a wave
> can not exist at a POINT.

OK, to be entirely technically correct, wave*fronts*, existing at a point,
are what get canceled. Jeeezzzzz, that's just a silly semantics difference.

> your further arguments about optics and trying to overlay phase shifted
> lasers were just adding to that impression that you really were trying to
> cancel waves somewhere down the line which is obviously impossible.

Give me an ever-lovin' break! I would have been extremely stupid to assert
such an impossibility. You know that I *NEVER* said anything like that!
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

585. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:38:33 UTC
From: olllllllo@sbcglobal.net
Message-ID: <J6jOa.263$ne6.146@newssvr32.news.prodigy.com>
Source record: 113227
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Are they?

Granted DHCP is a protocol for TCP/IP networks; however,
TCP/IP networking and HAM radio have overlaps and literal
interconnections.

Radio astronomy? Hmmm...RHCP and LHCP have more to
do with wave polarity than astronomy.

Looks like you might have done a rudimentary search on the
Internet for these technologies.

In any case, the point being that NO aspect of the ARS is more
important than the next. Since life and knowledge are dynamic,
so will be activities such as the ARS.

As Morse code is a required proficiency, so should all other
aspects, even TCP/IP, encryption, and yes, software automation.

Licenses should be renewed and re-tested for every 5 years or
less.

All in the name of personal technical achievement. :-)

73

"Airy R Bean" <SPAM@trap> wrote in message
news:3f09bb54_1@mk-nntp-1.news.uk.worldonline.com...
> Yup, and TCP/IP is nowt to do with Ham Radio. The circularly
> polarised antennae are more to do with Radio Astronomy than
> Ham Radio.
>
> > Do you know your DHCP from your RHCP or LHCP? Doubt it!
>
>
>

586. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 18:50:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09c307_4@corp.newsgroups.com>
Source record: 113230

Jim Kelley wrote:
> That is your claim. Mine is that your model fits the bill. :-)

Mea Culpa, I keep forgetting about your omniscience. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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587. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 19:06:30 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09C4B6.D060C3DA@uci.edu>
Source record: 113233

W5DXP wrote:
>
> Jim Kelley wrote:
> >
> > W5DXP wrote:
> >>Now all you have to
> >>convince us of is those canceled waves carried zero energy. Good luck.
> >
> > Define once an for all what you mean by "carry energy". Thanks.
>
> The power in a traveling wave is |V*I|.

But power doesn't propagate.

> If waves contain energy, then they give up that energy when
> they are destroyed by wave cancellation.

Define "contain energy".

Energy is certainly required in order create a wave. But energy is not consumed by wave propagation. If energy is not utilized at the terminus, no energy is transferred by the wave to the terminus. Energy may or may not be transferred by other waves associated with the source which stimulated the waves in question.

> The energy in those waves CANNOT cease
> to exist.

Define "energy in waves". Waves launched from a boundary are representative of an amount of energy available at that boundary, but they are not necessarily indicative of a transfer of energy in the direction of those waves - as we can see in the case of wave cancellation.

> The question is: What happens to the pre-existing
> energy in waves that are going to be canceled.

First of all, I have no idea what "pre-existing energy" is supposed to mean. Secondly, I don't know how to parse "waves that are going to be cancelled". Are you asking about what happens in the transient period?

73, ac6xg

588. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 19:14:10 UTC
From: Hank Oredson <horedson@att.net>
Message-ID: <6EjOa.43125$0v4.2962203@bgtnsc04-news.ops.worldnet.att.net>
Source record: 113231
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f09997d_3@mk-nntp-1.news.uk.worldonline.com...
> Lighten up, Bill. Ham Radio is all about personal
> technical achievement, and not about some automated
> process doing the work for you.

Guess I better toss out my old Vibroplex.
Gotta send them dots myself personally, instead of using a tool.

> If the DX is going to be identified and
> tracked for you, with your rig being tuned for you, as was implied,

Seems like you have no clue what you are talking about.

> then you might as well claim DXCC from using a GSM mobile
> phone, because your "achievement" will be indistinguishable.

Guess I should never ever call up my buddy to tell him
S9SS is 20 over nine on six meters. He can find that out
for himself. Gotta unsubscribe to this newsgroup, since
I might accidentially read one of those newsletters about
upcoming DXpeditions. No fair being notified in advance,
gotta find it out by hearing them. Scrap the subscription
to QST ... or at least NEVER read the DX column.
Rotator? Who needs a rotator! Quick run outside and
turn the beam by hand. Who needs filters? Train those
ears and they will be better than any 200 Hz filter.

Tools is tools.

--

... Hank

Hank: http://horedson.home.att.net
W0RLI: http://w0rli.home.att.net

589. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 19:15:04 UTC
From: Hank Oredson <horedson@att.net>
Message-ID: <YEjOa.43126$0v4.2962673@bgtnsc04-news.ops.worldnet.att.net>
Source record: 113232
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f09bb54_1@mk-nntp-1.news.uk.worldonline.com...
> Yup, and TCP/IP is nowt to do with Ham Radio.

Eh what?
ID ten T error.
Troll.

--

... Hank

Hank: http://horedson.home.att.net
W0RLI: http://w0rli.home.att.net

590. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 19:27:14 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09C992.3CF5FA23@uci.edu>
Source record: 113234

W5DXP wrote:
> "Consider a region of space, enclosed within an imaginary surface."
>
> This is exactly what I did with the transmission line impedance
> discontinuity point which you implied was an invalid thing to do.
>
> "The rate at which EM energy flows out of this region is found by
> integrating P over the enclosing surface. ... But, if the energy
> is flowing out of the region, there must be a corresponding loss
> of EM energy stored within the region."

Energy is obviously NOT conserved within that boundary. The energy inside the boundary decreses as energy passes out of the bounded volume. It's a perfect example of what I was saying. It's exactly the same as the power plant example I gave. Jeez.

> Thus, contrary to your
> assertions, Pfwd1 + Pref2 = Pfwd2 + Pref1, is a statement of the
> Conservation of Energy principle.

Like I said before, Pfwd1 + Pref2 = Pfwd2 + Pref1 is not the Law of Conservation of Energy - contrary to your assertion.

73, ac6xg

591. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 19:41:18 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09CCDE.EFD09990@uci.edu>
Source record: 113236

W5DXP wrote:
>
> David Robbins wrote:
> > no, it's physics... what is the wave equation that describes this
> > cancellation phenomena and the determination of the 'other possible
> > direction'??

> There's only two directions in a transmission line.

Are you claiming the effect is unique to transmission lines? In not, answer the question. (Hint: wave equations have an amplitude, a frequency, a phase, an a direction. They are usually expressed as an instaneous amplitiude as a function of position or time.)

> Wave1 superposed with wave2 = 0V and 0A. What happens to the energy?

Sure doesn't look like it went the way you said it was heading. It can't just disappear, and there's no way for it to turn around. Maybe you're just on the wrong track with all this?

73, ac6xg

592. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 19:41:42 UTC
From: Harry Bloomfield <harry.m1bytNOSPAM@tiscali.co.uk>
Message-ID: <MPG.1973dd56687a4dda98973c@News.CIS.DFN.DE>
Source record: 113235
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

In article <3f09997d_3@mk-nntp-1.news.uk.worldonline.com>, SPAM@trap
says...
| Now that the Morse requirement is being done away with,
| perhaps it is time to ask again what is the difference between a CB
| operator and a Radio Ham?
|

You don't know? Typical CB'er!

--
Regards,
Harry (M1BYT)...

Remove the 'NOSPAM' in my email address to reply.

Free Amateur Radio Courses:-
http://www.ukradioamateur.org

593. Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 20:21:00 UTC
From: vswrref@hotmail.com
Message-ID: <3f09d544.5385368@national-news.stargate.net>
Source record: 113237

Hi all,

I've been trying to find some data on what happens to the feedpoint impedence of an antenna when the thickness of the wire increases. I know for a fact the bandwidth will increase somewhat but what does the impedence do, say going from 14 gauge to 10 gauge copper wire? Does it increase or decrease?

Jeff Y.

594. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 20:41:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09DB01.400ACAC4@uci.edu>
Source record: 113238

W5DXP wrote:
> What you are saying is that no energy is flowing when two light waves
> engage in destructive interference and a dark ring results.

No energy is flowing from the light source to the dark ring in an
interference pattern, that is correct.

> You
> know that normal interference has absolutely no effect on energy flow.

The interference pattern DETERMINES how energy flows. And you know
that!@!

> The two waves don't even know the other wave exists.

The rest of the universe does know, however. That's where I am. Who
knows where you are.

> > By the way, the equation doesn't express what you said it does.
>
> But we can assume it expresses what Johnson says it does and he disagrees
> with you. :-)

Unless you're speaking for him, that's probably something he and I
should work out, doncha think?

> > Cecil has a problem with the fact that a transmission
> > line can have EM energy stored within it without there necessarily being
> > a continuous transfer of EM energy somewhere.

> You can prove your point by offering an example of a single source, single
> feedline, single load system that has standing waves without reflected
> waves.

My point has nothing to do with that strawman.

You're unable to prove your point by offering a single example where
electromagnetic energy changes direction without impinging on a
reflective surface, and so instead you insult the people who try to
explain the phenomenon to you. I feel sorry for you, OM.

73, ac6xg

595. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 21:36:17 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vgjprecgdv2va5@corp.supernews.com>
Source record: 113239
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Almost 140 Beans in the FCC data. Nothing like Airy. He provides
neither a call, a real E-mail address, nor a location.
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

596. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 21:45:26 UTC
From: BB <billybob@NOSPAMr3dnecks.nf.net>
Message-ID: <3F09E9F5.2A8B59EB@NOSPAMr3dnecks.nf.net>
Source record: 113243

> Bonding the tower leg joints with a strap around each is a help.
>

The tower legs are connected at the bottom with the tower base, i assume that will serve the same purpose?

I took the grounding wire off the tower and ran a radial out to the end of my property under the sod (about 4 inches down). Should I run a few more of these in different directions? The tower is right next to the house, right now i have one coming out perpendicular to the house should I put 2 more 45 degrees from the first one. Kind of like this?

```
_________house____________
A <--tower
/ | \
/ | \
/ | \ <--- buried radials
/ | \
/ | \
/ | \
```

I'm putting a metal hose clamp on the tower to keep the ground wires attached to the tower legs, is there a better option? Should each radial come for a different tower leg, or does it matter since the legs are all attached to the metal base.

thanks for everyone's suggestions

597. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 21:45:50 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f09eb98_4@news1.prserv.net>
Source record: 113240

Go to www.polyphaser.com and look at the tech notes. Much of the advice you will get here is in error, some even dangerous. Follow the National Electrical Code and the latest version of the Lightning Protection Code, and you will avoid many problems.

Problems like braid deteriorates rapidly.

Problems like concrete explodes when you run too much current through a conductor imbedded in it.

Again, don't listen to me, read the professional codes.

--
Crazy George
Remove NO and SPAM from return address
"BB" <billybob@NOSPAMr3dnecks.nf.net> wrote in message
news:3F073F55.B0400907@NOSPAMr3dnecks.nf.net...
> I've got a 20ft aluminum tower with a 10 steel mast on the top of it
> with a 2m antenna encased in pvc pipe. I'm running coax through a
> conduit pipe in the side of the house into my shack. What's the
> cheapest way to ground this setup for lightening? I've got a 6ft copper
> pipe and 40 feet of aluminum grounding wire. Do i just drive the pipe
> into the ground, wrap the groundwire around it, run it up the tower and
> wrap it around the mast?
>
> thanks in advance for any advice anyone has.
>
>

598. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 21:47:55 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09EA8B.EFECF3B1@uci.edu>
Source record: 113242

W5DXP wrote:
> My web page article specifically
> states that *ALL* of the destructive interference and constructive interference
> happens at the match *point* and nowhere else.

So then you're claiming that constructive interference between waves
traveling toward the load only occurs AT the match point, and that those
waves no longer exist beyond the match point. Is that right?

> I have *NEVER* said the interference occurs anywhere except at
> the match point.

So are you saying that interference in a transmission line occurs only
at single point?

73, ac6xg

599. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 21:52:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09edac_5@corp.newsgroups.com>
Source record: 113241

Jim Kelley wrote:
> But power doesn't propagate.

From the IEEE Dictionary: "power-flow vector - ... power per
unit area *propagating* in the wave." emphasis mine

> Define "contain energy".

I already did, Jim. |V*I| = power. I don't think you realize that there
is a Poynting vector for forward power and a Poynting vector for reflected
power such that their ratio equals |rho|^2. From "Fields and Waves in
Communications Electronics", Ramo, Whinnery, & Van Duzer, section 6.10,
page 350, equation (3). I've been wondering exactly where I got such a
large dose of the wave reflection model 45 years ago. It was from that
book in graduate school and "Fields and Waves in Modern Radio", by Ramo
& Whinnery in undergraduate school.

> Energy is certainly required in order create a wave. But energy is not
> consumed by wave propagation.

Energy can be given up by waves in numerous ways. If the wave ceases to
exist, it must, of necessity, give up its energy. Nothing else is possible
unless you wish to propose Dr. Best's supernatural phantom waves all over
again. Energy given up by a destructive interference event MUST support a
constructive interference event according to Hecht. How many times are you
going to ignore this quote from _Optics_? "The principle of Conservation of
Energy makes it clear that if there is constructive interference at one point,
the 'extra' energy at that location must have come from ... destructive
interference somewhere else." If the phase angle between two superposed
voltages in a transmission line is less than 90 degrees, constructive
interference exists. Therefore, there must exist two other superposed
quantities with a relative phase angle of less than 90 degrees.

> First of all, I have no idea what "pre-existing energy" is supposed to
> mean.

Yes, you do. It is |V*I|, or if you prefer, it's the "propagating power vector"
indicated by the Poynting vector. There is a Poynting vector associated with
a reflected wave. The reflected wave contains energy and momentum. The reflected
wave does not reach the source (in a matched system). What happens to the energy
and momentum in that reflected wave that travels all the way rearward from the
mismatch point back down the transmission line to the match point? Have you
no idea what a rearward-traveling propagating power vector implies?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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600. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:03:25 UTC
From: Steve KA4TMB <steven.heyde@comcast.net>
Message-ID: <676cnfjL9M2yc5SiXTWJgQ@comcast.com>
Source record: 113244
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Maybe "Airy Beans" is supposed to be a pun. You know, what happens when you eat beans? (Not including taking Beano before the beans are consumed). Who knows?

Steve KA4TMB

"J. McLaughlin" <JCM@Power-Net.Net> wrote in message news:vgjprecgdv2va5@corp.supernews.com...
> Almost 140 Beans in the FCC data. Nothing like Airy. He provides
> neither a call, a real E-mail address, nor a location.
> 73 Mac N8TT
>
> --
> J. Mc Laughlin - Michigan USA
> Home: JCM@Power-Net.Net
>
>

601. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:07:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09f12e_5@corp.newsgroups.com>
Source record: 113245

Jim Kelley wrote:

> Energy is obviously NOT conserved ...

Of course it is, Jim. Energy is always conserved. In the example
the energy out equals the energy lost from the system. Energy is
conserved.

> Like I said before, Pfwd1 + Pref2 = Pfwd2 + Pref1 is not the Law of
> Conservation of Energy - contrary to your assertion.

Please present an example of a lossless impedance discontinuity in
a transmission line that violates the above Conservation of Energy
principle. Even Dr. Best agrees with that equation.
--
73, Cecil http://www.qsl.net/w5dxp

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602. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:10:57 UTC
From: W7TI <noway@nohow.com>
Message-ID: <1hamiocyqvnap$.353hy9h6xpis$.dlg@40tude.net>
Source record: 113248
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Mon, 7 Jul 2003 17:36:17 -0400, J. McLaughlin wrote:

> Almost 140 Beans in the FCC data. Nothing like Airy. He provides
> neither a call, a real E-mail address, nor a location.
> 73 Mac N8TT

Slim.

--
Bill, W7TI

603. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:13:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09f2b2_7@corp.newsgroups.com>
Source record: 113246

Jim Kelley wrote:
> Are you claiming the effect is unique to transmission lines?

The 100% perfection in the effect seems to be unique to transmission lines.
Coherent waves in a transmission line are forced to be collimated. EM waves
in free space are extremely difficult to collimate perfectly. That's why
the physics mechanism is not well understood.

> Sure doesn't look like it went the way you said it was heading. It
> can't just disappear, and there's no way for it to turn around.

Of course there's a way for it to turn around. The Conservation of
Energy principle will not allow any other outcome. What do you think
reverses the momentum of the rearward-traveling propagating power vector?
--
73, Cecil http://www.qsl.net/w5dxp

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604. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:18:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f09f3da_7@corp.newsgroups.com>
Source record: 113247

Jim Kelley wrote:
> You're unable to prove your point by offering a single example where
> electromagnetic energy changes direction without impinging on a
> reflective surface, and so instead you insult the people who try to
> explain the phenomenon to you.

The explanation is covered on the Melles-Griot web page, Jim. You
really should read that web page someday. Here it is for you again:

"Clearly, if the wavelength of the incident light and the thickness
of the film are such that a phase difference exists between reflections
of p, then reflected wavefronts interfere destructively, and overall
reflected intensity is a minimum. If the two reflections are of equal
amplitude, then this amplitude (and hence intensity) minimum will be zero.

In the absence of absorption or scatter, the principle of conservation
of energy indicates all "lost" reflected intensity will appear as enhanced
intensity in the transmitted beam."

What is it about reflected intensity changing direction and joining
the transmitted beam that you don't understand? If the rearward-traveling
reflected intensity energy did not change direction, non-glare glass
wouldn't work.
--
73, Cecil http://www.qsl.net/w5dxp

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605. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:30:55 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09F49F.64ED531F@uci.edu>
Source record: 113250

W5DXP wrote:
> Energy is always conserved. In the example
> the energy out equals the energy lost from the system. Energy is
> conserved.

:-) You have no idea what you're talking about, and yet you insist on lecturing to me about it. Astoudingly arrogant.

> Please present an example of a lossless impedance discontinuity in
> a transmission line that violates the above Conservation of Energy
> principle.

You really have no clue about I've said, do you. Try reading it again.

606. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:35:53 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09F5C9.580E4F91@uci.edu>
Source record: 113251

W5DXP wrote:
> You
> really should read that web page someday.

I read it right before I sent you the link to it. Remember that? Then
you started improvising upon it.

You remind me of Jack Nicholson. Mind if I call you Melvin? :-)

607. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:36:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <becslv$15k$1@sparta.btinternet.com>
Source record: 113249

"Leland Cox" wrote -

> Glad you had good luck on 60M. My G5RV and antenna autotuner does not
> work well at all! I get about a 5:1 SWR.
>
==========

Leyland, what you got is what you could have expected. The G5RV is just as likely to be of any use on 60m as it is on any other frequency.

The G5RV at any but its design frequency, is just a random length dipole, fed by a random length feedline, of a random balanced line impedance Zo.

The antenna is designed to have the slight advantage of an exactly 1.5 wavelengths long dipole, centre-fed via an exacly half-wavelength long transmission line between antenna and transmitter, operated only at exactly 14.15 MHz. And even there it is not exact because it depends on height above ground, ground conditions, wire diameters and half-dozen other unknowns.

If you want a centre-fed dipole, just erect one which happens to fit into your back yard, feed it via a wide-spaced open-wire line, of no particular length, all the way back to the shack, incorporating a choke balun and a good tuner. You will then have the most efficient all HF band, all direction antenna in the book.

Allow G5RV to drift out of your mind. It may be painful but do it.

On the other hand don't let me spoil your fun. Enjoy your experimenting.
;o)

Reg, G4FGQ

608. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:38:55 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09F67F.DD27E9A@uci.edu>
Source record: 113252

W5DXP wrote:
>
> Jim Kelley wrote:
> > That is your claim. Mine is that your model fits the bill. :-)
>
> Mea Culpa, I keep forgetting about your omniscience. :-)

What you need to forget is your psuedoscience. :-)

609. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 22:56:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F09FAB4.90304@ieee.org>
Source record: 113253

Jim Kelley wrote:
>>Please present an example of a lossless impedance discontinuity in
>>a transmission line that violates the above Conservation of Energy
>>principle.
>
> You really have no clue about I've said, do you.

Yes, you said (Pfwd1 + Pref2 = Pfwd2 + Pref1) doesn't represent
a statement of the conservation of energy principle. If you are
correct, you shouldn't have any problem presenting an example
that violates that equation. If you cannot present such an example,
we have a clue that the equation might make a statement consistent
with the conservation of energy principle after all.
--
73, Cecil, W5DXP

610. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 23:04:08 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09FC68.436C3879@uci.edu>
Source record: 113255

W5DXP wrote:
>
> Jim Kelley wrote:
> > Are you claiming the effect is unique to transmission lines?
>
> The 100% perfection in the effect seems to be unique to transmission lines.
> Coherent waves in a transmission line are forced to be collimated. EM waves
> in free space are extremely difficult to collimate perfectly. That's why
> the physics mechanism is not well understood.

Nice diversion. No, you ducked a question by claiming there was only
one other direction for energy to go. How do you know what direction it
would go in if you were not restricted by the constraints of a
transmission line? What equation shows there is a reversal in the
direction of propagation without a reflection?

> Of course there's a way for it to turn around. The Conservation of
> Energy principle will not allow any other outcome. What do you think
> reverses the momentum of the rearward-traveling propagating power vector?

Answering a question with a question is insufficient proof. Please
provide the vector analysis for this. Thanks.

jk

611. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 23:09:10 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F09FD96.1F0353B9@uci.edu>
Source record: 113257

W5DXP wrote:
>
> Jim Kelley wrote:
> >>Please present an example of a lossless impedance discontinuity in
> >>a transmission line that violates the above Conservation of Energy
> >>principle.
> >
> > You really have no clue about I've said, do you.
>
> Yes, you said (Pfwd1 + Pref2 = Pfwd2 + Pref1) doesn't represent
> a statement of the conservation of energy principle.

:-) That is not what I said, as anyone can clearly see from what has appeared on their computers screens. Nor is it the statement I disputed. I said that it is not the Law of Conservation of Energy. You claimed it was. I said that you cannot arbitrarily draw boundaries and expect energy necessarily to be conserved within them. You claim you can. You are wrong on both counts.

jk

612. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 23:11:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3F09FE16.1010700@ieee.org>
Source record: 113254

Jim Kelley wrote:
> What you need to forget is your psuedoscience. :-)

Everything I have presented is backed by science, Jim.
There's only one piece of the puzzle still missing and
I am working on it. The Conservation of Energy principle
tells us that the intrinsic energy in canceled waves has
to go somewhere. One of those waves is supported by a
rearward-traveling power flow vector. It's impossible for
you to dismiss that power flow vector as nonexistent.

Apparently, the reason this mechanism is not well known
in optics is the difficulty in collimating two light
beams. But transmission lines force coherent waves traveling
in the same direction to be collimated. Little by little,
the mystery is being solved. Please stand by.
--
73, Cecil, W5DXP

613. Re: tower grounding

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 23:24:58 UTC
From: k9sqg@aol.com
Message-ID: <20030707192458.19694.00000281@mb-m28.aol.com>
Source record: 113256

Doc,

It depends on the type of braid, etc. one uses. The nickel plated is best because it doesn't rust or deterioriate as fast as tin/lead. What I did was clamp some braid to the ground rod, then solder it. After cooling, I sprayed it with clear plastic, and then wrapped it in electrical tape, and then sprayed it again. I used thin heat shrik tubing to protect the braid while the concrete was setting up. I used rebar to strengthen the base too.

Best of luck.

73s,

Evan

614. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 23:47:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a03dd_2@corp-news.newsgroups.com>
Source record: 113258

Jim Kelley wrote:
> No, you ducked a question by claiming there was only
> one other direction for energy to go.

That's true for transmission lines unless you know of
another direction of which I am unaware. After all, a
transmission line is essentially a two direction, one
dimensional environment for RF waves.

> How do you know what direction it
> would go in if you were not restricted by the constraints of a
> transmission line? What equation shows there is a reversal in the
> direction of propagation without a reflection?

If it were possible to perfectly collimate coherent light beams,
the result might possibly be a dark hemisphere and a light hemisphere.
I haven't quite figured out what would happen in three dimensions.

> Answering a question with a question is insufficient proof. Please
> provide the vector analysis for this.

Like I said, I'm working on it. Please be patient. There's only
a very small piece of the puzzle still missing but the puzzle
picture is very clear. The reflected power vector exists pointing
toward the source on the load side of the impedance discontinuity
during steady-state but there's no sign of it on the source side
of the impedance discontinuity during steady state. Where does it
go?

It's obvious what happens during the transient state. The reflected
power flow vector shrinks in the direction of the source and therefore
grows in the direction of the load. So how do you explain a power flow
vector that is shrinking in one direction? Doesn't it have to grow
in the only other direction available?
--
73, Cecil, W5DXP

615. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 23:56:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a05f4_2@corp-news.newsgroups.com>
Source record: 113259

Jim Kelley wrote:
> I said that it is not the Law of Conservation of Energy. You
> claimed it was.

An equation is obviously not the Law of
Conservation of Energy. Resorting to a silly semantaics
argument is just foolish. My equation illustrates an example
of the Conservation of Energy Principle in action. Stated
in words, at an impedance discontinuity in a transmission
line (incapable of storing energy) the total energy flowing
in must equal the total energy flowing out. I notice that
you haven't produced an example proving otherwise.
--
73, Cecil, W5DXP

616. Need Rotor Mounting Bracket

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-07 23:57:47 UTC
From: castles <castles@yestertronics.com>
Message-ID: <3F0A08FB.A87A3E45@yestertronics.com>
Source record: 113260

I have misplaced my Hygain rotor base that mounts on my US Tower tubular
self supporting tower.
I am looking for a replacement. Anyone have one for sale?

Thanks, Don Campbell

617. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 00:00:23 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0A0997.2BC08E96@uci.edu>
Source record: 113261

W5DXP wrote:
> There's only one piece of the puzzle still missing and
> I am working on it.

A reasonable person would be reluctant to lecture to people on a subject with which they are unfamiliar.

> The Conservation of Energy principle
> tells us that the intrinsic energy in canceled waves has
> to go somewhere.

It tells most people that energy does not move in the direction of canceled waves. The only energy involved was transferred there during the transient period. Those oscillations are maintained by the potentials at the boundary without additional energy influx to the line in that direction.

> One of those waves is supported by a
> rearward-traveling power flow vector. It's impossible for
> you to dismiss that power flow vector as nonexistent.

It exists as a mathematical solution that depends upon the validity of the assumption that energy is flowing in that direction. But energy is clearly not flowing away from the load in a matched system. The Law of Conservation of Energy stipulates that when Preflected = 0, Ptransmitted = Pincident. Unsatified with that relationship, you've embarked on an exercise to ascertain how many fairies can dance on the head of a pin.

> Apparently, the reason this mechanism is not well known
> in optics is the difficulty in collimating two light
> beams.

I've already given you a laser example that illustrates what happens when one attains nearly perfect collimation and coherence. Study the Mach-Zehnder interferometer for a single source example. The question which remains unresolved is whether individual waves continue to propagate independent of whether they happen to be in phase or out of phase. We know they do when they're traveling in opposite directions. And we know that photons don't annihilate.

ac6xg

618. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 00:15:19 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0A0D17.E0607BB7@uci.edu>
Source record: 113262

W5DXP wrote:
> I solved the equation P3=V3*I3=25W. P3 contains
> 25 joules/sec. P4 contains 25 joules/sec.

If we assume P3 and P4 were anything other than mathematical constructs, we could just as easily solve the equation P3 + P4 - 2*sqrt(P3*P4) in order to show how much energy is conveyed in the direction of P3 and P4.

> Those joules/sec cannot
> be destroyed except in your mind.

But the joules exist only in yours.

> >>P4 in the power in the other rearward-traveling reflected wave
> >>that you say isn't there.
> >
> > Also conveys no energy, as a result of its interaction with P3.

> It certainly conveys energy from the destructive interference event to
> the constructive interference event just as described on the Melles-
> Griot web page.

No. The equations which underly the Melles-Griot web page show us that our P1 and P2 constructively interfere in order to convey the energy not being reflected by P3 and P4.

> > The interference term "feeds" nothing.

> So you disagree with _Optics_, by Hecht.

I disagree with some of Cecil Moore's interpretation of what is written there.

> If we filter out some coherent light from Alpha Centauri, create two
> equal magnitude, out of phase waves, and cause them to cancel to zero,
> are you saying that light from Alpha Centauri never contained any
> energy. Preposterous!

That's why I have never said such a thing. Under such circumstances I would have said that canceled waves from Alpha Centauri never conveyed light energy to us.

> > How much power does b1 represent?

> None, because all the associated
> energy headed back the other direction, i.e. it changed directions.

I'll agree that b1 equals zero, and that zero energy changes directions.

73, ac6xg

619. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 00:37:52 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0A1260.BBE21CE5@uci.edu>
Source record: 113266

W5DXP wrote:
>
> Jim Kelley wrote:
> >
> > W5DXP wrote:
> >
> >>Uhhhhh Jim, you are the one who is implying that the energy flowing into
> >>a lossless impedance discontinuity in a transmission line is NOT equal
> >>to the energy flowing out of that impedance discontinuity.
> >
> > I'm sorry, Cecil, but that's an absolute lie. I have never implied
> > anything of the kind.
>
> Of course you did, Jim. I said "Pfwd1+Pref2=Pfwd2+Pref1" and you
> argued with me.

You have no shame, and no honor.

> > Draw a boundary around a power plant, and see if you can prove that
> > energy within that boundary is conserved. (I thought I already gave
> > that example.)

> Exactly what energy is created or destroyed in a power plant?

:-) The energy within the boundary is not constant - energy is obviously
not conserved.

> The wave is in the act of being reflected from the load. It
> doesn't know what to expect at the source end of the line when it arrives
> there. It might have to dissipate power and it might not have to. But that
> is 100 nanoseconds into the future. You say the reflected wave carries energy
> if energy is needed but the wave doesn't know if it will be needed or not
> in 100 nanoseconds. The reflected wave must predict the future. If energy is
> needed to heat a resistor, it must take energy with it. If energy is not needed,
> you say it doesn't take any energy with it. So how does it predict the future,
> Jim, when you, with your high IQ, are incapable of predicting the future?
Good lord, Cecil. With your high IQ, I should think such a "dilema"
wouldn't exist. Energy is transfered through the transmission line to
the boundary during the transient period. At that point the transfer of
energy stops because of the conditions it encounters at the second
boundary. No further energy is transferred into the line, although the
oscillations are maintained on the line (with the energy on the line
being transferred back and forth between E and H fields) by the
potentials that exist at the first boundary.

> Your
> scenario has a large contradiction built in. It not only requires smart waves,
> it requires waves smarter than you, smart enough to predict the future.

There is no contradiction. Only the requirement that the reader has
sufficient intellegence to comprehend the printed word.

> > When you put a circulator in
> > circuit you are doing two things: one, you're eliminating the wave
> > cancellation; and two you're providing a place to which energy can be
> > transferred.

> The wave contains energy either way, Jim, because it cannot know what will
> happen in the future at the source.

Energy is transferred until the steady state is achieved, at which point
boundary conditions dictate the flow of energy. The boundary conditions
are obviously different with and without the circulator in circuit.
Your example proves nothing about the flow of energy without a
circulator in circuit.

> For one case, the wave delivers its
> energy to a circulator load. For the other case, the wave delivers its
> energy to the destructive interference event.

We simply differ on how the energy is delivered to the circuit load in
the latter case.

73, ac6xg

620. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 00:48:03 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0A14C3.94FAFC50@uci.edu>
Source record: 113267

W5DXP wrote:
>
> Jim Kelley wrote:
> > I said that it is not the Law of Conservation of Energy. You
> > claimed it was.
>
> An equation is obviously not the Law of
> Conservation of Energy. Resorting to a silly semantaics
> argument is just foolish.

Any way that you could see my point of view on something just once, or is that out of the question?

73, jk

621. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 00:52:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a12fa_2@corp-news.newsgroups.com>
Source record: 113264

Jim Kelley wrote:
> A reasonable person would be reluctant to lecture to people on a subject
> with which they are unfamiliar.

Sorry if my quest for knowledge disappoints you, Jim. You haven't
answered my questions so I am still asking them.

> It tells most people that energy does not move in the direction of
> canceled waves.

Sorry, Jim, but the reflected wave Poynting vector proves that
you are wrong about that.

> The only energy involved was transferred there during
> the transient period.

During steady-state, the reflected wave Poynting vector exists
on the load side of the impedance discontinuity but not on
the source side. Where does that propagating power flow vector
go, Jim? It's easy to see that the disappearing reflected power
flow vector on the source side of the impedance discontinuity is
joining the forward wave power flow vector on the load side.
Otherwise, there wouldn't be enough reflected power to cause
wave cancellation.

> But energy is
> clearly not flowing away from the load in a matched system.

Uhhhh, Jim, we are discussing mismatched loads. Energy clearly
does flow as a reflected wave back from a mismatched load. There's
even a power flow vector associated with it. Please reference
"Fields and Waves in Modern Communications", by Ramo & Whinnery,
section 6.10.

> I've already given you a laser example that illustrates what happens
> when one attains nearly perfect collimation and coherence.

Nearly perfect won't hack it, Jim. A transmission line is a perfect
collimator of coherent waves traveling in the same direction. Your
interferometer is not. Come back when you get your interferometer
adjusted to perfection.
--
73, Cecil, W5DXP

622. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 00:54:10 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <v15kgv48e1al7264bemoo6qrp0jsv8j0f9@4ax.com>
Source record: 113263

On 4 Jul 2003 00:46:23 GMT, "Dick Carroll;" <dixie@townsqr.com> wrote:

> IMO the telephone companies generally seem to be poorly managed with
>even poorer forward planning. Most can't even see trends which are whacking
>them in the face. ALL could have had most of the ISP business early on in
>the internet era instead of sitting by while AOL, Compuserve, etc etc and
>hundreds of local startups took most of it. And service would have been
>available to everyone everywhere at competitive pricing.
>
>Dick
>

As a fifteen year victim of a large, three-letter telecom company, I
can tell you that they are indeed run by idiots. The current "achieve
profitability by litigation" dust-up in the Linux world was caused by
one of the company's ill-advised sell-off of intellectual property.
The telcos have laid off, retired or driven out any remains of talent
or expertise since 1984 when Judge Greene decided that he could
improve telephone service from the bench. All that are left are
pencil-pushers, bean-counters and clock-watchers. As a WAN engineer
and administrator, I have seen the telcos go from bad to worse. There
are almost 1200 LECs and CLECs in North America and each is as bad as
the next for service and reliability. It's a wonder and a tribute to
the designers that the 'net works as well as it does.

Russ

>"J. McLaughlin" wrote:
>
>> Of interest is that some of that investment was done right. My local,
>> independent telephone company put much of their profits (over a number
>> of years) into the ground with cable and glass. The results are that it
>> now pays only about three pole charges (cost per year to the power
>> company) and has very good bandwidth right where people live. Pole
>> charges went up in cost several times once cable TV arrived. I have two
>> telephone lines (had three when sons were at home) and DSL on one of the
>> several wide bandwidth lines that are burred right up to the house.
>> Takes attention to details and forward planning. The family who own
>> the telephone company are not rich, but they live and work here.
>> 73 Mac N8TT
>>
>> --
>> J. Mc Laughlin - Michigan USA
>> Home: JCM@Power-Net.Net

>> Office: JCM@McLMcL.Com
>> "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> news:eh59gv0873sv69mj7irvqots4u5ft9elmh@4ax.com...
>> > On Thu, 3 Jul 2003 15:29:27 -0500, "H. Adam Stevens"
>> > <solo@totalaccess.net> wrote:
>> > >where is the fiber optic infrastructure?
>> > >what happened?
>> >
>> > Hi OM,
>> >
>> > We currently have somewhere on the order of 95% to 98% excess fiber
>> > optic capacity! It is where all that money planted it, along the
>> > roads of America, just short of the homes it would serve had the
>> > technology market not collapsed 3 years ago.
>> >
>> > The reason (or partial reason) for that collapse is called "the last
>> > mile." In terms of simple economics, that excess capacity was the
>> > simplest infrastructure addition. The problem of "the last mile" is
>> > that to connect every home (or at least enough to make marketing this
>> > bandwidth profitable) will cost vastly more than the original
>> > investment. The best short term prospects are found in the analog of
>> > a Central Office offering Wi-Fi connections to nearby RF networked
>> > communities.
>> >
>> > Barring the planting of more fiber optic to your doorstep, there is
>> > vastly more chance of new roof mounted antennas in our future.
>> >
>> > 73's
>> > Richard Clark, KB7QHC

623. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 00:56:59 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <8j5kgvkn8g02e7o53ehii9do85k4i9h738@4ax.com>
Source record: 113265

On 4 Jul 2003 08:04:32 -0700, robkemp90210@hotmail.com (Rob Kemp)
wrote:

>And if you do decide to try and operate, BPL is sensitive to ham
>transmissions. When you shut down Internet access for blocks and the
>power company blames you the "social" consequences will be huge.
>
>File today, get everyone you know to file, NOW!!!
>

What about other licensed radiators? Won't they have a bad effect on
the BPL subscribers? I am a licensed service. If you are operating
on my frequencies with no license, tough beans when you get interfered
with.

Russ

>"Dick Carroll;" <dixie@townsqr.com> wrote in message
news:<be2iov$uk6$0@208.207.71.145>...
>> IMO the telephone companies generally seem to be poorly managed with
>> even poorer forward planning. Most can't even see trends which are whacking
>> them in the face. ALL could have had most of the ISP business early on in
>> the internet era instead of sitting by while AOL, Compuserve, etc etc and
>> hundreds of local startups took most of it. And service would have been
>> available to everyone everywhere at competitive pricing.
>>
>> Dick
>>
>> "J. McLaughlin" wrote:
>>
>> > Of interest is that some of that investment was done right. My local,
>> > independent telephone company put much of their profits (over a number
>> > of years) into the ground with cable and glass. The results are that it
>> > now pays only about three pole charges (cost per year to the power
>> > company) and has very good bandwidth right where people live. Pole
>> > charges went up in cost several times once cable TV arrived. I have two
>> > telephone lines (had three when sons were at home) and DSL on one of the
>> > several wide bandwidth lines that are burred right up to the house.
>> > Takes attention to details and forward planning. The family who own
>> > the telephone company are not rich, but they live and work here.
>> > 73 Mac N8TT
>> >
>> > --
>> > J. Mc Laughlin - Michigan USA

>> > Home: JCM@Power-Net.Net
>> > Office: JCM@McLMcL.Com
>> > "Richard Clark" <kb7qhc@comcast.net> wrote in message
>> > news:eh59gv0873sv69mj7irvqots4u5ft9elmh@4ax.com...
>> > > On Thu, 3 Jul 2003 15:29:27 -0500, "H. Adam Stevens"
>> > > <solo@totalaccess.net> wrote:
>> > > >where is the fiber optic infrastructure?
>> > > >what happened?
>> > > >
>> > > Hi OM,
>> > > >
>> > >
> We currently have somewhere on the order of 95% to 98% excess fiber
>> > > optic capacity! It is where all that money planted it, along the
>> > > roads of America, just short of the homes it would serve had the
>> > > technology market not collapsed 3 years ago.
>> > > >
>> > > The reason (or partial reason) for that collapse is called "the last
>> > > mile." In terms of simple economics, that excess capacity was the
>> > > simplest infrastructure addition. The problem of "the last mile" is
>> > > that to connect every home (or at least enough to make marketing this
>> > > bandwidth profitable) will cost vastly more than the original
>> > > investment. The best short term prospects are found in the analog of
>> > > a Central Office offering Wi-Fi connections to nearby RF networked
>> > > communities.
>> > > >
>> > > Barring the planting of more fiber optic to your doorstep, there is
>> > > vastly more chance of new roof mounted antennas in our future.
>> > > >
>> > > 73's
>> > > Richard Clark, KB7QHC

624. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:05:47 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0A18EB.7E13FE65@uci.edu>
Source record: 113171

W5DXP wrote:
> Like I said, I'm working on it. Please be patient.

Here's a thought: You might consider the possiblility that the answer
has already been provided.

> There's only
> a very small piece of the puzzle still missing but the puzzle
> picture is very clear. The reflected power vector exists pointing
> toward the source on the load side of the impedance discontinuity
> during steady-state but there's no sign of it on the source side
> of the impedance discontinuity during steady state. Where does it
> go?

Something which doesn't exist doesn't go anywhere. The fact that it
doesn't exist in the reverse direction allows all of the energy moving
in the forward direction to impinge upon the load.

> It's obvious what happens during the transient state. The reflected
> power flow vector shrinks in the direction of the source and therefore
> grows in the direction of the load. So how do you explain a power flow
> vector that is shrinking in one direction? Doesn't it have to grow
> in the only other direction available?

I think that's as good a way as any to describe it. We just disagree on
the mechansim by which it occurs.

73, ac6xg

625. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:09:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a16e3$1_2@corp-news.newsgroups.com>
Source record: 113268

Jim Kelley wrote:

> W5DXP wrote:
> we could just as easily solve the equation P3 + P4 - 2*sqrt(P3*P4) in
> order to show how much energy is conveyed in the direction of P3 and P4.

No, for a matched system, energy is conveyed away from P3 and P4
toward P1 and P2. In fact, 2*Sqrt(P1*P2) equals P3+P4

>>It certainly conveys energy from the destructive interference event to
>>the constructive interference event just as described on the Melles-
>>Griot web page.
>
> No. The equations which underly the Melles-Griot web page show us that
> our P1 and P2 constructively interfere in order to convey the energy not
> being reflected by P3 and P4.

You are saying exactly the same thing that I said. One more time.
The waves containing P3+P4 are destroyed. The energy in those two
waves cannot be destroyed. That destructive interference energy
changes directions and joins the constructive interference event
in phase in the opposite direction just as explained on the Melles-
Griot web page.

> ... canceled waves from Alpha Centauri never conveyed
> light energy to us.

How did Alpha Centauri know not to put any energy in those waves
nine years ago?

> I'll agree that b1 equals zero, and that zero energy changes directions.

If zero energy changes directions, b1 cannot be equal to zero.
You cannot have it both ways.
--
73, Cecil, W5DXP

626. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:16:21 UTC
From: dplatt@radagast.org
Message-ID: <vgk6r5nkoehge0@corp.supernews.com>
Source record: 113169

In article <8j5kgvkn8g02e7o53ehii9do85k4i9h738@4ax.com>,
Russ <carlzomer@hotmail.com> wrote:

>What about other licensed radiators? Won't they have a bad effect on
>the BPL subscribers? I am a licensed service. If you are operating
>on my frequencies with no license, tough beans when you get interfered
>with.

Yes, in law, that's the rules. Being Part 15 equipment, devices such as BPL modems will have to tolerate interference.

As one commenter's notes on the FCC site made clear, such interference is quite likely. Licensed-transmitter signal strengths on the wires carrying BPL are likely to be strong enough to saturate the ADC chips in consumer-grade equipment, thus rendering much of the spectrum spreading useless. I've heard of this sort of problem occurring with a number of ADSL modems, and I expect that BPL modems would be as sensitive.

Unfortunately, what the law says, and what public opinion can demand, may be two different things. If licensed operators start shutting down BPL service over large areas of a city, you can expect a lot of pressure on the licensed services to mitigate the problem, even if the law says it's not the operator's legal responsibility to do so.

There's another interesting little problem in this regard. Amateur-radio regs require that the minimum amount of power be used which can communicate in a specific mode (this is both best-practice and FCC-mandated). A lot of people work very effectively using QRP and QRPp, at power levels which aren't likely to cause interference in nearby consumer-grade equipment.

If BPL becomes a reality, and the broadband noise level increases, amateur operators (and other licensed services) are likely to have to increase their transmitter power quite a bit to punch through the interference. This would be legal (modulo the FCC limits on maximum power in various bands) but it could _greatly_ increase the problems of interference to BPL, DSL, television, radio, telephone, and so forth. From what I've heard, in an urban setting, transmitting below 20-25 watts HF usually keeps you clear of the problem of fundamental overload in TV tuners, while higher power levels can cause this to become a problem. If amateurs have to routinely crank up power to 100 watts or more to "burn through" BPL noise, we can probably expect a lot of increased TVI complaints from our neighbors.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

627. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:18:35 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0A1B6D.2040508@comcast.net>
Source record: 113170

Ratio ad adsurbium:

If I put 1000 joules/second [4.47 amperes rms into Zo = 50 ohm] into a lossless transmission line and only get 1 joule/second [0.141 amperes rms into Zo = 50 ohm] output then by the application of Mr. Kirkoff's laws I will build up an infinite charge [integral of I*dt] in the transmission line.

Obviously, that does not happen! So, in the steady state, in a lossless line the 'guzintas' have to equal the 'comesottas'. i.e. conservation of energy.

Reality:

example: I have two transmission lines; one has Zo = 50 ohms the second has Zo = 100 ohms. They are connected in series creating a mismatched junction [50 to 100 ohms]. The Zo = 100 ohm line has an open circuit for a load.

Then the sum of powers is stated:

Pin[50] - Pref[50,100 junction] = Pin[100] - Pref[open]

Rearranging terms:

Pin[50] + Pref[open] = Pin[100] + pref[50,100 junction].

Converting to Cecil's terminology:

Pfwd1 + Pref2 = Pfwd2 + Pref1 ... Jim Kelly, what's the problem??

The equation is an accurate statement.

Deacon Dave, W1MCE
+ + +

628. Re: Save our shortwave from white noise at S9 - stop BPL/PLC - file comments today

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:37:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgk82kco7e1a35@corp.supernews.com>
Source record: 113173

Those who like sausages or have respect for the law should not look too closely at how either is made.

Your faith in the law indicates that you haven't looked very closely at how it's made.

Laws are made by elected politicians. An idealist would say that the politicians represent the will of the people. If that's so, then a massive number of people complaining about interference would get the law changed quick as a wink (or the FCC would be made powerless to enforce it). A more cynical and perhaps realistic person would say that politicians are beholden to the special interests that fund their campaigns. Consider the relative contributions from hams and from the people making money from BPL, and figure out which way the wind would blow (it doesn't take a weatherman). Either way you look at politicians, you're outvoted, and the law is toothless.

Sit back, munch on a hot dog, and think about it.

Roy Lewallen, W7EL

Russ wrote:
>
> What about other licensed radiators? Won't they have a bad effect on
> the BPL subscribers? I am a licensed service. If you are operating
> on my frequencies with no license, tough beans when you get interfered
> with.
>
> Russ

629. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:43:34 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vgk8b4ejhdkr80@corp.supernews.com>
Source record: 113174
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

```
OK. ...and Brian Reay is ?
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net
Office: JCM@McLMcL.Com
"Walt Davidson" <walt99@tiscali.co.uk> wrote in message
news:fvujgv4d17l07vq2421r9itbb3jgs884dq@4ax.com...
> On Mon, 7 Jul 2003 18:03:25 -0400, "Steve KA4TMB"
> <steven.heyde@comcast.net> wrote:
>
> >Maybe "Airy Bean" is supposed to be a pun.
>
> "Airy R Bean" is an anagram of "Brian Reay".
>
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @freeuk.com
```

630. comments on this off center fed antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:49:34 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <_7KcnUaEO5sQvpeiXTWJjQ@ctc.net>
Source record: 113175

What are the groups thoughts on an off center feed antenna being 41 feet long on one side and 96 feet long on the other side. The feed point is a 4:1 balun and then any length of coax to the tuner. How is it for a comprimise antenna for all the bands 80 meters to 10 meters ? Saw this design instead of the more normally seen lengths.

631. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 01:50:52 UTC
From: Leland Cox <lcox107@comcast.net>
Message-ID: <pKmdnbng6O3MvZeiU-KYgg@comcast.com>
Source record: 113172

Reg, Not sure why you hate the G5RV so much. I have several friends using them on 60M with low SWR!

I have had many antennas and the G5RV is sure the most versatile. I have had great luck with a common feed dipole for 80 40 20 and 10. Just takes a lot of wire and 40 and 80 are not broad banded enough to cover their whole band!
The antenna you describe will be directional on many frequencies. It will have lobes all over the place on any thing but the resonate frequency and it will have two major lobes. But the G5RV does the same thing!!!!
Les, AA4F

632. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 02:34:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a2fe9_5@corp.newsgroups.com>
Source record: 113176

Jim Kelley wrote:
> ... energy is obviously not conserved.

Sorry Jim, energy is always conserved. That's what "Conservation of Energy" means. The energy radiated from an antenna is conserved even though it leaves the antenna and winds up outside the orbit of Pluto.

> Energy is transferred until the steady state is achieved, at which point
> boundary conditions dictate the flow of energy. The boundary conditions
> are obviously different with and without the circulator in circuit.
> Your example proves nothing about the flow of energy without a
> circulator in circuit.

But the kicker for you is, you don't know whether the circulator is in the circuit or not so your waves don't know whether to carry energy or not. What if the waves arrive without energy just as the circulator is switched in? Bingo, instant violation of the Conservation of Energy principle.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

633. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 02:39:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a3100_5@corp.newsgroups.com>
Source record: 113177

Jim Kelley wrote:

>
> W5DXP wrote:
>>An equation is obviously not the Law of
>>Conservation of Energy. Resorting to a silly semantaics
>>argument is just foolish.
>
> Any way that you could see my point of view on something just once, or
> is that out of the question?

I indeed do see your silly immature point of view. You forgot to
add a smiley face.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

634. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 02:47:04 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a32cb$1_5@corp.newsgroups.com>
Source record: 113178

Jim Kelley wrote:

> W5DXP wrote:
>>Like I said, I'm working on it. Please be patient.
>
> Here's a thought: You might consider the possiblility that the answer
> has already been provided.

If it has, I haven't seen it.

> Something which doesn't exist doesn't go anywhere. The fact that it
> doesn't exist in the reverse direction allows all of the energy moving
> in the forward direction to impinge upon the load.

What you need to do is tell us exactly how the reflected power flow vector gets turned around at the match point. Until you do that, you haven't contributed anything of value.

> I think that's as good a way as any to describe it. We just disagree on
> the mechansim by which it occurs.

The reflected power flow vector on the source side of the impedance discontinuity during transient buildup to the steady-state at the Z0-match point obviously shrinks as the reflected power flow vector on the load side is increasing in magnitude. That's a double whammy for you, Jim. Where do those power flow vectors go? Obviously as a surprise to you, the forward power flow vector increases by an identical amount. Funny how that works.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

635. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 02:48:12 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0A30EC.865D75BB@uci.edu>
Source record: 113182

Hi Dave,

Please don't be persuaded by Cecil's strawmen. His characterization of my opinion is almost never a good match to the opinion I've actually expressed.

I had some issues with Cecil's broad generalizations. He claimed that the Law of Conservation of Energy from the text books was irrelevant. He claimed that his equation was the Law of Conservation of Energy, when in fact it was simply an expression for what goes in equals what comes out - an equality. The Law of Conservation of Energy, as stated in the physics books pertains strictly to closed systems. The fact that energy is conserved in his particular open system is not the same thing as a law which observes that energy must be conserved in any closed system. However he's changed his use of the terminology since then, and now correctly terms it an expression of the conservation of energy principle - which is basically how I characterized it in my original assessment. It is simply a restatement of the very same law I cited for him. But he refused to acknowledge that. His argument was akin to arguing that V=I*R is a different law than R=V/I.

As you must know by now, Cecil does not usually allow himself to admit to errors - no matter how small they might happen to be. He's tallying newsgroup points, and that's primarily what matters to him in these discussions - apparently.

More below.

Dave Shrader wrote:
>
> Ratio ad adsurbium:
>
> If I put 1000 joules/second [4.47 amperes rms into Zo = 50 ohm] into a
> lossless transmission line and only get 1 joule/second [0.141 amperes
> rms into Zo = 50 ohm] output then by the application of Mr. Kirkoff's
> laws I will build up an infinite charge [integral of I*dt] in the
> transmission line.

> Obviously, that does not happen!

Obviously.

> So, in the steady state, in a lossless
> line the 'guzintas' have to equal the 'comesottas'. i.e. conservation of
> energy.

That hasn't been the point of contention.

> Reality:
>
> example: I have two transmission lines; one has Zo = 50 ohms the second
> has Zo = 100 ohms. They are connected in series creating a mismatched
> junction [50 to 100 ohms]. The Zo = 100 ohm line has an open circuit for
> a load.

Except in the case being examined the 150 ohm line looks into a
reflection coefficient indicating that there is a load of 450 ohms on it
(rho=150/450=.25). That impedance is the one to which the 50 to 150 ohm
transformer provides a match. A match is achieved when rho of the first
boundary equals rho of the second boundary. The net effect of the two
boundaries is that no energy is reflected from the load. Cecil and I
are interested in what occurs between the boundaries, but we've come to
different conclusions about that. I've been chastised for having a
similar opinion to some experts in the field.

> Then the sum of powers is stated:
>
> Pin[50] - Pref[50,100 junction] = Pin[100] - Pref[open]
>
> Rearranging terms:
>
> Pin[50] + Pref[open] = Pin[100] + pref[50,100 junction].
>
> Converting to Cecil's terminology:
>
> Pfwd1 + Pref2 = Pfwd2 + Pref1 ... Jim Kelly, what's the problem??
>
> The equation is an accurate statement.

Obviously the equation is accurate. That doesn't mean it should be
abused, however. The point is that the values he uses in the equation
in this example are not useful in an energy analysis. He's right that
the energy impinging upon a lossless discontinuity will net zero. And
it does that with the correct numbers as well. But he shows 50 watts
being reflected, and then struggles to explain how it gets redirected
back toward the load. The answer is simply that that amount of power is
NOT reflected in the first place. Wave cancellation prevents the
reflection of energy. In reality the first boundary has 100 joules per
second impinging on it from the left, and 100 joules per second
traveling through it toward the load. One hundred joules per second
then pentrates the second boundary into the load.

Cecil is interested in constructing an analysis in such a way that one
can sum all the calculable power numbers. I think it's a worthwhile
endeavor, and he does manage to make the numbers add up. But one has to
make a couple of leaps of faith in order to do it. My humble,
reasonably well informed opinion is that it's not justified in the
physics. The fact is that since interference does play a role, one can
only use those numbers by observing phase and using them as terms in the
proper irradiance equations.

P3 + P4 - 2*sqrt(P3*P4), and P1 + P2 + 2*sqrt(P1*P2). The same thing can be shown by squaring the respective voltage terms without necessarily obscuring the phase information. No violations of physics or engineering. No violations of the wave reflection model, no obscuring of phase information, and no leaps of faith. For that, I am characterized as the antichrist.

73, Jim AC6XG

636. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 02:49:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a3351_5@corp.newsgroups.com>
Source record: 113179

Dave Shrader wrote:
> Pfwd1 + Pref2 = Pfwd2 + Pref1 ... Jim Kelly, what's the problem??
>
> The equation is an accurate statement.

You didn't catch Jim's cruel little joke. He says that equation
is not the conservation of energy principle. Get it?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

637. Re: comments on this off center fed antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 02:53:33 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0A322D.45A8FF83@cwis.net>
Source record: 113180

Ralph,
Sounds like a typical 'OCF' for 80 meters, except
for the balun. Wonder why they want to use one?
'Doc

638. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 03:02:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0a3661$1_5@corp.newsgroups.com>
Source record: 113181

Leland Cox wrote:
> Reg, Not sure why you hate the G5RV so much. I have several friends
> using them on 60M with low SWR!

Modeling a G5RV with EZNEC on 5.368 yields a 50 ohm SWR of 27:1
on the 50 ohm coax. That's not good. The SWR on the 300 ohm
twinlead is OK at 5:1 but the 102 ft dipole is relatively close
to resonance on that frequency and the "matching section" mismatches
the antenna worse than if it was fed directly with coax.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

639. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 03:05:14 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0A34EA.AC33AF00@uci.edu>
Source record: 113184

W5DXP wrote:
>
> Jim Kelley wrote:
> > Here's a thought: You might consider the possiblility that the answer
> > has already been provided.
>
> If it has, I haven't seen it.

One apparently sees only what one wants to see.

> What you need to do is tell us exactly how the reflected power flow
> vector gets turned around at the match point.

Obviously you need to explain how a vector get turned around in the
absence of a reflective surface, seeing as your entire argument hinges
upon it.

> > I think that's as good a way as any to describe it. We just disagree on
> > the mechansim by which it occurs.

> The reflected power flow vector on the source side of the impedance > discontinuity
> during transient buildup to the steady-state at the Z0-match point obviously
> shrinks as the reflected power flow vector on the load side is increasing in
> magnitude. That's a double whammy for you, Jim.

With a fixed amount of input power, how could the relative magnitudes of
the vector quantites do anything else?

> Where do those power flow
> vectors go?

I have no idea what that's supposed to mean.

> Obviously as a surprise to you, the forward power flow vector
> increases by an identical amount. Funny how that works.

I can't think of any other way for it to work, so it's not surprising to
me at all.

Nice chatting with ya.

ac6xg

640. Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 03:13:00 UTC
From: numeric <numeric@worldnet.att.net>
Message-ID: <0FqOa.44522$3o3.2977236@bgtnsc05-news.ops.worldnet.att.net>
Source record: 113183

Looking for the best 20m vertical antenna design; without radials or buried ground wires. There is no restriction on the antenna height; except, that I would like to support the antenna at its base and mounted on the roof. I am more concerned about a design that optimizes the antenna efficiency and provides a low angle of radiation rather then for a 50 ohm impedance. The ground is basically sand, not much conductivity.

Any Ideas?

Thanks.

641. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 03:34:35 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030707233435.13456.00000272@mb-m01.aol.com>
Source record: 113185

Hooked my MFJ antenna analyzer through my tuner into my half-size G5RV, which is fed by 75 feet of Belden coax, and the center is at 20 feet, in an inverted V and was able to get an acceptable SWR. I don't remember the exact figure, but I know is was somewhere below 2:1.

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-

73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

642. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 03:48:15 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f0a4484_2@news1.prserv.net>
Source record: 113187

18 months indoors.

I carefully soldered a piece of 16 Ga. buss wire to a clean piece of soft aluminum (low alloy). Wrote the date on it and hung it from the shop lamps over the bench. Around a year and a half later, the aluminum appeared on the floor, while the wire was still hanging from the lamp. Corrosion at the interface was very obvious.

--
Crazy George
Remove NO and SPAM from return address

643. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 03:52:45 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <herOa.241703$jp.6658384@twister.southeast.rr.com>
Source record: 113186

sorry shouldnt read the mail at 3 am
"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
news:m1pggvc3goj3k66atedo46lj20quuu0uk9@4ax.com...
> If you read my description below you will see I used 450-Ohm ladder
> line 65 feet in length.
>
> The calculations for the input impedance was done using TL Details
> software by Dan Maquire AC6LC. A very nice freeware program.
>
> 73
> Danny, K6MHE
>
>
>
> On Sun, 06 Jul 2003 17:15:37 GMT, "Jimmy" <Gfender@carolina.rr.com>
> wrote:
>
> >How did you figure the transmitter end impedances without knowing the
length
> >of his feedline.
> >
> [snip]
> >>
> >>
> >> The balun impedance ratio is not particularly important on the system
> >> you describe. The reason being is that the impedance presented at the
> >> balun in seldom ever 450 Ohms. For example, here is the results of NEC
> >> model run for a 130 foot dipole mounted 50 feet high over average
> >> ground, fed with 65 feet of 450-Ohm window line.
> >>
> >>
> >> Impedance at the antenna fed point.
> >>
> >> Freq (MHz) Z Angle
> >> 1.900 1,078.42 -89.63°
> >> 3.750 95.03 37.13°
> >> 7.150 4,575.23 20.04°
> >> 10.125 550.00 -79.15°
> >> 14.175 2,522.73 52.01°
> >> 18.114 324.90 -67.39°
> >> 21.225 1,436.25 58.31°
> >> 24.930 731.19 71.76°
> >>

> >> Impedance at transmitter's end of the transmission line.
> >>
> >> 1.900 79.69 -87.94°
> >> 3.750 734.64 -68.39°
> >> 7.150 668.20 -77.93°
> >> 10.125 1,535.40 68.10°
> >> 14.175 269.59 -74.96°
> >> 18.114 260.60 -63.80°
> >> 21.225 83.79 -27.45°
> >> 24.930 238.54 -68.61°
> >> 29.000 530.03 69.29°
> >>
> >> As you can see, the balun never sees an impedance of 450-Ohms. In
> >> fact, chances of the transmitter's end of the transmission line ever
> >> presenting a 450-Ohm (R450 +j0) impedance is right up there with
> >> wining the Readers Digest sweepstakes. <g>
> >>
> >> 73,
> >> Danny, K6MHE
> >>
> >>
> >>
> >
>

644. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 03:56:05 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f0a4485_2@news1.prserv.net>
Source record: 113188

Roy:

The problem is modeling the car, not the antenna. No two cars, even identical models, act the same on the range. Too many metal pieces with uncontrolled contact characteristics. So, one may easily have more horizontal content than the next. Since neither H nor V content is very much.

--
Crazy George
Remove NO and SPAM from return address

645. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 04:10:23 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgkh2ukcgutuf8@corp.supernews.com>
Source record: 113189

```
center fed vertical dipole
gap is one, I think
H
"numeric" <numeric@worldnet.att.net> wrote in message
news:0FqOa.44522$3o3.2977236@bgtnsc05-news.ops.worldnet.att.net...
> Looking for the best 20m vertical antenna design; without radials or
buried
> ground wires. There is no restriction on the antenna height; except, that
I
> would like to support the antenna at its base and mounted on the roof. I
am
> more concerned about a design that optimizes the antenna efficiency and
> provides a low angle of radiation rather then for a 50 ohm impedance. The
> ground is basically sand, not much conductivity.
>
> Any Ideas?
>
> Thanks.
>
>
```

646. Re: What's wrong with this picture?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 04:23:01 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <FGrOa.241707$jp.6661947@twister.southeast.rr.com>
Source record: 113190

A few more switches than what I like. Took down the antenna farm while building new garage/workshop/ham shack. When project is completed antennas go back up. Will probably use the two antenna approach since shack will be right at the base of the tower and it will not have a lot of room for the phasing sections. I do like you r aproach though. If I didnt live in this yuppie neighborhood I would probably try it.

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message news:3f087be0$1_2@corp.newsgroups.com...
> Jimmy wrote:
> > Ive tried this setup with 4:1 and 1:1 BALUNS, seems to always be a band that
> > doesnt load up that well. Rig up something so you can add in a 1/4
> > wavelength of transmission line on the band that gives trouble. Or better
> > yet use two antennas designed so that the hard to feed points on one antenna
> > are the easy ones on the other.
>
> Or better yet, just feed the transmission line at a current maximum
> point as described on my web page. All transmitter end impedances
> are resistive and between 35 ohms and 85 ohms - no tuner needed.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

647. Re: yaesu vx-5r or kenwood th-f7????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 04:34:53 UTC
From: "Ralph A. Schmid, DK5RAS" <nospam@radio-link.net>
Message-ID: <tdikgvsqlrjagfuvan8s167pa7id9cqd1r@4ax.com>
Source record: 113191
Cross-posted to:
alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

6212hgk{invert}@newsguy.com (John Bartley K7AAY (ex-KGH2126)) wrote:

>Although the VX-7R has improved features, the waterproofed speaker makes
>hearing much more difficult to me. Please do yourself a favor and listen
>to both of them side by side before purchase.
><snip>

The F7 does not sound better, when having loud environment the only
radio that outperforms is one of my Motorolas :)

regards - Ralph

--

Want to get in touch? http://www.radio-link.net/whereisralph.txt

648. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 05:32:40 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0A5778.1BD4A457@cwis.net>
Source record: 113192

'numeric',
I wouldn't say it was the 'best', but with the qualifications
you put on it, a vertrical 1/2 wave should work fine.
'Doc

649. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 06:32:14 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <kAtOa.4895$ju6.89748@newsfep4-glfd.server.ntli.net>
Source record: 113193
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"J. McLaughlin" <JCM@Power-Net.Net> wrote in message
news:vgk8b4ejhdkr80@corp.supernews.com...
> OK. ...and Brian Reay is ?
> 73 Mac N8TT
>
St Brian ?
The next Bishop of Reading of course

Steve Terry

650. Painting a j-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 07:16:33 UTC
From: ShadowDancer <shadowdancer99@sbcglobal.net>
Message-ID: <lduOa.297$Zx2.31564031@newssvr14.news.prodigy.com>
Source record: 113215

Could I get some input on whether it would be prudent to paint my 2-meter copper tube j-pole or not? I've been told that copper oxide actually increases the gain of the antenna, but I don't know if that gain is enough to outweigh the benefits of painting it...

651. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 07:36:14 UTC
From: Tech <newbury66@hotmail.com>
Message-ID: <VuuOa.4940$ju6.90142@newsfep4-glfd.server.ntli.net>
Source record: 113194
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Walt Davidson" <walt99@tiscali.co.uk> wrote in message
news:3mqkgvs1vbpu746aa4hl8ikit0d8p07859@4ax.com...
> On Mon, 7 Jul 2003 21:43:34 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
> wrote:
>
> >OK. ...and Brian Reay is ?
>
> M3OSN ... the principal promoter of the UK's so-called "Foundation
> Licence" (aka M3/CB), and the object of much derision on the
> uk.radio.amateur newsgroup.
>
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @freeuk.com

Altenatively it could be said that he is a gentleman, never takng the bait and lowering himself to the gutter like many (including myself at times) in this newsgroup.

A man who seeks to encourage others into the hobby, and seeks only to share the enjoyment that he has had in the last 20+ years with others.

He has no fear of progression, and meets it head on. He is not stuck in the past like many others.

He is the kind of "face" that Amateur Radio should have, a welcoming friendly one. There is very little of that to be seen in this newsgroup.

Regards,

Alan
M3TEC / 2E1TEC

652. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 07:38:07 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0a7911_1@mk-nntp-1.news.uk.worldonline.com>
Source record: 113195
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

The original post definitely climaxed to control your
transceiver.

Hank Oredson <horedson@att.net> wrote in message
news:6EjOa.43125$0v4.2962203@bgtnsc04-news.ops.worldnet.att.net...
> > If the DX is going to be identified and
> > tracked for you, with your rig being tuned for you, as was implied,
>
> Seems like you have no clue what you are talking about.
>

653. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 07:44:27 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0a7911$2_1@mk-nntp-1.news.uk.worldonline.com>
Source record: 113196
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Nope. Off the top of my head. Result of years of
technical improvement in the Ham tradition.

In any case, I don't use the Web due to the cost of the
phone calls.

Suggest you change your CB habit (apparent from the
silly childish remark below) and look at becoming
a Ham.

<olllllllo@sbcglobal.net> wrote in message
news:J6jOa.263$ne6.146@newssvr32.news.prodigy.com...
> Looks like you might have done a rudimentary search on the
> Internet for these technologies.

654. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 07:56:14 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bedteu$g2q$1@sparta.btinternet.com>
Source record: 113197

"Leland Cox" wrote
> Reg, Not sure why you hate the G5RV so much. I have several friends
> using them on 60M with low SWR!
==========

Leyland, You got me all wrong!

I don't in the least hate G5RV's. (Note the plural). All are fascinating.

I just can't understand why they are religiously worshipped by so many (millions) of followers.

I have several friends who *don't*. ;o)

Remove the coax to make a true G5RV, and taking together the whole collection of bands, wire-diameters, heights, line Zo's, design-frequencies and superimposed radiation patterns, the G5RV is indistinghishable from any other dipole taken at random from the pile.

Here's another interesting fact. If the impedance of the 1/2-wavelength feedline is changed from 300 to 450 to 600 ohms you will have three altogether different sets of resonant frequencies and line input impedances. But you will still have a G5RV working as Mr Varney intended on 14.15 MHz. Take your pick.

I now (8th July, 2003) propose another simple multi-band, multi-direction without rotating, antenna.

It's a 142-feet dipole, fed via a balanced line of any impedance which is 1/2-wavelength long at the anenna's design frequency of 10.1 MHz. It will go like a bomb on the 30 metre band with a lovely clover-leaf radiation pattern. With a tuner it will work very well at other frequencies between about 2.7 and 30 MHz.

If interested use program DIPOLE3

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

> I have had many antennas and the G5RV is sure the most versatile. I have
> had great luck with a common feed dipole for 80 40 20 and 10. Just takes
> a lot of wire and 40 and 80 are not broad banded enough to cover their
> whole band!
> The antenna you describe will be directional on many frequencies. It

> will have lobes all over the place on any thing but the resonate
> frequency and it will have two major lobes. But the G5RV does the same
> thing!!!!
> Les, AA4F
>

655. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:00:05 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0a7c6a$1_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113199
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Oops - must have been a lazy acceptance of the spelling chequer's
suggestion...
The original post definitely referred to control of your
transceiver.

Airy R Bean <SPAM@trap> wrote in message news:...
> The original post definitely climaxed to control your
> transceiver.
> Hank Oredson <horedson@att.net> wrote in message
> news:6EjOa.43125$0v4.2962203@bgtnsc04-news.ops.worldnet.att.net...
> > > If the DX is going to be identified and
> > > tracked for you, with your rig being tuned for you, as was implied,
> > Seems like you have no clue what you are talking about.

656. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:05:41 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0a7c6b$1_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113200
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

There are many things that "could be said" but that is no guarantee
of their veracity.

Can we assume that your statement, "never takng the bait
and lowering himself to the gutter like many (including myself at times)"
is your admission of being a CBer?

Tech <newbury66@hotmail.com> wrote in message
news:VuuOa.4940$ju6.90142@newsfep4-glfd.server.ntli.net...
> "Walt Davidson" <walt99@tiscali.co.uk> wrote in message
> news:3mqkgvs1vbpu746aa4hl8ikit0d8p07859@4ax.com...
> > On Mon, 7 Jul 2003 21:43:34 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
> > wrote:
> > >OK. ...and Brian Reay is ?
> > M3OSN ... the principal promoter of the UK's so-called "Foundation
> > Licence" (aka M3/CB), and the object of much derision on the
> > uk.radio.amateur newsgroup.
> Altenatively it could be said that he is a gentleman, never takng the bait
> and lowering himself to the gutter like many (including myself at times)
in
> this newsgroup.
> A man who seeks to encourage others into the hobby, and seeks only to
share
> the enjoyment that he has had in the last 20+ years with others.
> He has no fear of progression, and meets it head on. He is not stuck in
the
> past like many others.
> He is the kind of "face" that Amateur Radio should have, a welcoming
> friendly one. There is very little of that to be seen in this newsgroup.

657. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:19:38 UTC
From: George <g@george.com>
Message-ID: <B%uOa.6423$nP.4744@newsfep4-winn.server.ntli.net>
Source record: 113198
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a7911$2_1@mk-nntp-1.news.uk.worldonline.com...
> Nope. Off the top of my head. Result of years of
> technical improvement in the Ham tradition.
>
> In any case, I don't use the Web due to the cost of the
> phone calls.
>

You blew £350 on a law book you don't understand and quibble over the cost of a phone call?

Common sense and maths aren't a strong point of yours, are they?

G

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

658. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:31:30 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0a81f7_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113203
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Are the comments below in the style and language of
someone who pretends to be a legal professional?

George <g@george.com> wrote in message
news:B%uOa.6423$nP.4744@newsfep4-winn.server.ntli.net...
> You blew ?350 on a law book you don't understand and quibble over the
cost
> of a phone call?
> Common sense and maths aren't a strong point of yours, are they?

659. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:35:29 UTC
From: George <g@george.com>
Message-ID: <sevOa.6430$nP.1213@newsfep4-winn.server.ntli.net>
Source record: 113201
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

```
"Tech" <newbury66@hotmail.com> wrote in message
news:VuuOa.4940$ju6.90142@newsfep4-glfd.server.ntli.net...
>
> "Walt Davidson" <walt99@tiscali.co.uk> wrote in message
> news:3mqkgvs1vbpu746aa4hl8ikit0d8p07859@4ax.com...
> > On Mon, 7 Jul 2003 21:43:34 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
> > wrote:
> >
> > >OK. ...and Brian Reay is ?
> >
> > M3OSN ... the principal promoter of the UK's so-called "Foundation
> > Licence" (aka M3/CB), and the object of much derision on the
> > uk.radio.amateur newsgroup.
> >
> > 73 de G3NYY
> >
> > --
> > Walt Davidson Email: g3nyy @freeuk.com
>
> Altenatively it could be said that he is a gentleman, never takng the bait
> and lowering himself to the gutter like many (including myself at times)
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> this newsgroup.
>
> A man who seeks to encourage others into the hobby, and seeks only to
share
> the enjoyment that he has had in the last 20+ years with others.
>
> He has no fear of progression, and meets it head on. He is not stuck in
the
> past like many others.
>
> He is the kind of "face" that Amateur Radio should have, a welcoming
> friendly one. There is very little of that to be seen in this newsgroup.
>

He also co-wrote some excellent training material that many clubs, schools
and youth groups (inc our sea cadet group) utilise to train new amateurs.

"Airy Bean" is Gareth Evans, G4SDW, of 13 Hardens Close, Chippenham,
Wiltshire, SN15 3AA. Gareth is one of life's failures who is jealous of
other's success but shows promise as dog turd.

G.
```

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

660. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:40:12 UTC
From: George <g@george.com>
Message-ID: <SivOa.6433$nP.2743@newsfep4-winn.server.ntli.net>
Source record: 113202
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a7c6b$1_3@mk-nntp-1.news.uk.worldonline.com...
> There are many things that "could be said" but that is no guarantee
> of their veracity.
>
> Can we assume that your statement, "never takng the bait
> and lowering himself to the gutter like many (including myself at times)"
> is your admission of being a CBer?
>
>
Some people make the occassional special trip to the gutter. You seem to
live there Gareth.

G.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

661. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:42:21 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0a84d8_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113204
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Is the style and language of the below that which
is expected from someone who pretends to be a
legal professional?

George <g@george.com> wrote in message
news:SivOa.6433$nP.2743@newsfep4-winn.server.ntli.net...
> Some people make the occassional special trip to the gutter. You seem to
> live there

662. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 08:59:26 UTC
From: "Wolfgang K. Meister" <no.mail@please.com>
Message-ID: <og1lgvko79mb35ijr01mprh1jv442q2tc4@4ax.com>
Source record: 113205

>> Looking for the best 20m vertical antenna design; without radials

>center fed vertical dipole >gap is one, I think

I have a friend (OE3TL) that has *tried* the GAP. Actually its a
top-feed dipole. We had to put this 'christmas-tree' up and down
several times, because the SWR was out and away.

So I decided to buy a hy-gain AV-640. The concept is new and unique,
the AV-640 uses vertical stubs, there is nothing to get 'wet' and
nothing that can be burned out etc. The subs are more slim and the
construction is not as 'christmas-tree-like' as the GAP is.

My experience with the AV-640:

- you need guy rope in 14ft from the base. Any antenna needs this,
because it's a mechanical illusion to have an antanna of this size and
construction without supporting ropes.

- replace the hose clam with 'real ones' (I have pictures on this)
- send me an email to oe1mww @ qsl.net (remove the blanks!) and I will
send you pictures how we built it - and will answer your questions

73's
Wolfgang
OE1MWW

663. Re: 13 cm antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 09:11:00 UTC
From: Bernhard Rhondin <bernhard_rhondin@hotmail.com>
Message-ID: <3F0A8AA4.16348086@hotmail.com>
Source record: 113209

http://www.wimo.de

Have good antennas for 13cm, and sell to all EU (credit cards accepted).

rgrds,
BR.

andy JACKSON wrote:

> please could some one help me i am after a good 13 cms antenna for the use
> on atv,i have reciever at the moment but no metal work what would be the
> best and were to buy from. thanks for looking at this message andy
> 2e1klp/m3klp

664. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 09:14:14 UTC
From: Nigel Hewitt <news@REMOVETHISnigelhewitt.net>
Message-ID: <3f0a8515$1@news.star.co.uk>
Source record: 113210
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

George wrote:
> "Walt Davidson" wrote
>> Or are you the usual type of anonymous coward who sends poison-pen
>> letters and makes malicious telephone calls?
>>
>> 73 de G3NYY
>
> And you are?

I can't be bothered to look Walt up but I'm in the book
and I suspect he is. The full name and callsign tend
to imply somebody who stands by his opinions and is
prepared to own them. I may disagree with him at times
but at least he doesn't hide who he is.

nigelH
G8JFT

665. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 09:17:52 UTC
From: George <g@george.com>
Message-ID: <bSvOa.6449$nP.3671@newsfep4-winn.server.ntli.net>
Source record: 113206
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a84d8_3@mk-nntp-1.news.uk.worldonline.com...
> Is the style and language of the below that which
> is expected from someone who pretends to be a
> legal professional?
>

What 'language'?

G

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

666. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 09:18:36 UTC
From: George <g@george.com>
Message-ID: <TSvOa.6450$nP.2195@newsfep4-winn.server.ntli.net>
Source record: 113207
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Walt Davidson" <walt99@tiscali.co.uk> wrote in message
news:j80lgv8a83919cms35dsou7kfs7tmikrhs@4ax.com...
> On Tue, 8 Jul 2003 09:35:29 +0100, "George" <g@george.com> wrote:
>
> >"Airy Bean" is <snipped> .... is one of life's failures who is jealous
of
> >other's success but shows promise as dog turd.
> >
> >G.
>
> As you are so keen to publicise the identity and address of other
> contributors to the newsgroup, no doubt you will also publish your own
> details?
>
> I am waiting expectantly.
>
> Or are you the usual type of anonymous coward who sends poison-pen
> letters and makes malicious telephone calls?
>
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @freeuk.com

And you are?

G.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

667. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 09:20:21 UTC
From: George <g@george.com>
Message-ID: <vUvOa.6452$nP.6342@newsfep4-winn.server.ntli.net>
Source record: 113208
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a81f7_3@mk-nntp-1.news.uk.worldonline.com...
> Are the comments below in the style and language of
> someone who pretends to be a legal professional?
>

Who is 'pretending' ?

G

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

668. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 10:16:28 UTC
From: Frank Turner-Smith G3VKI <g3vki@ntlworld.com>
Message-ID: <0SwOa.6482$nP.2619@newsfep4-winn.server.ntli.net>
Source record: 113211
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"George" <g@george.com> wrote in message
news:B%uOa.6423$nP.4744@newsfep4-winn.server.ntli.net...
>
> "Airy R Bean" <SPAM@trap> wrote in message
> news:3f0a7911$2_1@mk-nntp-1.news.uk.worldonline.com...
> > Nope. Off the top of my head. Result of years of
> > technical improvement in the Ham tradition.
> >
> > In any case, I don't use the Web due to the cost of the
> > phone calls.
> >
>
> You blew £350 on a law book you don't understand and quibble over the
cost
> of a phone call?
>
> Common sense and maths aren't a strong point of yours, are they?
>
> G
>
>
ROTFLMAO - Nice one, George!
--
;>)
73 de Frank Turner-Smith G3VKI - mine's a pint.

669. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 10:47:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0aa382$1_8@corp.newsgroups.com>
Source record: 113212

Jim Kelley wrote:
> Hi Dave,
>
> Please don't be persuaded by Cecil's strawmen. His characterization of
> my opinion is almost never a good match to the opinion I've actually
> expressed.
>
> I had some issues with Cecil's broad generalizations. He claimed that
> the Law of Conservation of Energy from the text books was irrelevant.

Please don't be persuaded by Jim's strawmen. His characterization of
my opinion is almost never a good match to the opinion I've actually
expressed.

Jim has painted himself into a technical corner and cannot explain why
the reflected power flow vector changes directions at a Z0-match point
so he, as typical for him, resorts to ad hominem attacks.

> I've been chastised for having a
> similar opinion to some experts in the field.

No, you have been chastised for having a different opinion from
some experts in the field, namly Johnson, Ramo, Whinnery, Hecht,
and Melles-Griot.

> But he shows 50 watts
> being reflected, and then struggles to explain how it gets redirected
> back toward the load. The answer is simply that that amount of power is
> NOT reflected in the first place.

We know that the reflected power flow vector gets turned around at a Z0-
match point. How does the reflected power flow vector get turned around
if the energy is not reflected? To where does the reflected power flow
vector flow if it doesn't turn around? Wave cancellation obviously turns
the reflected power flow vector around.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

670. Re: Spi-Ro Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 11:03:32 UTC
From: airwavesmith@aol.com
Message-ID: <20030708070332.27284.00000005@mb-m19.aol.com>
Source record: 113213

Just go to SPIRO website and from there it will take you all the specs of their antenna. I've done it before and good luck!
airwavesmith@aol

671. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 11:12:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0aa953_8@corp.newsgroups.com>
Source record: 113214

Jim Kelley wrote:

> W5DXP wrote:
>
>>Jim Kelley wrote:
>>>Here's a thought: You might consider the possiblility that the answer
>>>has already been provided.
>>
>>If it has, I haven't seen it.
>
> One apparently sees only what one wants to see.

Jim, if you are talking about your answers with all those contradictions, they are obviously technically incorrect. You haven't even explained why the reflected power flow vector reverses direction.

> Obviously you need to explain how a vector get turned around in the
> absence of a reflective surface, seeing as your entire argument hinges
> upon it.

Wave cancellation between coherent wavefronts traveling in the same direction turns the reflected power vector around, Jim, just as explained on the Melles-Griot web page. What is it about 'lost' rearward-traveling reflected energy joining the forward-traveling beam as enhanced intensity that you don't understand?

>>Where do those power flow vectors go?
>
> I have no idea what that's supposed to mean.

That's obvious, Jim, and it's really sad. Vectors represent things with magnitudes that move in the vector direction. The vector direction of the reflected power flow vector reverses at the Z0-match point. I have presented an explanation of why. Walter Maxwell has presented an explanation of why. All you have presented are some arm-waving mantras which contradict the laws of physics.

> I can't think of any other way for it to work, so it's not surprising to
> me at all.

You say you are not surprised that the reflected power flow vector reverses direction at a match point. How does that happen without the energy in that power flow vector changing directions?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

672. Re: comments on this off center fed antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 11:46:56 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <5CSdndgSSdcSMpeiXTWJhw@ctc.net>
Source record: 113216

> Sounds like a typical 'OCF' for 80 meters, except
> for the balun. Wonder why they want to use one?
> 'Doc

It is a OFC antenna for 80 meters. I ran across an artical on the internet a while back and forgot where it was. From what I remember the feed point was moved some from the normally used point to get something closer to 200 ohms instead of 300 ohms so that a 4:1 balun and coax could be used instead of feeding it with open wire feed line. I know it is a comprimise antenna but was thinking of putting one up at a place where the supports will be in the correct place to run the feedline a shorter distance than if I use a center fed dipole . I also want to run more than one band and not use the open wire feeders. The antenna is for a temporary location. I have not done much work with the low band antennas as most of my work has been with weak signal VHF and above.

What I am looking for is a simple antenna without traps that will allow me to keep a sched on 80 meters with a friend while I am away form home and also have the ability to use other bands without a big loss in efficency and be coax fed. I know I could just use a 80 meter dipole but would be taking a big loss on 40 meters if I use coax to feed it.

73 de KU4PT

673. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 12:00:50 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <WfydnTmMbvIML5eiXTWJig@ctc.net>
Source record: 113217

>
> I don't in the least hate G5RV's. (Note the plural). All are
fascinating.
>
> I just can't understand why they are religiously worshipped by so many
> (millions) of followers.
>

I have the same problem with the J-pole VHF antennas. I just don't understand why they are worshipped either. Sort of reminds me of the old Ringo antennas when I first got started in ham radio in the 70's. Not much antenna but most everyone was using them, same as with the 11 element CC antennas.

I don't do the low bands much but have read that one of the best antennas for multibands was to take about 280 feet of wire (1 wavelength at 80 meters) and put the ends as far apart as you can. then bring what is left of the wire in the shack by making it into an open wire feedline. For someone that cares about the low band antennas it might be a good project to change the length of the antenna portion of the wire vers the feedline portion.

674. Re: Painting a j-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 12:42:10 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f0abc06$0$48893$edfadb0f@dtext02.news.tele.dk>
Source record: 113119

Hello

> Could I get some input on whether it would be prudent to paint my 2-meter
> copper tube j-pole or not? I've been told that copper oxide actually
> increases the gain of the antenna, but I don't know if that gain is enough
> to outweigh the benefits of painting it...

Just curious, what is the benefit of painting it ???

Regards Max

675. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 12:49:25 UTC
From: George <g@george.com>
Message-ID: <uYyOa.6540$nP.1152@newsfep4-winn.server.ntli.net>
Source record: 113218
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Walt Davidson" <walt99@tiscali.co.uk> wrote in message
news:j80lgv8a83919cms35dsou7kfs7tmikrhs@4ax.com...
> On Tue, 8 Jul 2003 09:35:29 +0100, "George" <g@george.com> wrote:
>
> >"Airy Bean" is <snipped> .... is one of life's failures who is jealous
of
> >other's success but shows promise as dog turd.
> >
> >G.
>
> As you are so keen to publicise the identity and address of other
> contributors to the newsgroup, no doubt you will also publish your own
> details?
>
> I am waiting expectantly.
>

The isn't the amateur bands so callsigns are not needed. Who knows if you
are really Walt Davidson who holds the callsign you use?

You can find Gareth's details in Google, if you care to look. I am sure the
real Walt Davidson's are on one of the roll of elector CDs.

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

676. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 12:49:43 UTC
From: Martin <mabmrtn.delete.this@icqmail.com>
Message-ID: <3f0abdf9$0$45183$65c69314@mercury.nildram.net>
Source record: 113120
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a84d8_3@mk-nntp-1.news.uk.worldonline.com...
> Is the style and language of the below that which
> is expected from someone who pretends to be a
> legal professional?

It seems to be perfectly good English, correctly spelled (spelt?) and in no way abusive. It expresses an opinion which you may (almost certainly will) disagree with, but there are plenty who will find it very valid... You seem to be very ready to make your own subjective judgements of others but have great difficulty accepting their right to make their own of you.

>
> George <g@george.com> wrote in message
> news:SivOa.6433$nP.2743@newsfep4-winn.server.ntli.net...
> > Some people make the occassional special trip to the gutter. You seem
to
> > live there
>
>

Martin (G8FXC & M3ABL)

677. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 12:55:51 UTC
From: Brian Reay <brian.reay@bigfoot.com>
Message-ID: <beeev8$418j3$1@ID-140397.news.dfncis.de>
Source record: 113121
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"George" <g@george.com> wrote in message
news:SivOa.6433$nP.2743@newsfep4-winn.server.ntli.net...
>
> "Airy R Bean" <SPAM@trap> wrote in message
> news:3f0a7c6b$1_3@mk-nntp-1.news.uk.worldonline.com...
> > There are many things that "could be said" but that is no guarantee
> > of their veracity.
> >
> > Can we assume that your statement, "never takng the bait
> > and lowering himself to the gutter like many (including myself at
times)"
> > is your admission of being a CBer?
> >
> >
> Some people make the occassional special trip to the gutter. You seem to
> live there Gareth.
>

ROTFL etc. Good put down George. Too good to waste in Gareth.

--
73
Brian
G8OSN
www.g8osn.org.uk

and

www.qsl.net/g8osn for FREE training material for the UK Foundation and
Intermediate Licences

678. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 13:26:54 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0ac723_2@mk-nntp-1.news.uk.worldonline.com>
Source record: 113122
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

When we find out who you are, it will be an interesting exercise
to present your profile to the Law Society.....
Either.....
1. You are making a false pretence as to your status as a legal
professional, in which case the law, let alone it's Society, will
be after you.
or.....
2. Your childish and insulting outbursts, ("shows promise as
dog turd)"? given virtually in the same breath as you pretend
to be a legal professional are bringing the legal profession
into disrepute.

George <g@george.com> wrote in message
news:uYyOa.6540$nP.1152@newsfep4-winn.server.ntli.net...
> "Walt Davidson" <walt99@tiscali.co.uk> wrote in message
> news:j80lgv8a83919cms35dsou7kfs7tmikrhs@4ax.com...
> > On Tue, 8 Jul 2003 09:35:29 +0100, "George" <g@george.com> wrote:
> > >"Airy Bean" is <snipped> .... is one of life's failures who is
jealous
> of
> > >other's success but shows promise as dog turd.
> > As you are so keen to publicise the identity and address of other
> > contributors to the newsgroup, no doubt you will also publish your own
> > details?
> > I am waiting expectantly.
> The isn't the amateur bands so callsigns are not needed. Who knows if you
> are really Walt Davidson who holds the callsign you use?

679. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 13:36:58 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f0acabb_1@news1.prserv.net>
Source record: 113123

--
<Snip>>
> Well, I sorta disagree for pretty much the same reasons as Roy. The
> patterns , unless distorted by the car body, will not change very much
<snip>

Exactly. The patterns are highly dependent on the uncontrolled car body conductivity. Modeling the antenna is secondary. Modeling the car body is impractical, except in a general sense, because no two even identical models from the same production run, are alike at RF. So, the shootouts are often a comparison of two automobiles, rather than 2 antennas. If you want to compare antennas, mount two of them butt to butt as a dipole with a 1 watt transmitter at the joint, hang them from a blimp, and measure the far field. Then you are measuring antennas. Otherwise, the car rules.

>Well, being most all mobile verticals are not really well suited for
>NVIS type operation, there should not be too much high angle
>radiation, unless the pattern is distorted by the car body

So, very minor changes in pattern make big changes in the usable signal. You are making the point for me, and are not looking at what you are writing. "Unless the pattern is distorted by the car body" My observation has been that every mobile antenna article starts by stating that the car body is the controlling factor in the pattern which you can't control.

W5VPQ

680. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 13:45:49 UTC
From: sjbeyers@trianglenet.net
Message-ID: <72befaab.0307080545.2542414c@posting.google.com>
Source record: 113124

"kf4tun" <kf4tun@adelphia.net> wrote in message
news:<Hx4Oa.10419$Hw.7535985@news2.news.adelphia.net>...
> Where does one buy aluminum solder?
>
> Jim, kf4tun
>
> "froggers" <not.froggers@nospam.ntlworld.com> wrote in message
> news:3I0Oa.2719$vn2.90404@newsfep2-gui.server.ntli.net...
> > Solder it on
> >
> > Nick
> >
> >

Try www.solder-it.com. Not all aluminum can be soldered, but some can be.

Steve

681. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 13:50:59 UTC
From: olllllllo@sbcglobal.net
Message-ID: <7%zOa.2418$Ul7.598931553@newssvr12.news.prodigy.com>
Source record: 113126
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Top of your head? Your answers were essentially
dead wrong, or at least answers from someone who
had little to no grasp of the technology.

Well, I thought I might have been in a QSO with
someone of basic mental capacity. Didn't realize it
was with such a mental nutcase like you, Gareth.

Suggest you get some help, and soon.

73

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a7911$2_1@mk-nntp-1.news.uk.worldonline.com...
> Nope. Off the top of my head. Result of years of
> technical improvement in the Ham tradition.
>
> In any case, I don't use the Web due to the cost of the
> phone calls.
>
> Suggest you change your CB habit (apparent from the
> silly childish remark below) and look at becoming
> a Ham.
>
> <olllllllo@sbcglobal.net> wrote in message
> news:J6jOa.263$ne6.146@newssvr32.news.prodigy.com...
> > Looks like you might have done a rudimentary search on the
> > Internet for these technologies.
>
>
>
>
>

682. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 13:56:23 UTC
From: George <g@george.com>
Message-ID: <gXzOa.6565$nP.4554@newsfep4-winn.server.ntli.net>
Source record: 113125
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0ac723_2@mk-nntp-1.news.uk.worldonline.com...
> When we find out who you are, it will be an interesting exercise
> to present your profile to the Law Society.....
> Either.....
> 1. You are making a false pretence as to your status as a legal
> professional, in which case the law, let alone it's Society, will
> be after you.
> or.....
> 2. Your childish and insulting outbursts, ("shows promise as
> dog turd)"? given virtually in the same breath as you pretend
> to be a legal professional are bringing the legal profession
> into disrepute.
>

So you are an expert on the rules and regs of the Law Society as well? Were they included in the last course of study you did (you know the one- the test piece was "Do you want fries with that?")

A Gareth of all trades but master of none.

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

683. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:05:46 UTC
From: Matt <piss.off@spammers.com>
Message-ID: <R0AOa.4738$oN.188119@newsfeeds.bigpond.com>
Source record: 113127
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

OOOOOOOOOOOOOHHHHHHHHHH YEAH - the earth certainly moved for me. Hope you
did controling your rig.

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a7911_1@mk-nntp-1.news.uk.worldonline.com...
> The original post definitely climaxed to control your
> transceiver.
>
> Hank Oredson <horedson@att.net> wrote in message
> news:6EjOa.43125$0v4.2962203@bgtnsc04-news.ops.worldnet.att.net...
> > > If the DX is going to be identified and
> > > tracked for you, with your rig being tuned for you, as was implied,
> >
> > Seems like you have no clue what you are talking about.
> >
>
>
>

684. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:07:31 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Inmdnbopk9O0TZeiXTWJjA@comcast.com>
Source record: 113128

I would say a vertical 1/2 wave dipole. If you can hang it off a tree branch from the top, and run the cable off at 90 degrees, the price will be almost free.

Tam/WB2TT
"numeric" <numeric@worldnet.att.net> wrote in message news:0FqOa.44522$3o3.2977236@bgtnsc05-news.ops.worldnet.att.net...
> Looking for the best 20m vertical antenna design; without radials or buried
> ground wires. There is no restriction on the antenna height; except, that I
> would like to support the antenna at its base and mounted on the roof. I am
> more concerned about a design that optimizes the antenna efficiency and
> provides a low angle of radiation rather then for a 50 ohm impedance. The
> ground is basically sand, not much conductivity.
>
> Any Ideas?
>
> Thanks.
>
>

685. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:09:48 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0ad1e0_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113129
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Grow up, OM.

<olllllllo@sbcglobal.net> wrote in message
news:7%zOa.2418$Ul7.598931553@newssvr12.news.prodigy.com...
> Top of your head? Your answers were essentially
> dead wrong, or at least answers from someone who
> had little to no grasp of the technology.

686. Re: Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:11:17 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <beeje1$vn2$1@f04n12.cac.psu.edu>
Source record: 113131

Hi Jeff,
The best way for you to find the answer is to down load the demo version on EZNEC and try it your self.
But I became interested and modeled it myself.

On 7.15MHz, a dipole at 30' over average real ground, with each leg 401.75" long has a Z of 63.4+J0.7338 Ohms with #14 wire. Changing the wire to #10 changed the Z to 63.14+J2.817 Ohms. This means the resonate frequency is lower. By shorting each side by 0.53" to 401.22" brought antenna back to resonance at 7.15MHz with a Z of 62.98+j0.7913 Ohms. Changing the wire diameter from #14 to #10 lowered the resonance frequency, which took a 0.53" shorting of each leg to bring it back to 7.15MHz and lowered the real part of the impendence by 0.32 Ohms. This is because with the larger diameter wire the RF resistance went down. As the loss with the larger wire went down, the gain of the antenna went up from 7.97dbi to 8.01dbi a change of 0.05dbi. The bottom line at 40m changing the diameter of the wire makes a very small change which would not be visible with typical ham SWR meters or antenna analyzers.
The effect of changing element diameter becomes more pronounced as you go higher infrequency. At VHF/UHF the effect is very noticeable.

--
John Passaneau
Penn State University, State College Pa.
W3JXP
w3jxp@arrl.net

"Jeff Y." <vswrref@hotmail.com> wrote in message
news:3f09d544.5385368@national-news.stargate.net...
> Hi all,
>
> I've been trying to find some data on what happens to the feedpoint
> impedence of an antenna when the thickness of the wire increases. I
> know for a fact the bandwidth will increase somewhat but what does the
> impedence do, say going from 14 gauge to 10 gauge copper wire? Does
> it increase or decrease?
>
>
> Jeff Y.
>
>

687. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:12:09 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0ad1e1_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113130
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Is the style and language of the posting quoted below that
which is to be expected from someone who pretends to
be a legal professional?

George <g@george.com> wrote in message
news:gXzOa.6565$nP.4554@newsfep4-winn.server.ntli.net...
> So you are an expert on the rules and regs of the Law Society as well?
Were
> they included in the last course of study you did (you know the one- the
> test piece was "Do you want fries with that?")

688. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:22:20 UTC
From: Brian Reay <brian.reay@bigfoot.com>
Message-ID: <beek1e$4a91e$1@ID-140397.news.dfncis.de>
Source record: 113132
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0ad1e1_3@mk-nntp-1.news.uk.worldonline.com...
> Is the style and language of the posting quoted below that
> which is to be expected from someone who pretends to
> be a legal professional?
>
> George <g@george.com> wrote in message
> news:gXzOa.6565$nP.4554@newsfep4-winn.server.ntli.net...
> > So you are an expert on the rules and regs of the Law Society as well?
> Were
> > they included in the last course of study you did (you know the one- the
> > test piece was "Do you want fries with that?")
>

Now you mention it Gareth, there is a Rumpole type style to this George.

Either way, I think his last post was match point. Game, set, and match to
George.
--
73
Brian
G8OSN
www.g8osn.org.uk

and

www.qsl.net/g8osn for FREE training material for the UK Foundation and
Intermediate Licences

689. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:26:13 UTC
From: Martin <mabmrtn.delete.this@icqmail.com>
Message-ID: <3f0ad495$0$45174$65c69314@mercury.nildram.net>
Source record: 113133
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0ac723_2@mk-nntp-1.news.uk.worldonline.com...
> When we find out who you are, it will be an interesting exercise
> to present your profile to the Law Society.....
> Either.....
...
> 2. Your childish and insulting outbursts, ("shows promise as
> dog turd)"? given virtually in the same breath as you pretend
> to be a legal professional are bringing the legal profession
> into disrepute.
>

Hmmm, as one who came perilously close to marrying a member of the legal
profession, I can assure you that they need no help bringing the profession
into disrepute :-)

Martin (G8FXC & M3ABL)

690. Feeding a copper pipe J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:40:24 UTC
From: Bill Grzanich <nomail@nospam.com>
Message-ID: <Xns93B2627721BECorganix4mindspringco@198.99.146.10>
Source record: 113134

Hi, All.

I've been reading several web pages about the construction of copper pipe J-pole antennas for 2 meters, and they're all quite similar, with one exception: some say to connect the coax center conductor to the stub, and others say to connect the coax shield to the stub. Is one preferred over the other? Does it matter?

Thanks and 73.

-Bill

691. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:44:25 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F0AD8B1.6D82A3CE@shaw.ca>
Source record: 113135

numeric wrote:
>
> Looking for the best 20m vertical antenna design; without radials or buried
> ground wires. There is no restriction on the antenna height; except, that I
> would like to support the antenna at its base and mounted on the roof. I am
> more concerned about a design that optimizes the antenna efficiency and
> provides a low angle of radiation rather then for a 50 ohm impedance. The
> ground is basically sand, not much conductivity.
>
> Any Ideas?
>
> Thanks.

A coaxial dipole (coax feedline runs down through the center of the
hollow lower element).
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

692. Re: Feeding a copper pipe J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:46:04 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F0AD914.CD079F32@shaw.ca>
Source record: 113136

Bill Grzanich wrote:
>
> Hi, All.
>
> I've been reading several web pages about the construction of copper pipe
> J-pole antennas for 2 meters, and they're all quite similar, with one
> exception: some say to connect the coax center conductor to the stub, and
> others say to connect the coax shield to the stub. Is one preferred over
> the other? Does it matter?
>
> Thanks and 73.
>
> -Bill

It shouldn't make a difference since the feedpoint is balanced with
respect to ground.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

693. Dipole Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:48:36 UTC
From: whitehat <rpav@suffolk.lib.ny.us>
Message-ID: <9WAOa.270$603.15164@iad-read.news.verio.net>
Source record: 113137

I recently bought some surplus ham equipment to get
started in the hobby and it came with the beginnings
of a dipole antenna but I don't know what band it is
for and what I need to finish it. Here's what I have:

From the center insulator there is 22 feet of wire
on each side that terminates on a plastic insulator
board. There is a one inch gap and then another 22 feet
of wire to the end insulators.

Some help?

694. Re: Painting a j-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 14:56:30 UTC
From: ShadowDancer <shadowdancer99@sbcglobal.net>
Message-ID: <yYAOa.296$bi5.20903071@newssvr21.news.prodigy.com>
Source record: 113138

Well, there's protection from the elements, and also camouflage against sky
if painted light gray or blue..

"Max" <Max_Jens@post9.tele.dk.invalid> wrote in message
news:3f0abc06$0$48893$edfadb0f@dtext02.news.tele.dk...
> Hello
>
> > Could I get some input on whether it would be prudent to paint my
2-meter
> > copper tube j-pole or not? I've been told that copper oxide actually
> > increases the gain of the antenna, but I don't know if that gain is
enough
> > to outweigh the benefits of painting it...
>
> Just curious, what is the benefit of painting it ???
>
> Regards Max
>
>

695. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 15:24:00 UTC
From: kh2d@my-deja.com
Message-ID: <3f0ae059.1336194556@newsgroups.bellsouth.net>
Source record: 113139
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Mon, 7 Jul 2003 17:36:17 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
wrote:

>Almost 140 Beans in the FCC data. Nothing like Airy. He provides
>neither a call, a real E-mail address, nor a location.
> 73 Mac N8TT
>
>--
>J. Mc Laughlin - Michigan USA
>Home: JCM@Power-Net.Net

Lot of people don't provide calls on Usenet, for some reason.
Anybody that provides a real email address must LOVE SPAM.
And if you look at the message headers from Mr. Bean, you
may be able to figure out why he's not in the FCC database.

What I can't figure out is why we need to crosspost this stuff
to five different newsgroups.

Would you be more inclined to agree with Mr. Bean if you
knew his call, where he was, and his email address ?

73, Jim KH2D

696. Re: Feeding a copper pipe J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 15:31:49 UTC
From: Bill Grzanich <nomail@nospam.com>
Message-ID: <Xns93B26B2F4659organix4mindspringco@198.99.146.10>
Source record: 113140

Irv Finkleman <finkirv@shaw.ca> wrote in news:3F0AD914.CD079F32@shaw.ca:

> Bill Grzanich wrote:
>>
>> Hi, All.
>>
>> I've been reading several web pages about the construction of copper
>> pipe J-pole antennas for 2 meters, and they're all quite similar,
>> with one exception: some say to connect the coax center conductor to
>> the stub, and others say to connect the coax shield to the stub. Is
>> one preferred over the other? Does it matter?
>>
>> Thanks and 73.
>>
>> -Bill
>
> It shouldn't make a difference since the feedpoint is balanced with
> respect to ground.

Thanks, Irv.

I suspected as much, but I thought I would confirm it with the Elmers at
large.

Best regards,

-Bill

697. Re: Dipole Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 15:41:47 UTC
From: Guessing <Guessing@connectnet.net>
Message-ID: <%CBOa.69600$1e.37621@fed1read04>
Source record: 113141

See url:http://www.geocities.com/Augusta/7117/antenna.html

"whitehat" <rpav@suffolk.lib.ny.us> wrote in message
news:9WAOa.270$603.15164@iad-read.news.verio.net...
> I recently bought some surplus ham equipment to get
> started in the hobby and it came with the beginnings
> of a dipole antenna but I don't know what band it is
> for and what I need to finish it. Here's what I have:
>
> From the center insulator there is 22 feet of wire
> on each side that terminates on a plastic insulator
> board. There is a one inch gap and then another 22 feet
> of wire to the end insulators.
>
> Some help?
>
>

698. Re: Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 15:44:27 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <beeosr$sq9$1@sparta.btinternet.com>
Source record: 113142

"Jeff Y." wrote >
> I've been trying to find some data on what happens to the feedpoint
> impedence of an antenna when the thickness of the wire increases. I
> know for a fact the bandwidth will increase somewhat but what does the
> impedence do, say going from 14 gauge to 10 gauge copper wire? Does
> it increase or decrease?

==========

Jeff,

Download program DIPOLE3.

Enter any dipole and feedline length, etc.

Change antenna wire diameter and see immediately what happens to dipole
input impedance.

But changes are negligible unless diameter is increased by 10 or 20 times
depending on what you start with.

Program takes into account conductor resistance in addition to changes in
inductance and capacitance of the wire.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

699. Re: Antennas for Kites

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 15:46:36 UTC
From: "William H. O'Hara, III" <whoohara@yahoo.com>
Message-ID: <Xns93B277FB444F7AX2A3DA5M1512AODKAMO@65.100.3.61>
Source record: 113143

"William H. O'Hara, III" <whoohara@yahoo.com> wrote in
news:Xns93AC78BD32A0AAX2A3DA5M1512AODKAMO@65.100.3.61:

> Would someone like to comment on their
> favorite antenna for a kite setup. Would
> you please give reasons such as VSWR,
> ERP, and ease of use.
>
> Thanks
> Bill

Thanks for the replies. I was primarily looking
for help regarding antennas and not the kites.

bill

700. Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 16:00:48 UTC
From: "William H. O'Hara, III" <whoohara@yahoo.com>
Message-ID: <Xns93B27A63AAB83AX2A3DA5M1512AODKAMO@65.100.3.61>
Source record: 113144

Does anyone have some experience with
the Ringo Ranger II?
I just got one for free and I can not
make it work well. The SWR is 1.15 or
thereabouts at 147.800. At approx 145.800
it would be about 3.0. I am not getting
any signal out to the nearby repeater, but
I can hear it full loud and quieting.

bill

701. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 16:09:25 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0aedaf$1_1@mk-nntp-1.news.uk.worldonline.com>
Source record: 113145
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Irrelevant.

Ham Radio is a technical pursuit for those suitably
qualified and motivated. Ham Radio is not about Cheque
Books (CB) nor Childish Blurtings (CB). Ham Radio is not
the business of operating radios without knowledge of their innards
nor the capability to modify and maintain the innards. Such
a pursuit is known as Citizen's Band.

In the context of this thread, what is the difference between the
Yank CBer and the Yank "Radio Ham"? Nothing at all, it
would seem.

<kh2d@my-deja.com> wrote in message
news:3f0ae059.1336194556@newsgroups.bellsouth.net...
> Would you be more inclined to agree with Mr. Bean if you
> knew his call, where he was, and his email address ?

702. Re: Dipole Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 16:18:58 UTC
From: Guessing <Guessing@connectnet.net>
Message-ID: <S9COa.69602$1e.19616@fed1read04>
Source record: 113146

Just Guessin , but first section works out to about 30M (10 Mhz) -- second section 60M (5Mhz)

Make it what you want -- see URL:
http://www.geocities.com/Augusta/7117/antenna.html

See
"whitehat" <rpav@suffolk.lib.ny.us> wrote in message
news:9WAOa.270$603.15164@iad-read.news.verio.net...
> I recently bought some surplus ham equipment to get
> started in the hobby and it came with the beginnings
> of a dipole antenna but I don't know what band it is
> for and what I need to finish it. Here's what I have:
>
> From the center insulator there is 22 feet of wire
> on each side that terminates on a plastic insulator
> board. There is a one inch gap and then another 22 feet
> of wire to the end insulators.
>
> Some help?
>
>

703. Re: Don't send money to Veronica FM! They seem dead!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 16:19:16 UTC
From: henrikolofsson@yahoo.se
Message-ID: <beequ4$l9k$1@xuxa.iecc.com>
Source record: 113147
Cross-posted to: alt.radio.pirate,rec.radio.amateur.antenna,rec.radio.broadcasting

Seems like I won't even get 80%. I have got either money or products
from them yet. Great company I must say!

BR,
Henrik

"128" <jtf66674@hotmal.com> wrote in message news:<bdlko0$l5r$1@xuxa.iecc.com>...
> hello,
>
> Forget only 80% - you should claim the lot back via VISA.
>
> "Henrik" <henrikolofsson@yahoo.se> wrote in message
> news:bdj6m2$i17$1@xuxa.iecc.com...
> > I finally got in touch with someone at Veronica and they will cancel
> > my order and repay me 80% of the value. Ordered the stuff from NRJ
> > yesterday and my order is on it's way!
> >
> > Dave Shrader <david.shrader@attbi.com> wrote in message
> news:<bddld6$i2s$1@xuxa.iecc.com>...
> > > Contact VISA and have VISA credit your account!!
> > >
> > > Deacon Dave, W1MCE
> > >
> > > Henrik wrote:
> > > > I ordered stuff from them worth £152. Payed with my VISA and the
> > > > transaction was quick. Few days later I sent them a mail correcting my
> > > > order but got no reply. Few days more and I sent to their second
> > > > mail...no replay! now it's been 15 days and I have heard nothing from
> > > > them! What should I do?? I thought Veronica FM was a reliable company!
> > > > :(
> > > >
> > > > Best Regards,
> > > >
> > > > Henrik Olofsson
> > > > Sweden
> > > >
> >

704. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 16:29:30 UTC
From: GC <gary@gcavie.freeserve.co.uk>
Message-ID: <MPG.197501c862b1a289896a3@news.cis.dfn.de>
Source record: 113148
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

In article <3f0aedaf$1_1@mk-nntp-1.news.uk.worldonline.com>, SPAM@trap says...
> Irrelevant.
>
> Ham Radio is a technical pursuit for those suitably
> qualified and motivated. Ham Radio is not about Cheque
> Books (CB) nor Childish Blurtings (CB). Ham Radio is not
> the business of operating radios without knowledge of their innards
> nor the capability to modify and maintain the innards. Such
> a pursuit is known as Citizen's Band.
>
> In the context of this thread, what is the difference between the
> Yank CBer and the Yank "Radio Ham"? Nothing at all, it
> would seem.
>

So Childish Blurtings equate to being a CB-er do they? Interesting...

705. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 16:42:00 UTC
From: Tech <newbury66@hotmail.com>
Message-ID: <wuCOa.5210$ju6.94381@newsfep4-glfd.server.ntli.net>
Source record: 113149
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"George" <g@george.com> wrote in message
news:SivOa.6433$nP.2743@newsfep4-winn.server.ntli.net...
>
> "Airy R Bean" <SPAM@trap> wrote in message
> news:3f0a7c6b$1_3@mk-nntp-1.news.uk.worldonline.com...
> > There are many things that "could be said" but that is no guarantee
> > of their veracity.
> >
> > Can we assume that your statement, "never takng the bait
> > and lowering himself to the gutter like many (including myself at
times)"
> > is your admission of being a CBer?
> >
> >
> Some people make the occassional special trip to the gutter. You seem to
> live there Gareth.
>
> G.
>
>
>
>
> ---
>
> Checked by AVG anti-virus system (http://www.grisoft.com).
> Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03
>
>
As I cannot get to Airy's original post as he has been killfiled I will
reply here, with a very long gutter trip.

Airy you are an arsehole, I am wasting no more time with you so FUCK OFF!

706. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:01:30 UTC
From: George <g@george.com>
Message-ID: <OECOa.6640$nP.452@newsfep4-winn.server.ntli.net>
Source record: 113150
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0aedaf$1_1@mk-nntp-1.news.uk.worldonline.com...
> Irrelevant.
>
> Ham Radio is a technical pursuit for those suitably
> qualified and motivated. Ham Radio is not about Cheque
> Books (CB) nor Childish Blurtings (CB). Ham Radio is not
> the business of operating radios without knowledge of their innards
> nor the capability to modify and maintain the innards. Such
> a pursuit is known as Citizen's Band.
>
> In the context of this thread, what is the difference between the
> Yank CBer and the Yank "Radio Ham"? Nothing at all, it
> would seem.

Is the style and language of the posting quoted above that
which is to be expected from someone who pretends to
be a radio amateur?

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

707. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:02:45 UTC
From: George <g@george.com>
Message-ID: <_FCOa.6641$nP.2951@newsfep4-winn.server.ntli.net>
Source record: 113151
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"GC" <gary@gcavie.freeserve.co.uk> wrote in message
news:MPG.197501c862b1a289896a3@news.cis.dfn.de...
> In article <3f0aedaf$1_1@mk-nntp-1.news.uk.worldonline.com>, SPAM@trap
> says...
> > Irrelevant.
> >
> > Ham Radio is a technical pursuit for those suitably
> > qualified and motivated. Ham Radio is not about Cheque
> > Books (CB) nor Childish Blurtings (CB). Ham Radio is not
> > the business of operating radios without knowledge of their innards
> > nor the capability to modify and maintain the innards. Such
> > a pursuit is known as Citizen's Band.
> >
> > In the context of this thread, what is the difference between the
> > Yank CBer and the Yank "Radio Ham"? Nothing at all, it
> > would seem.
> >
>
> So Childish Blurtings equate to being a CB-er do they? Interesting...

Gareth hasn't evolved up to the level of a CB-er yet.

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

708. antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:04:54 UTC
From: Mikael Mortensen <mikael@danbbs.dk>
Message-ID: <3f0af9a0$0$13223$edfadb0f@dread15.news.tele.dk>
Source record: 113152

Hi!

What kind of antenna can i use with a tranciever (Albrecht AE 485 S) in the 27-28Mhz (10 m)?

I tried an 27Mhz mobile antenna, but it can not be adjustet under 3 on the SWR-metre.

/Mikael

709. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:22:50 UTC
From: Steve KA4TMB <steven.heyde@comcast.net>
Message-ID: <aFudncwbHtp2YJeiXTWJkA@comcast.com>
Source record: 113153
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Gareth,

Easy on the use of the word "Yank". Especially if you've never lived here.
I've always hated the use of that term by the "Blokes", especially when I
lived in England.

> In the context of this thread, what is the difference between the
> Yank CBer and the Yank "Radio Ham"? Nothing at all, it
> would seem.

710. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:26:50 UTC
From: richardharrison@webtv.net
Message-ID: <4278-3F0AFEDA-271@storefull-2318.public.lawson.webtv.net>
Source record: 113157

Cecil, W5DXP wrote:
"How does the reflected power flow vector get turned around if energy is not reflected?"

At the shorted receiver, the voltage wave is reflected, out-of-phase with no change in waveform.

Current is reflected, in-phase with no change in waveform.

Practical transmission line work has no use for instantaneous phenomena.

There are three voltages of interest on a transmission line, forward, reflected, and the vector sum of the two.

The vector sum produces VSWR.

The reflection coefficient is the ratio of reflected voltage to forward voltage.

Forward power is the average energy flow rate toward the load.

Reflected power is the average energy flow rate back toward the transmitter.

It`s possible to have a forward power of 300W, a reflected power of 100W, and a power from the transmitter, and delivered to the load, of 200W.

With termination in an open or a short, equal forward and reflected powers are possible with zero watts delivered by the transmitter or delivered to the load.

With a termination which equals Zo, there is no reflected power. All the transmitter power is delivered to the load.

At the junction of dissimilar (different impedance) transmission lines which appear as a Zo match on the transmitter side, but as a mismatch on the second line`s side of the junction, there is no reflection toward the transmitter, if we adjust properly. There is no reflection toward the transmitter because it appears as Zo.

On the second line`s side of the junction, there must be a reflection, otherwise it could not present a match to the transmitter side of the junction.

The reflected volts in the second line side of the junction must be of magnitude and phase to adjust the impedance presented by the line to the first line`s Zo.

A half-wavelength of any Zo repeats the Z of its termination at its input. Its ends exhibit reciprocity.

The reflected voltage arriving back ai the input of a !/2-wave line input would be the same at any number of 1/2-wavelengths. At 1/2-waves back from the load, waves would pass right through each other. But,there is a difference at the cable junction. It`s a discontinuity and at discontinuities, reflections are possible. No reflection on the transmitter side, tells us that the reflection on the load side of the junction is a re-reflection which stands-off the assault of the reflected wave.

The re-reflection doesn`t just reflect the same percentage of energy reflected at the load end of the line, it reflects it all because none of the reflected wave makes it through the junction to its transmitter side.

What`s different about the transmitter end of the line between the junction and the load is that the power is coming from the transmitter end. The reflected volts can be phased to rise and fall in-synch with the forward volts. The reflected volts are always inferior to the forward volts. There is no way inferior in-synch volts are going to coerce current against the stream.

At a discontinuity, you have a difference in abilities of dissimilar transmission lines to generate counter-emf, to hold charge, and a difference in the ratio of these abilities. This can make a reflection.

Best regards, Richard Harrison, KB5WZI

711. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:42:44 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <spqcnf7zgdxpn5aiXTWJhw@ctc.net>
Source record: 113154

"> Does anyone have some experience with
> the Ringo Ranger II?
> I just got one for free and I can not
> make it work well. The SWR is 1.15 or
> thereabouts at 147.800. At approx 145.800
> it would be about 3.0. I am not getting
> any signal out to the nearby repeater, but
> I can hear it full loud and quieting.
>
> bill

It looks like it is resonate too high in the band. Make sure the lengths of the elements are set correct and maybe lengthen them slightly (maybe an inch or two).

YOu probably got it for free because they do not work very well. They tend to act like a long wire and radiate most of the signal up instead of out.

712. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:47:03 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307080947.2c075fb0@posting.google.com>
Source record: 113155

George Munsch" wrote in message<munsch@attglobal.net>

--
<Snip>>
> Well, I sorta disagree for pretty much the same reasons as Roy. The
> patterns , unless distorted by the car body, will not change very much
<snip>

>Exactly. The patterns are highly dependent on the uncontrolled car
body
>conductivity. Modeling the antenna is secondary. Modeling the car
body is
>impractical, except in a general sense, because no two even identical
models
>from the same production run, are alike at RF.

Huh? They shouldn't be that much different if the body sheetmetal is
the same.

> So, the shootouts are often
>a comparison of two automobiles, rather than 2 antennas.

It's a comparison of two antenna systems.

> If you want to
>compare antennas, mount two of them butt to butt as a dipole with a 1
watt
>transmitter at the joint, hang them from a blimp, and measure the far
field.
>Then you are measuring antennas. Otherwise, the car rules.

They are not comparing only antennas. They are comparing antenna
systems.
As I said before, if the car bodies are a major issue, mount all the
antennas on the same radial system, on the ground. Besides, the
performance of most all short verticals is already known. No need for
the blimp exercise, unless you just want to verify what is already
known.

>Well, being most all mobile verticals are not really well suited for
>NVIS type operation, there should not be too much high angle
>radiation, unless the pattern is distorted by the car body

>So, very minor changes in pattern make big changes in the usable
signal.
>You are making the point for me, and are not looking at what you are
>writing. "Unless the pattern is distorted by the car body" My

observation
>has been that every mobile antenna article starts by stating that the
car
>body is the controlling factor in the pattern which you can't
control.

But "MY" car body is controlled. If I keep the same mount, but change antennas, comparison tests between the different antennas is quite valid. And if I change my antenna, the only thing that will change is the efficiency. The pattern is not going to change much at all, even if I add 3 or more feet to it. Now, if you want to compare my "system" to another, then yes, the results will be skewed to the the difference of the other car body, but I think most of us accept this.
Life ain't perfect. But I still stand by the general statement that changing short mobile antennas on the same car body, does not change the pattern much at all, only the efficiency. If NVIS operation is important, do A/B tests from a distance also. Of course, to do this will require a reference antenna to compare to, to allow for propagation changes. On "my" car with my antenna, if I increase the performace at one angle, I'm increasing it at all others being the only real change is efficiency. So as far as comparing antennas all mounted on my same truck, the "shootout" results should be quite accurate. Being as most all the others antennas and bodies will act the same, when comparing car against car, yes, the body will make a difference, but myself, I can accept this. We are comparing the complete systems. Many try to improve the ground systems/car bodies as part of the overall system. I know I did. It's part of the "test".
MK

713. Re: Feeding a copper pipe J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:47:03 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <jMmcnR_Ez91qnpaiU-KYuQ@ctc.net>
Source record: 113156

> >> I've been reading several web pages about the construction of copper
> >> pipe J-pole antennas for 2 meters, and they're all quite similar,
> >> with one exception: some say to connect the coax center conductor to
> >> the stub, and others say to connect the coax shield to the stub. Is
> >> one preferred over the other? Does it matter?
> >>
> >> Thanks and 73.
> >>
> >> -Bill
> >
> > It shouldn't make a difference since the feedpoint is balanced with
> > respect to ground.
>
> Thanks, Irv.
>
> I suspected as much, but I thought I would confirm it with the Elmers at
> large.
>
> Best regards,
>
> -Bill

Theory says it should not mater but in practice most get beter results if the longer leg is connected to the center conductor of coax. YOu really need a balun at the antenna but most do not use one. A simple loop of coax connected for a balun makes them work beter.

de KU4PT

714. Re: Feeding a copper pipe J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 17:51:48 UTC
From: dplatt@radagast.org
Message-ID: <vgm15kbvr2npe8@corp.supernews.com>
Source record: 113158

>Hi, All.
>
>I've been reading several web pages about the construction of copper pipe
>J-pole antennas for 2 meters, and they're all quite similar, with one
>exception: some say to connect the coax center conductor to the stub, and
>others say to connect the coax shield to the stub. Is one preferred over
>the other? Does it matter?

Some folks say that it doesn't matter at all.

Some folks say that you get a slightly broader SWR bandwidth if you
connect the center conductor to the radiator and the braid to the arm
of the matching stub.

I suspect that the presence, or absence of a choke balun will make
more of a difference in the antenna's pattern and performance than
which wire you hook up where.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

715. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 18:01:04 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307081001.62b91ab9@posting.google.com>
Source record: 113159

"numeric" <numeric@worldnet.att.net> wrote in message
news:<0FqOa.44522$3o3.2977236@bgtnsc05-news.ops.worldnet.att.net>...
> Looking for the best 20m vertical antenna design; without radials or buried
> ground wires. There is no restriction on the antenna height; except, that I
> would like to support the antenna at its base and mounted on the roof. I am
> more concerned about a design that optimizes the antenna efficiency and
> provides a low angle of radiation rather then for a 50 ohm impedance. The
> ground is basically sand, not much conductivity.
>
> Any Ideas?
>
> Thanks.

Naturally, it sounds like you want a 1/2 wave vertical. You can easily
build one. Will be about 32 ft tall. You can base feed it with a
"gamma loop" type feed system. I think this would be easier than
trying to split the radiator , and center feeding. The "loop" for that
antenna would be appx 22 inches across, and a single turn. You can use
a piece of coax for the capacitor. You tap the coil for the best
match. This is the same feed system used with many of the cushcraft
verticals. You can see details of these in the PDF files on their
website. They are easier to get going than it sounds, and if you mount
the antenna up well off the ground on the roof as you say, it will
kick butt over most any "storebought" 20m vertical. BTW, in your case,
a horizontal dipole should work well also if it's high enough to
provide the low angle performance you want. It's overall efficiency
should be greater than most any vertical, unless measures are taken
for the vertical. But, none the less, the 1/2 wave vertical will work
well. MK

716. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 18:10:53 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <342mgv85235bm9noetv01lta3vdaidg2ic@4ax.com>
Source record: 113160

Go here at get a manual for it.
http://www.cushcraft.com/support/pdf/951290.pdf
The adjustments for 145 mHz and 147 mHz are different, so I imagine
you will have to pick the area you want to operate in.

Dick - W6CCD

On Tue, 8 Jul 2003 13:42:44 -0400, "Ralph Mowery" <rmowery@ctc.net>
wrote:

>
>"> Does anyone have some experience with
>> the Ringo Ranger II?
>> I just got one for free and I can not
>> make it work well. The SWR is 1.15 or
>> thereabouts at 147.800. At approx 145.800
>> it would be about 3.0. I am not getting
>> any signal out to the nearby repeater, but
>> I can hear it full loud and quieting.
>>
>> bill
>
>It looks like it is resonate too high in the band. Make sure the lengths of
>the elements are set correct and maybe lengthen them slightly (maybe an inch
>or two).
>
>YOu probably got it for free because they do not work very well. They tend
>to act like a long wire and radiate most of the signal up instead of out.
>

717. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 19:05:58 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bef4mm$kj0$1@sparta.btinternet.com>
Source record: 113161

> I have the same problem with the J-pole
> VHF antennas. I just don't understand why
> they are worshipped either.

==========

Is it true there's one G5RV salesman who gives away a free prayer mat with
every two antennas sold?

718. Re: antenna design for 418Khz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 19:21:22 UTC
From: Frankee <cisquet@hotmail.com>
Message-ID: <3f0b19bb$0$125$e4fe514c@dreader4.news.xs4all.nl>
Source record: 113162

Depending on the distance from which you want to receive Navtex, a simple
antenna should be sufficient for Navtex in the region where you are sailing.
You might want to use a simple vertical wire, possibly connected to your
receiver with an MLB.
Please note however that Navtex is broadcast on 518 kHz.

--
Frank van Gerwen - ICQ # 2231692
Bakkum-Noord/Netherlands (52°35'55" N / 4°39'18" E)
http://www.xs4all.nl/~cisquet

Receiver: Lowe HF-225; ICOM ICR-1000
Antenna : Wellbrook ALA 1530; 15-meter random wire with MLB
Software: SR5, Spectogram

"Peter K" <posttonews@btinternet.com> wrote in message
news:bea4ml$n9h$1@sparta.btinternet.com...
> Can anyone point me at a site with "homebrewed" solutions for a receiving
> antenna for RTTY (navtex) on 418KHz?
> The antenna is for use on a small yacht and therefore I've dismissed loop
> designs on directional grounds. I've got acceptable results using 2.4m of
> 1 1/4" waste pipe wound with around 320m of 30swg enameled wire but I
would
> like to reduce the length.
> Am I "playing" in the right area?
> I was thinking of breaking the winding in the middle and connecting coax
to
> make a dipole feeding into the 50ohm receiver socket.
> Another idea was the mast and rigging wires all run from a fibreglass
> (insulated? for radio frequencies?) hull could they be used ?
>
> Thanks
>
> Peter K
> --
> Replace to with 2 in email address
>
>

719. FS: ProComm/Lakeview Dipole Antenna System

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 19:39:42 UTC
From: wa8mea@hotmail.com
Message-ID: <8a260fb2.0307081139.4795b1a8@posting.google.com>
Source record: 113163

Hello: I have FOR SALE: two BRAND NEW, NEVER OPENED ProComm 40 meter mobile antennas. (These are VERY similar to the Lakeview HamSticks.) Also...a BRAND NEW, NEVER USED Lakeview Dipole Mount. Together, these make a portable dipole antenna system. You can mount either vertical or horizontal. Needless to say, you can order more antennas from ProComm or Lakeview to get you on other bands. I'll even toss in some coax. I've been bitten by the 2 meter sideband bug, and am just not up to any HF operation right now. $39 takes it off my hands. I'll even pay for the shipping. 73 from Bill, WA8MEA

NEAT STUFF! - DWM Communications - http://qth.com/dwm

720. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:09:00 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0b2788_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113166
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Ham Radio has traditions of gentlemanly conduct.

CB Radio is renowned for the abusive and infantile outburst.

I leave the reader to classify the quote below.

Tech <newbury66@hotmail.com> wrote in message
news:wuCOa.5210$ju6.94381@newsfep4-glfd.server.ntli.net...
> Airy you are an arsehole, I am wasting no more time with you so FUCK OFF!

721. Re: Painting a j-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:17:23 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f0b26b9$0$48889$edfadb0f@dtext02.news.tele.dk>
Source record: 113164

Hello

> Well, there's protection from the elements, and also camouflage against
sky
> if painted light gray or blue..

No reason to protect copper, it protects itself, your J-pole will still be
there
when you are long gone. And the camouflage does not work, I can see my
brandnew log antenna from where I sit now, it is made of polished aluminium,
but it looks black against the blue sky.

Regards Max

722. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:18:26 UTC
From: nightowls627@aol.comnojunk
Message-ID: <20030708161826.29132.00000033@mb-m15.aol.com>
Source record: 113165

I am using a homebrew dipole (is there any other way?!) and it works quite well. Although I cannot transmit and propagation qualities are waning, I pick up quite a few conversations from where I am in eastern Va. (Fla. and West Virginia and some spanish chatter as well.) I used 28.475 as the freq for the math. I am using an htx-10 with the antenna in the attic and get 1.5:1 on 29.699.

73
G. Doughty
KI4BBL

723. Re: Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:21:51 UTC
From: vswrref@hotmail.com
Message-ID: <3f0b251b.1309807@national-news.stargate.net>
Source record: 113167

Hi John!

Thanks for the input and insight. I've seen EZNEC but never gave it
thought! Something to add on the to-do list. :)

I was under the impression that it would lower the impedence by
increasing the diameter and if I read it correctly, I was right.

Changing the element diameter at.....slightly above UHF, microwave
is what I'm after. I'm in the process of making a helix for a passive
reflector for an , UO-11, AO-40 test setup and was debating whether to
use #*8 ground wire or 1/4" refridgeration tubing for the conductor.
I've been leaning towards the tubing since I made one a couple years a
go for the fun of it and it's durable, rigid and keeps its shape. Now
added to itm lower RF resistance and impedence as well.

Jeff Y.

On Tue, 8 Jul 2003 10:11:17 -0400, "John Passaneau" <jxp16@psu.edu>
wrote:

>Hi Jeff,
>The best way for you to find the answer is to down load the demo version on
>EZNEC and try it your self.
>But I became interested and modeled it myself.
>
>On 7.15MHz, a dipole at 30' over average real ground, with each leg 401.75"
>long has a Z of 63.4+J0.7338 Ohms with #14 wire. Changing the wire to #10
>changed the Z to 63.14+J2.817 Ohms. This means the resonate frequency is
>lower. By shorting each side by 0.53" to 401.22" brought antenna back to
>resonance at 7.15MHz with a Z of 62.98+j0.7913 Ohms. Changing the wire
>diameter from #14 to #10 lowered the resonance frequency, which took a 0.53"
>shorting of each leg to bring it back to 7.15MHz and lowered the real part
>of the impendence by 0.32 Ohms. This is because with the larger diameter
>wire the RF resistance went down. As the loss with the larger wire went
>down, the gain of the antenna went up from 7.97dbi to 8.01dbi a change of
>0.05dbi. The bottom line at 40m changing the diameter of the wire makes a
>very small change which would not be visible with typical ham SWR meters or
>antenna analyzers.
>The effect of changing element diameter becomes more pronounced as you go
>higher infrequency. At VHF/UHF the effect is very noticeable.
>
>
>
>--
>John Passaneau

>Penn State University, State College Pa.
>W3JXP
>w3jxp@arrl.net
>
>"Jeff Y." <vswrref@hotmail.com> wrote in message
>news:3f09d544.5385368@national-news.stargate.net...
>> Hi all,
>>
>> I've been trying to find some data on what happens to the feedpoint
>> impedence of an antenna when the thickness of the wire increases. I
>> know for a fact the bandwidth will increase somewhat but what does the
>> impedence do, say going from 14 gauge to 10 gauge copper wire? Does
>> it increase or decrease?
>>
>>
>> Jeff Y.
>>
>>
>
>

724. Re: Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:23:48 UTC
From: vswrref@hotmail.com
Message-ID: <3f0b27f2.2037243@national-news.stargate.net>
Source record: 113168

Hi Reg!

Thanks for the info!

Jeff

On Tue, 8 Jul 2003 15:44:27 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>"Jeff Y." wrote >
>> I've been trying to find some data on what happens to the feedpoint
>> impedence of an antenna when the thickness of the wire increases. I
>> know for a fact the bandwidth will increase somewhat but what does the
>> impedence do, say going from 14 gauge to 10 gauge copper wire? Does
>> it increase or decrease?
>
>============================
>
>Jeff,
>
>Download program DIPOLE3.
>
>Enter any dipole and feedline length, etc.
>
>Change antenna wire diameter and see immediately what happens to dipole
>input impedance.
>
>But changes are negligible unless diameter is increased by 10 or 20 times
>depending on what you start with.
>
>Program takes into account conductor resistance in addition to changes in
>inductance and capacitance of the wire.
>---
>=======================
>Regards from Reg, G4FGQ
>For Free Radio Design Software
>go to http://www.g4fgq.com
>=======================
>
>

725. Tuner ground length question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:34:27 UTC
From: Ron <rons533@dejazzd.com>
Message-ID: <3F0B299B.543A@dejazzd.com>
Source record: 113069

I would like to get on 10-40 meters.
I plan to put up a random length wire fed to an MFJ-941D tuner. The problem I see is that it is 20 feet to my closest ground. I plan to use 1" copper strapping from the tuner to my ground which is 2 - 8 foot ground rods driven into the ground spaced 10 feet apart outside my shack.
Is this too far for my ground connection?

726. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:42:05 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B2C9D.F74599F@uci.edu>
Source record: 113071

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> > we could just as easily solve the equation P3 + P4 - 2*sqrt(P3*P4) in
> > order to show how much energy is conveyed in the direction of P3 and P4.
>
> No, for a matched system, energy is conveyed away from P3 and P4
> toward P1 and P2.

You're speaking of this "energy" as if it has a life of it's own. Very imaginative. But very wrong. Please don't lecture any further on this subject until you learn more about it and take a few tests to verify you've learned it correctly.

> > No. The equations which underly the Melles-Griot web page show us that
> > our P1 and P2 constructively interfere in order to convey the energy not
> > being reflected by P3 and P4.

> You are saying exactly the same thing that I said.

No. I'm saying the same thing that I've said about 50 times already.

> > ... canceled waves from Alpha Centauri never conveyed
> > light energy to us.

> How did Alpha Centauri know not to put any energy in those waves
> nine years ago?

It made the decision not to send energy at the same time it decided to send the two beams to us out of phase.

> > I'll agree that b1 equals zero, and that zero energy changes directions.

> If zero energy changes directions, b1 cannot be equal to zero.

Perhaps in Ceciland. :-)

727. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 20:56:08 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B2FE8.27D84C6E@uci.edu>
Source record: 113072

W5DXP wrote:
>
> Jim Kelley wrote:
> > ... energy is obviously not conserved.
>

I can do that too, Cecil. Watch:

> Sorry Jim, "Conservation of
> Energy" means energy leaves the antenna and winds up outside the orbit of > Pluto.

> But the kicker for you is, you don't know whether the circulator is
> in the circuit or not so your waves don't know whether to carry
> energy or not.

Your understanding is severly limited, Cecil. It's really to the point of not being able to carry on a cogent discussion on the subject. Your problem with the subject is this idea of yours about "carrying" or "possessing" energy. That they "have to decide" something or other. It really is ludicrous. You're going to have to come to the realization sooner or later that the problem is on your end, not everybody elses.

> What if the waves arrive without energy just as
> the circulator is switched in? Bingo, instant violation of the
> Conservation of Energy principle.

Just bloody pitiful.

728. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 21:01:39 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B3133.2DF7F0FF@uci.edu>
Source record: 113073

W5DXP wrote:
> Wave cancellation between coherent wavefronts traveling in the same
> direction turns the reflected power vector around, Jim, just as
> explained on the Melles-Griot web page.

Melles-Griot never said that. No one but you has ever said that. There
is absolutely nothing in physics literature anywhere that says that.
And you cannot prove mathematically that it's true. It's not true!!
Give it up. You're wrong. It's utter and complete bullcrap - on every
level!!

> > I can't think of any other way for it to work, so it's not surprising to
> > me at all.
>
> You say you are not surprised that the reflected power flow vector
> reverses direction at a match point.

No that isn't what I said, and if you hadn't deleted the comments I was
responding to that would be obvious.

Get help, man.

729. 300/120 Ohm twin feed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 21:06:21 UTC
From: Joel Dorfan <bdorfan@MAPSicon.co.za>
Message-ID: <3f0b3304$0$227@hades.is.co.za>
Source record: 113070

I need to make a balun that requires the use of 300 ohm type twin feed but the narrower spaced 120 ohm version.

This wire is pretty hard to find, there may be a German manufacturer.

Anyone have any idea who makes this stuff? I need quite a large quantity.

Thanks

Joel

730. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 21:13:44 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B3408.CF64381F@uci.edu>
Source record: 113075

W5DXP wrote:
>
> Jim Kelley wrote:
> > That's very similar to the experiment I used to show you how your model
> > is wrong. Only I described how all the light moves from place to
> > place. That's missing from your "experiment". The question has already
> > been answered - just like all the others. Why not explain what you
> > think happens to the energy? Maybe you have it right by now.
>
> We know there is energy and momentum in those waves, Jim. They will
> burn a hole through black paper. Your silly assertion that there
> is no energy in those waves is just bafflegab.

So, you feel that out of phase light waves of equal amplitude, "will
burn a hole through black paper." I hope I've quoted that correctly.

How do you feel about those waves and white paper? Maybe they pass
through and then turn around and come back the other way? Or maybe
in-phase waves burn holes in white paper, and out of phase waves burn
holes in black paper?
Whatever it is, I'm sure you have it all figured out and will soon be
lecturing about it at physics colloquia all over the country. ;-)

ac6xg

731. Re: 300/120 Ohm twin feed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 21:33:03 UTC
From: jgboyles@aol.com
Message-ID: <20030708173303.18447.00000020@mb-m20.aol.com>
Source record: 113074

>I need to make a balun that requires the use of 300 ohm type twin feed but
>the narrower spaced 120 ohm version.

A couple of thoughts, ordinary zip cord has an impedance around 70-100 ohms, check the impedance of 2 conductor speaker wire sold at various places it might be close to 120 ohms. You can take 300 ohm twin lead and carefully heat the plastic between the conductors, bend into a "U" configuration, and decrease the characteristic impedance.
I have never heard of 120 ohm line, but there are several things out there that can get you in the ballpark.
73 Gary N4AST

732. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 21:33:44 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B38B8.C7C576FE@uci.edu>
Source record: 113076

W5DXP wrote:
> Yes, I'm hoping someone will explain how the energy components in two
> waves that engage in total wave destruction are conserved.

In the laser bench experiment I discussed, we had two lasers and four waves (two orthogonal pairs), but with more equipment the same thing could be done with a single laser. When one beam pair destructively interfere, the other pair constructively interfere. All of the light energy is conveyed along the path where the beams constructively interfere, and none of it is conveyed along the path where the beams destructively interfere. Energy does not physically go first to the destructively interfering pair and then over to the constructively interfering pair, as you claim the Melles-Griot web page tells you. All of the energy is conveyed directly by the two constructively interfering pair of beams.

ac6xg

733. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 21:48:32 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B3C30.4993392A@uci.edu>
Source record: 113078

W5DXP wrote:
> During steady-state, the reflected wave Poynting vector exists
> on the load side of the impedance discontinuity but not on
> the source side. Where does that propagating power flow vector
> go, Jim? It's easy to see that the disappearing reflected power
> flow vector on the source side of the impedance discontinuity is
> joining the forward wave power flow vector on the load side.
> Otherwise, there wouldn't be enough reflected power to cause
> wave cancellation.

So when are you going to show this Poynting vector analysis you now seem to be claiming you have? If you don't have such an analysis, why are you lecturing about them? How can you know without such an analysis? Why should someone believe you when you haven't provided any proof?

> > But energy is
> > clearly not flowing away from the load in a matched system.

> Uhhhh, Jim, we are discussing mismatched loads.

Uhhhh, Cecil, your paper says matched system. So, that's what I'm talking about. Do you want to change the subject?

> > I've already given you a laser example that illustrates what happens
> > when one attains nearly perfect collimation and coherence.

> Nearly perfect won't hack it, Jim.

Of course it does. It demonstrates exactly what happens to cancelled waves, and what happens to waves which reinforce, as well as what happens to the tiny portions which are absorbed, or which don't precisely overlap. Everything is right there and can be measured.

734. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 21:55:04 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f0b3fcb_3@news1.prserv.net>
Source record: 113077

<snip>>
> But "MY" car body is controlled. If I keep the same mount, but change
> antennas, comparison tests between the different antennas is quite
> valid.

But what does that have to do with "shootouts", where entirely different systems are compared. I'll grant that your statement is absolutely correct. Also absolutely inapplicable to the subject I addressed.

And if I change my antenna, the only thing that will change is
> the efficiency. The pattern is not going to change much at all, even
> if I add 3 or more feet to it. Now, if you want to compare my "system"
> to another, then yes, the results will be skewed to the the difference
> of the other car body, but I think most of us accept this.

Hey, that's what I said.

> Life ain't perfect. But I still stand by the general statement that
> changing short mobile antennas on the same car body, does not change
> the pattern much at all, only the efficiency. If NVIS operation is
> important,

How far away are the stations you work on 75 meters mobile? Did you really think you were generating ground waves that went that far? Do the math.

do A/B tests from a distance also. Of course, to do this
> will require a reference antenna to compare to, to allow for
> propagation changes. On "my" car with my antenna, if I increase the
> performace at one angle, I'm increasing it at all others being the
> only real change is efficiency. So as far as comparing antennas all
> mounted on my same truck, the "shootout" results should be quite
> accurate.

But that's nort how it is done, generally. Sure, some try more than one antenna, but often entries are limited to one shot due to time constraints. I never said comparing antennas was invalid, only comparing totally different systems with undefined parameters and then blaming/praising only the antenna.

Being as most all the others antennas and bodies will act
> the same, when comparing car against car, yes, the body will make a
> difference, but myself, I can accept this. We are comparing the
> complete systems. Many try to improve the ground systems/car bodies as
> part of the overall system. I know I did. It's part of the "test".
> MK

But then, you give the credit only to the antenna, and don't mention improving the rest of the system? So if a relatively poorer antenna on a good, well prepared automobile (or a Suburban with a 20 foot flatbed trailer with several 1" braids supplementing the trailer hitch) produces higher measured field strength than a better antenna on a poorer mounting choice, like a tiny car for an extreme example, then the poorer antenna is better? That's what your "shootout" will show. Shootouts are good ego boosters, but show relatively little about individual antennas. I didn't say antenna systems, I said antennas, which is what the original inquiry was about. Now, if he had asked about improving the platform and system, then that's additional material. Start with the biggest, lowest vehicle you can find, add copper straps,.....

W5VPQ

735. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 22:29:36 UTC
From: Frank Turner-Smith G3VKI <g3vki@ntlworld.com>
Message-ID: <fBHOa.5525$ju6.100967@newsfep4-glfd.server.ntli.net>
Source record: 113079
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

> Tech <newbury66@hotmail.com> wrote in message
> news:wuCOa.5210$ju6.94381@newsfep4-glfd.server.ntli.net...
> > Airy you are an arsehole, I am wasting no more time with you so FUCK
OFF!
>
"Airy R Bean" <SPAM@trap> wrote in message
news:3f0b2788_3@mk-nntp-1.news.uk.worldonline.com...
> Ham Radio has traditions of gentlemanly conduct.
>
> CB Radio is renowned for the abusive and infantile outburst.
>
> I leave the reader to classify the quote below.
>
Normally I would agree, but in your case I will make an exception and agree
with Tech.
Anus, FOAD.
(_!_)

736. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 22:40:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b4a7d$1_2@corp.newsgroups.com>
Source record: 113080

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "How does the reflected power flow vector get turned around if energy is
> not reflected?"
>
> The re-reflection doesn`t just reflect the same percentage of energy
> reflected at the load end of the line, it reflects it all because none
> of the reflected wave makes it through the junction to its transmitter
> side.

"None of the reflected wave making it through the junction" is not a
cause. It's an observation. Why does none of the reflected wave make
it through the junction? Why is all the reflected power re-reflected
at a match point. You have observed what happens. You have not offered
a cause for what happens.
--
73, Cecil http://www.qsl.net/w5dxp

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737. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 22:46:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b4be5_2@corp.newsgroups.com>
Source record: 113081

Jim Kelley wrote:
> You're speaking of this "energy" as if it has a life of it's own.

The Conservation of Energy principle doesn't require energy to be alive,
Jim, just that it obey the laws of physics.

>>How did Alpha Centauri know not to put any energy in those waves
>>nine years ago?
>
> It made the decision not to send energy at the same time it decided to
> send the two beams to us out of phase.

It didn't make that decision, Jim. On earth, we split the light from
Alpha Centauri into two beams. So Alpha Centauri has to be able to
predict the future 9 years ahead of time. Your assertion is ridiculous.

>>If zero energy changes directions, b1 cannot be equal to zero.
>
> Perhaps in Ceciland. :-)

If the reflected power flow vector from a mismatched load doesn't change
directions, it will become incident upon the source. We know it doesn't
do that. ERGO, it changes directions (or falls into some supernatural
black hole of your invention).
--
73, Cecil http://www.qsl.net/w5dxp

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738. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 22:50:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b4cd1$1_2@corp.newsgroups.com>
Source record: 113082

Jim Kelley wrote:
> Your
> problem with the subject is this idea of yours about "carrying" or
> "possessing" energy. That they "have to decide" something or other. It
> really is ludicrous.

I agree, but that is the inescapable conclusion at which we must
arrive if what you say is true. Your waves carry energy or not
depending upon a random future event that even you cannot predict.
Your waves are necessarily smarter than you are, Jim. This is
exactly how you have described them. You waves are as smart as God.
--
73, Cecil http://www.qsl.net/w5dxp

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739. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 22:55:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b4dec_2@corp.newsgroups.com>
Source record: 113083

Jim Kelley wrote:

> W5DXP wrote:
>>Wave cancellation between coherent wavefronts traveling in the same
>>direction turns the reflected power vector around, Jim, just as
>>explained on the Melles-Griot web page.
>
>
> Melles-Griot never said that.

Yes, they did, Jim. Here it is again direct from their web page:

"If the two reflections are of equal amplitude, then this amplitude
(and hence intensity) minimum will be zero. ... the principle of conservation
of energy indicates all "lost" reflected intensity will appear as enhanced
intensity in the transmitted beam."

What is it about the rearward-traveling reflected intensity in the
canceled waves appearing as enhanced intensity in the forward-traveling
transmitted beam" that you do not understand?
--
73, Cecil http://www.qsl.net/w5dxp

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740. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 22:59:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b4eec$1_2@corp.newsgroups.com>
Source record: 113084

Jim Kelley wrote:

> W5DXP wrote:
>>We know there is energy and momentum in those waves, Jim. They will
>>burn a hole through black paper. Your silly assertion that there
>>is no energy in those waves is just bafflegab.
>
> So, you feel that out of phase light waves of equal amplitude, "will
> burn a hole through black paper." I hope I've quoted that correctly.

Before they cancel, they will each burn a hole in black paper, proving
that they contain energy. After the two waves cancel, their intrinsic
energy must go somewhere. Energy cannot be destroyed (by ordinary means).
--
73, Cecil http://www.qsl.net/w5dxp

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741. Honda Civic Hatchback mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:06:28 UTC
From: Harry George <hgg9140@seanet.com>
Message-ID: <m3isqcbouj.fsf@wilma.local>
Source record: 113096

I've been checking google, FAQ's and various Ham sites, but no luck so far. Any good ideas for mounting at least 2m and hopefully HF antennas (without drilling a hole in the roof)? I'm willing to go with temporary mounts used only while parked. Even thinking of something like a J-Pole quickly assembled and then lashed to the (stopped) car.

742. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:07:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b50f6$1_2@corp.newsgroups.com>
Source record: 113085

Jim Kelley wrote:
> In the laser bench experiment I discussed, we had two lasers and four
> waves (two orthogonal pairs), but with more equipment the same thing
> could be done with a single laser. When one beam pair destructively
> interfere, the other pair constructively interfere. All of the light
> energy is conveyed along the path where the beams constructively
> interfere, and none of it is conveyed along the path where the beams
> destructively interfere. Energy does not physically go first to the
> destructively interfering pair and then over to the constructively
> interfering pair, as you claim the Melles-Griot web page tells you. All
> of the energy is conveyed directly by the two constructively interfering
> pair of beams.

This is nothing like a transmission line because there is no wave
cancellation. Why even bring it up? You continue to confuse normal
interference patterns with wave cancellation.
--
73, Cecil http://www.qsl.net/w5dxp

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743. Re: 300/120 Ohm twin feed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:12:45 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <8UidnWT4foxv0paiXTWJig@comcast.com>
Source record: 113086

I once measured some zip cord at around 100 Ohms. If you have any way of measuring it, you could try several pieces, and see if any is close to 120. Probably 18 or 20 wire would be the best bet. I have seen 120 Ohm coax, but very expensive.

Tam/WB2TT
"Joel Dorfan" <bdorfan@MAPSicon.co.za> wrote in message news:3f0b3304$0$227@hades.is.co.za...
> I need to make a balun that requires the use of 300 ohm type twin feed but
> the narrower spaced 120 ohm version.
>
> This wire is pretty hard to find, there may be a German manufacturer.
>
> Anyone have any idea who makes this stuff? I need quite a large quantity.
>
> Thanks
>
> Joel
>
>

744. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:15:47 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <_aqdnToT2vY0zZaiU-KYvg@comcast.com>
Source record: 113087

I don't think he means 10 m. Said 27-28 MHz.

Tam/WB2TT
"G. Doughty" <nightowls627@aol.comnojunk> wrote in message
news:20030708161826.29132.00000033@mb-m15.aol.com...
> I am using a homebrew dipole (is there any other way?!) and it works quite
> well. Although I cannot transmit and propagation qualities are waning, I
pick
> up quite a few conversations from where I am in eastern Va. (Fla. and West
> Virginia and some spanish chatter as well.) I used 28.475 as the freq for
the
> math. I am using an htx-10 with the antenna in the attic and get 1.5:1 on
> 29.699.
>
> 73
> G. Doughty
> KI4BBL

745. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:19:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b53be$1_2@corp.newsgroups.com>
Source record: 113088

Jim Kelley wrote:
> So when are you going to show this Poynting vector analysis you now seem
> to be claiming you have? If you don't have such an analysis, why are
> you lecturing about them? How can you know without such an analysis?
> Why should someone believe you when you haven't provided any proof?

Good Lord, Jim, I am not about to attempt to teach Poynting vectors
to you. Having to teach you about s-parameters was bad enough. May
I suggest that you read a book?

> Uhhhh, Cecil, your paper says matched system. So, that's what I'm
> talking about.

You are confused, the system is matched but the load is mismatched.
The reflected power flow vector flows away from the load when the
load is mismatched whether the system is matched or not. The conditions
on the line feeding a mismatched load are the same whether the system
is matched or not. Your failure to comprehend that fact is one of the
many things wrong with your argument.

>>Nearly perfect won't hack it, Jim.
>
> Of course it does. It demonstrates exactly what happens to cancelled
> waves, ...

No, it doesn't, Jim, and your failure to comprehend that fact is one of
the many things wrong with your argument. "Nearly perfect" demonstrates
normal interference without wave cancellation. 100% perfect wave cancellation
is a different event in which the waves cease to exist.
--
73, Cecil http://www.qsl.net/w5dxp

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746. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:42:06 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B56CE.7ED74F69@uci.edu>
Source record: 113092

W5DXP wrote:
>
> Jim Kelley wrote:
> > Your
> > problem with the subject is this idea of yours about "carrying" or
> > "possessing" energy. That they "have to decide" something or other. It
> > really is ludicrous.
>
> I agree, but that is the inescapable conclusion at which we must
> arrive if what you say is true.

Waves that propagate to a dissipative load transfer energy to that dissipative load. Waves failing that test fail to transfer energy. Reflected wave V4 doesn't propagate any further than the first boundary. It conveys energy (to the 150 ohm transmission line) during the transient period because it has yet to be cancelled by V3. V3 conveys energy to the 50 ohm transmission line during the same period of time, but doesn't propagate after that. At that point neither wave transfers energy due to cancellation. V4 does not convey energy beyond the point at which the waves are canceled. V3 does not propagate beyond (or back from) the source. No further energy is conveyed in the form of these waves. Their oscillations continue on the line, stimulated by the respective boundary potentials. But unless the boundary conditions change, these waves do not have a mechanism by which to convey energy to a dissipative load, and their path is truncated. The effect of V3 can indeed be seen on V1 because the field oscillations are nevertheless maintained by the potential at the first boundary. But since no energy is output by these waves, no additional energy is input to them. All of the energy conveyed from source to load is accounted for by the superposition of V1 and V2. We can see exactly how that occurs by studying the irradiance equation, or more specifically the field equation for constructive interference. Those are the only waves which propagate and convey energy in the direction of the load. Reflections from boundary one are cancelled by reflections from boundary two, and in doing so the reflection of energy from both discontinuities is prevented.
73, ac6xg

747. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:46:24 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <befl4j$4minj$1@ID-134747.news.dfncis.de>
Source record: 113089

Listen for us on 28.435 every day at 1:00pm
Eastern Time. Now 1700Z in the winter months
1800Z. Seven days a week. It is a good way to
check propagation, and work Delaware if you need
it. There are six to 10 regulars that can use
ground wave between each other, so we meet. If
there is an opening please join in, with the
proper license of course.

--
73 es cul

wb3fup
a Salty Bear

"G. Doughty" <nightowls627@aol.comnojunk> wrote in
message
news:20030708161826.29132.00000033@mb-m15.aol.com...
> I am using a homebrew dipole (is there any other
way?!) and it works quite
> well. Although I cannot transmit and
propagation qualities are waning, I pick
> up quite a few conversations from where I am in
eastern Va. (Fla. and West
> Virginia and some spanish chatter as well.) I
used 28.475 as the freq for the
> math. I am using an htx-10 with the antenna in
the attic and get 1.5:1 on
> 29.699.
>
> 73
> G. Doughty
> KI4BBL

748. Re: Tuner ground length question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:50:32 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <beflca$4lhua$1@ID-134747.news.dfncis.de>
Source record: 113090

Attach at least one wire two the ground rods a
quarter wave length long at the lowest frequency
you plan to operate. You also need to check, but
your local electrical code may very well require
that the ground rods be "bonded" the household
electrical system's ground.

--
73 es cul

wb3fup
a Salty Bear

"Ron" <rons533@dejazzd.com> wrote in message
news:3F0B299B.543A@dejazzd.com...
> I would like to get on 10-40 meters.
> I plan to put up a random length wire fed to an
MFJ-941D tuner. The
> problem I see is that it is 20 feet to my
closest ground. I plan to use
> 1" copper strapping from the tuner to my ground
which is 2 - 8 foot
> ground rods driven into the ground spaced 10
feet apart outside my
> shack.
> Is this too far for my ground connection?

749. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:51:06 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B58EA.8A652AD6@uci.edu>
Source record: 113093

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>Wave cancellation between coherent wavefronts traveling in the same
> >>direction turns the reflected power vector around, Jim, just as
> >>explained on the Melles-Griot web page.
> >
> >
> > Melles-Griot never said that.
>
> Yes, they did, Jim. Here it is again direct from their web page:
>
> "If the two reflections are of equal amplitude, then this amplitude
> (and hence intensity) minimum will be zero. ... the principle of conservation
> of energy indicates all "lost" reflected intensity will appear as enhanced
> intensity in the transmitted beam."

Verifying that indeed, Melles-Griot didn't say "Wave cancellation
between coherent wavefronts traveling in the same direction turns the
reflected power vector around".

That you think it means the same thing is only your contention. It is
not, however, a matter of fact. The fact that light which is not
reflected would appear in the transmitted direction is obvious from the
conservation of energy law that I cited, given R + T = 1.

ac6xg

750. how to install NMO blind mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-08 23:51:41 UTC
From: k9sqg@aol.com
Message-ID: <20030708195141.28965.00000051@mb-m28.aol.com>
Source record: 113091

I bought an NMO style mount at Hamvention for a blind hole installation (i.e. no access from the back side to install it). I drilled a 3/4 inch hole and then discovered there isn't enough clearance to slide it in. Anybody have any hints or know of a brand of NMO mount that really works?

73s,

Evan

751. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 00:07:10 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B5CAE.777DFFE5@uci.edu>
Source record: 113095

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>We know there is energy and momentum in those waves, Jim. They will
> >>burn a hole through black paper. Your silly assertion that there
> >>is no energy in those waves is just bafflegab.
> >
> > So, you feel that out of phase light waves of equal amplitude, "will
> > burn a hole through black paper." I hope I've quoted that correctly.

> ***Before they cancel***, they will each burn a hole in black paper, proving
> that they contain energy.

Oh, before! Yes it's true that a laser can burn a hole in paper. Quite
a telling and profound observation there, Cecil.

> After the two waves cancel, their intrinsic
> energy must go somewhere.

Energy from the LASER does goes somewhere. But it does not go in the
direction of destructive interference. It of course goes in the
direction constructive interference (or non-interference). However it
takes the direct route, rather than the circuitous route you have been
lecturing to us about. It's quite apparent there is no such route. But
you might have to first understand the mechanisms that create such
circumstances in order to see it. If you provide those mechanisms in
your example, I will elaborate.

73, ac6xg

752. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 00:12:07 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B5DD7.456A77A1@uci.edu>
Source record: 113094

W5DXP wrote:
>
> Jim Kelley wrote:
> > In the laser bench experiment I discussed, we had two lasers and four
> > waves (two orthogonal pairs), but with more equipment the same thing
> > could be done with a single laser. When one beam pair destructively
> > interfere, the other pair constructively interfere. All of the light
> > energy is conveyed along the path where the beams constructively
> > interfere, and none of it is conveyed along the path where the beams
> > destructively interfere. Energy does not physically go first to the
> > destructively interfering pair and then over to the constructively
> > interfering pair, as you claim the Melles-Griot web page tells you. All
> > of the energy is conveyed directly by the two constructively interfering
> > pair of beams.

> This is nothing like a transmission line because there is no wave
> cancellation. Why even bring it up?

I brought it up because I mistakenly assumed you were intelligent enough
to see that it's indeed the same situation.

> You continue to confuse normal
> interference patterns with wave cancellation.

If that was true then your Melles-Griot crutch would go out the window.

ac6xg

753. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 00:32:57 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B62B9.3F634219@uci.edu>
Source record: 113097

W5DXP wrote:
>
> Jim Kelley wrote:
>
> >
> > W5DXP wrote:
> > We know that a wave (or some part of it) changes direction when it
> > encounters a physical discontinuity. But you continue to fail to
> > explain how a wave changes direction when it encounters an equal
> > magnitude opposite phase wave #2 traveling in the same direction.
>
> Yes, that's the missing mechanism that I hope someone will supply.

Until that shows up, it's pretty much a dead on arrival. Is it that you wonder why the transmitted intensity goes up by a factor of four when two equal amplitude waves constructively interfere? I really have lost sight of why you think there's a mystery to be solved here. All you have to do is throw out a couple misconceptions, and you're there. Everybody else was apparently there a long time ago.

> We know that energy cannot be
> destroyed. We know that every EM wave contains energy. Therefore,
> we know that the energy in the canceled waves must go somewhere.

There is no energy being conveyed by the cancelled waves, so no energy is "destroyed" when the waves are cancelled. Unlike you, energy takes a 'constructive' route.

> > There is no path for energy after waves cancel.

> Waves cannot exist without energy. These waves cease to exist at the
> cancellation point.

Well, it seems they don't propagate beyond the cancellation point. They convey energy no further than the cancellation point. But I don't see need of worrying that energy might be destroyed at the cancellation point. I think we pretty much agree that doesn't happen.

> Where does the energy in the destroyed waves go?

It doesn't go. It went elsewhere instead.

> You have asserted that waves that are about to be canceled exist without
> energy, but that is obviously a violation of the laws of physics.

I've asked that you use quotes when you refer to things I've said. You're fabricating remarks, and arguing against them. I think there's a

name for that kind of practice. I have some names in mind, but it would
be less than gallant for me to print them.

> >>If "energy exists only where the waves exist", how can waves exist without
> >>energy, as you have asserted numerous times?
> >
> > There's that lie again. Evidently this is the only way for you to make
> > a point in a discussion.

> You just made exactly the same assertion above.

You need to retune your discriminator. Or add some gain ahead of it,
because it's not at all sensitive to detail.

73, ac6xg

754. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 00:41:33 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B64BD.F2546033@uci.edu>
Source record: 113098

W5DXP wrote:
>
> Jim Kelley wrote:
> > So when are you going to show this Poynting vector analysis you now seem
> > to be claiming you have? If you don't have such an analysis, why are
> > you lecturing about them? How can you know without such an analysis?
> > Why should someone believe you when you haven't provided any proof?
>
> Good Lord, Jim, I am not about to attempt to teach Poynting vectors
> to you.

If for some reason I leave my senses and want you to teach me something,
rest assured I'll ask. Until then, you may assume I'm not asking.

Either put up, or shut up. I don't care which.

jk

755. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 00:52:01 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B6731.66C22495@uci.edu>
Source record: 113099

W5DXP wrote:
>
> Jim Kelley wrote:
> > You're speaking of this "energy" as if it has a life of it's own.
>
> The Conservation of Energy principle doesn't require energy to be alive,
> Jim, just that it obey the laws of physics.

Agreed. My suggestion is that you speak in physics terminology.

> >>How did Alpha Centauri know not to put any energy in those waves
> >>nine years ago?
> >
> > It made the decision not to send energy at the same time it decided to
> > send the two beams to us out of phase.

> It didn't make that decision, Jim. On earth, we split the light from
> Alpha Centauri into two beams. So Alpha Centauri has to be able to
> predict the future 9 years ahead of time. Your assertion is ridiculous.

So if you could explain to us the process by which the cancellation occurs, you might then begin to understand why energy can't be conveyed by the cancelled light waves. (Hint: it has to do with conservation of energy.)

ac6xg

756. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 01:18:14 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0B6D56.B620E788@uci.edu>
Source record: 113101

W5DXP wrote:
>
> Jim Kelley wrote:
> > Nor do the conditions you assumed in your paper, like lossless
> > transmission lines.
>
> Actually, I don't assume lossless transmission lines. I only
> assume a lossless impedance discontinuity point.

Seemed a fair assumption, since you don't account for losses anywhere in the paper. Your power numbers wouldn't add up so nicely if there were losses.
You've got a forward power of 133.33 watts on the 150 transmission line, and 33.33 coming back. I think it's fair to say you're assuming lossless transmission lines.

> >>When a wave is destroyed, it MUST, of necessity,
> >>give up its energy.
> >
> > You're thinking of anihilation.

> Nope, I was not thinking of annihilation. You're absolutely
> wrong, once again. Your ESP powers (and spelling) leave a
> lot to be desired.

Fact is I'm not much good at guessing. Annihilation is the only example I can think of where something is actually destroyed and gives up all it's energy. Perhaps you could let me know what other real examples I'm overlooking. Thanks for the spell check by the way.

ac6xg

757. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 01:29:14 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F0B700D.1000600@get.lost>
Source record: 113100
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Brian Reay wrote:

> Now you mention it Gareth, [snip]

YAWN! Never read more uninteresting "discussion" in my life. Do us all a
favor and drop rec.radio.amateur.dx from this bullshit.

Thanks, gov'ner.

73 ... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

758. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:02:24 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <QIKOa.9961$wk6.2468@rwcrnsc52.ops.asp.att.net>
Source record: 113102

"William H. O'Hara, III" <whoohara@yahoo.com> wrote in message
news:Xns93B27A63AAB83AX2A3DA5M1512AODKAMO@65.100.3.61...
> Does anyone have some experience with
> the Ringo Ranger II?
> I just got one for free and I can not
> make it work well. The SWR is 1.15 or
> thereabouts at 147.800. At approx 145.800
> it would be about 3.0. I am not getting
> any signal out to the nearby repeater, but
> I can hear it full loud and quieting.
>
> bill

Bill -

Follow the assembly instructions and you should be able to adjust the Ringo
for the
dip at your desired frequency. Check that you have GOOD coax (the problem
that you describe could
be a coax problem and not the Ringo.
Many blame the antenna when it real problem is marginal coax --- passable
at HF frequencies --
but totally unacceptable at VHF.

The Ringo ranger II is based on the original W1BX Ringo design. The Ringo
Ranger II is the current and latest design featuring three 5/8 wave
radiating elements and an adjustable 1/8 wave phasing stub. This results in
a very low angle of radiation over your desired coverage area.

You can read the reviews for the ARX-2B
http://www.eham.net/reviews/detail/2068?ehamsid=83dcc4a851259236dab75c921543a95d

g.beat
w9gb
--
Do not use Reply.
Reply only through ARRL forwarding service to W9GB

759. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:03:24 UTC
From: olllllllo@sbcglobal.net
Message-ID: <MJKOa.2486$a97.629978206@newssvr12.news.prodigy.com>
Source record: 113103
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Frank Turner-Smith G3VKI" <g3vki@ntlworld.com> wrote in message
news:fBHOa.5525$ju6.100967@newsfep4-glfd.server.ntli.net...
> > Tech <newbury66@hotmail.com> wrote in message
> Normally I would agree, but in your case I will make an exception and
agree
> with Tech.
> Anus, FOAD.
> (_!_)

I, too, must forgo my upbringing, and agree
with the base comments. Exception hereby
duly made. I agree with Tech & Frank as well.

760. Re: how to install NMO blind mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:07:31 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f0b7af8_1@news1.prserv.net>
Source record: 113105

Evan:

I never had any trouble with either the Motorola (originator of the style) nor Larsen (who named it "NMO"), unless there is less than 3/8" behind the surface. I prefer the 3/8" hole Danbury Knudsen mounts myself anyway, which snap in and will mount where there is 1/4" or less space. Just how much room is there? What's in the way, another sheet of metal?

--
Crazy George
W5VPQ
e NO and SPAM from return address
"K9SQG" <k9sqg@aol.com> wrote in message
news:20030708195141.28965.00000051@mb-m28.aol.com...
> I bought an NMO style mount at Hamvention for a blind hole installation
(i.e.
> no access from the back side to install it). I drilled a 3/4 inch hole
and
> then discovered there isn't enough clearance to slide it in. Anybody have
any
> hints or know of a brand of NMO mount that really works?
>
> 73s,
>
> Evan

761. Re: Honda Civic Hatchback mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:10:07 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f0b7af9_1@news1.prserv.net>
Source record: 113106

Look around for some of the old trunk lip CB antenna mounts. There were a variety of designs, and I believe I have seen a 2 meter quarter wave antenna mounted at the top of a Honda hatch with one. Will also hold a HF antenna if you stay still. Absolutely still, and protected from the wind.

--
Crazy George
Remove NO and SPAM from return address
"Harry George" <hgg9140@seanet.com> wrote in message
news:m3isqcbouj.fsf@wilma.local...
>
> I've been checking google, FAQ's and various Ham sites, but no luck so
> far. Any good ideas for mounting at least 2m and hopefully HF
> antennas (without drilling a hole in the roof)? I'm willing to go
> with temporary mounts used only while parked. Even thinking of
> something like a J-Pole quickly assembled and then lashed to the
> (stopped) car.

762. Re: Telrex antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:12:31 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vgmudb252g4m99@corp.supernews.com>
Source record: 113104

Dear Joe S. (unknown call):
Here is the "word" on your antenna.
In the 50s and early 60s the antenna was known as a TC-88B. Latter in the 60s it was renamed as the TB4EC.
It is said to weight 30 pounds and have an 8 foot boom. It fits your description exactly with the 20 meter reflector having a "hairpin resonator." The black box is to connect to the front, driven element as a balun.
In other words, the black box goes across the driven element, but the "loop" goes across the 20 m reflector.

All of this came to light when I was looking for information about my old TB6EM. I may, at last, have found a good home for it.

73, Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Joe S." <maxleonard@hotmail.com> wrote in message news:b8q1s902g5t@enews1.newsguy.com...
> Can someone help me identify a Telrex antenna I have?
>
> I have had it for years but it's been bundled up lying in the crawl space
> under the house for I don't know how long.
>
> Tri-bander with four elements:
> -- driven element with traps for 15 and 10, and.
> -- three reflectors, one for each band.
>
> The matching element is a black plastic box with a long wire loop mounted at
> the center of the driven element.
>
> I cannot locate the paperwork on this antenna -- can anyone help me identify
> the model and possibly locate the manual on it?
>
> Thanks.
>
> --
>
> ----

> Regards,
> Joe S.
> ----
>
>
> ----
>
>
>

763. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:33:30 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307081833.1952a4ba@posting.google.com>
Source record: 113107

"Ralph Mowery" <rmowery@ctc.net> wrote in message news:<spqcnf7zgdxpn5aiXTWJhw@ctc.net>...
> "> Does anyone have some experience with
> > the Ringo Ranger II?
> > I just got one for free and I can not
> > make it work well. The SWR is 1.15 or
> > thereabouts at 147.800. At approx 145.800
> > it would be about 3.0. I am not getting
> > any signal out to the nearby repeater, but
> > I can hear it full loud and quieting.
> >
> > bill
>
> It looks like it is resonate too high in the band. Make sure the lengths of
> the elements are set correct and maybe lengthen them slightly (maybe an inch
> or two).
>
> YOu probably got it for free because they do not work very well. They tend
> to act like a long wire and radiate most of the signal up instead of out.

They aren't too bad. The "II" has a decoupling section, so feedline
radiation is fairly low. The original ringo ranger had no decoupling
though, and it was more prone to problems. He can get the manual in
PDF format at their website. It will tell the exact dimensions for a
given center freq you choose. MK

764. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:40:40 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307081840.315bb0bf@posting.google.com>
Source record: 113108

nm5k@wt.net (Mark Keith) wrote in message The "loop" for that
> antenna would be appx 22 inches across, and a single turn.

Actually, the loop could probably be a bit smaller than that and still
work ok.
If you had a 22 inch loop, it would be tapped at the midpoint , or
even less maybe. A 15 inch loop could probably work. It would just be
tapped to use more of the coil. I was thinking a 10m loop was 11
inches. Actually, I think it's closer to 9-10 inches dia, so 18 inches
would be about the "standard" size for a 20m antenna. MK

765. Re: Is Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:43:02 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b835d_1@corp.newsgroups.com>
Source record: 113109

Jim Kelley wrote:
> Waves that propagate to a dissipative load transfer energy to that
> dissipative load.

How does the wave about to be dissipated differ from the wave that is
about to be canceled? Hint: they are identical.

How does the wave know ahead of time whether it is going to encounter a
dissipative load or not? It obviously cannot know ahead of time so all
waves with the same V and I in phase carry the same amount of energy.

A wave about to encounter a dissipative load or the same wave about to be
canceled carry the same amount of energy. The wave gives up that energy in
both cases. In the first case it gives up its energy as heat. In the second
case, it gives its energy to the constructive interference.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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766. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:46:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b8449_1@corp.newsgroups.com>
Source record: 113110

Jim Kelley wrote:
> The fact that light which is not
> reflected would appear in the transmitted direction is obvious ...

Ahhh, but the Melles-Griot web page specifically states that the enhanced intensity comes from the *REFLECTED* canceled wavefronts which were obviously rearward-traveling waves before the cancellation. Sorry, you lose again.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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767. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 02:56:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b8698_1@corp.newsgroups.com>
Source record: 113111

Jim Kelley wrote:
> Energy from the LASER does goes somewhere. But it does not go in the
> direction of destructive interference. It of course goes in the
> direction constructive interference (or non-interference). However it
> takes the direct route, rather than the circuitous route you have been
> lecturing to us about. It's quite apparent there is no such route.

It is quite apparent from reading the Melles-Griot web page that there
is such a route. Please reference the drawing under "thin-film interference"
on the Melles-Griot web page.

```
| 1/4WL |
Laser-----air-----|---thin-film---|---glass---...
| |
F B
```

During steady-state, there is a reflection from plane B that travels
rearward toward plane F. The reflection from plane B has an associated
power flow vector. What happens to that rearward-traveling power flow
vector to reverse its direction at plane F? That power flow vector is
represented by a green line on the drawing under "thin-film interference"
on the Melles-Griot web page.

http://www.mellesgriot.com/products/optics/oc_2_1.htm
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

768. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:00:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b876e_1@corp.newsgroups.com>
Source record: 113112

Jim Kelley wrote:

> W5DXP wrote:
>>This is nothing like a transmission line because there is no wave
>>cancellation. Why even bring it up?
>
> I brought it up because I mistakenly assumed you were intelligent enough
> to see that it's indeed the same situation.

Nope, I certainly don't lack the intelligence to recognize the difference.

>>You continue to confuse normal
>>interference patterns with wave cancellation.
>
> If that was true then your Melles-Griot crutch would go out the window.

You still just don't get it. When a wave ceases to exist, that event
is nothing like normal interference. When a wave ceases to exist, it
must give up its energy at the point where it ceases to exist.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

769. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:14:31 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b8abf_1@corp.newsgroups.com>
Source record: 113114

Jim Kelley wrote:

>
> W5DXP wrote:
>>Yes, that's the missing mechanism that I hope someone will supply.
>
> Until that shows up, it's pretty much a dead on arrival.

It is obvious what happens, Jim. It is just not obvious why it happens.

> Is it that you
> wonder why the transmitted intensity goes up by a factor of four when
> two equal amplitude waves constructively interfere?

Hecht, in _Optics_, says it is because of destructive interference. I
agree with Hecht. The destructive interference energy comes from the
destructive cancellation of two rearward-traveling reflected waves.
Where do you think the constructive interference energy comes from?

> There is no energy being conveyed by the cancelled waves, so no energy
> is "destroyed" when the waves are cancelled.

Of course, that is nonsense. Waves with the same V and I in phase are
just alike, energy and all.

> Well, it seems they don't propagate beyond the cancellation point. They
> convey energy no further than the cancellation point. But I don't see
> need of worrying that energy might be destroyed at the cancellation
> point. I think we pretty much agree that doesn't happen.

The point is that those waves convey energy to the cancellation point and then
they are destroyed. Energy cannot be destroyed. It doesn't flow toward the
source. ERGO, it must flow toward the load and it does as constructive
interference.

>>Where does the energy in the destroyed waves go?
>
> It doesn't go. It went elsewhere instead.

Bafflegab. If "it went elsewhere instead" then it did go somewhere. It
migrated from the destructive interference event to the constructive
interference event exactly as Hecht says.

> I've asked that you use quotes when you refer to things I've said.

Don't need to. the '>' marks show exactly what you said for all to see.
You uttered the same nonsense above. Tell me, Jim, are the following
waves conveying energy or not? If you can't tell, how the heck is the

wave smart enough to know whether to convey energy or not?

---------150 ohm feedline------------50 ohm load
forward power = 133.33W
reflected power = 33.33W
--
73, Cecil http://www.qsl.net/w5dxp

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770. How to feed a 1/2 dipole and fit a proper balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:15:39 UTC
From: henrikolofsson@yahoo.se
Message-ID: <7030d3aa.0307081915.2ae7ed3f@posting.google.com>
Source record: 113113

What kind of 50 ohm coax should I use for 25 meter distance? What kind of balun is recommended? Using RG58 it is easy to fit two coax in one connector but how do I make the balun with thicker coax?

BR,
Henrik

771. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:16:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b8b32$1_1@corp.newsgroups.com>
Source record: 113115

Jim Kelley wrote:
> Either put up, or shut up. I don't care which.

Well, I've already provided the quote from: "Fields and Waves in
Communication Electronics", by Ramo, Whinnery, and Van Duzer.
What more do you want?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

772. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:17:38 UTC
From: richardharrison@webtv.net
Message-ID: <2583-3F0B8952-757@storefull-2316.public.lawson.webtv.net>
Source record: 113022

Cecil wrote:
"You have not offered a cause for what happens."

It`s in the posting.

Best regards, Richard Harrison, KB5WZI

773. Re: 300/120 Ohm twin feed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:20:38 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <oSLOa.15727$1a6.9861@lakeread01>
Source record: 113116

Two 300 ohm pieces in parallel??

--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64
"Joel Dorfan" <bdorfan@MAPSicon.co.za> wrote in message
news:3f0b3304$0$227@hades.is.co.za...
> I need to make a balun that requires the use of 300 ohm type twin feed but
> the narrower spaced 120 ohm version.
>
> This wire is pretty hard to find, there may be a German manufacturer.
>
> Anyone have any idea who makes this stuff? I need quite a large quantity.
>
> Thanks
>
> Joel
>
>

774. Re: Tuner ground length question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:22:41 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0B8A81.4AB0A273@cwis.net>
Source record: 113117

Ron,
No, it isn't too far. In fact, you might want to
extend a ground wire from the two ground rods for a
few more feet. Or several of them...
'Doc

775. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:25:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b8d46$1_1@corp.newsgroups.com>
Source record: 113118

Jim Kelley wrote:
> So if you could explain to us the process by which the cancellation
> occurs, you might then begin to understand why energy can't be conveyed
> by the cancelled light waves.

Bafflegab again. Waves cannot exist without energy. If waves possess energy, then that energy must be conserved after destruction of the rearward-traveling waves. Waves don't go anywhere after they are destroyed. Energy cannot be destroyed. Where does the energy in the destroyed waves go? It cannot stand still and it doesn't flow toward the source. We already know it flows in the forward direction as constructive interference. We know the destroyed waves were rearward-traveling waves. The rational conclusions are obvious.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

776. Re: Painting a j-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:29:33 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0B8C1D.C38EA799@cwis.net>
Source record: 113019

ShadowDancer wrote:
>
> Could I get some input on whether it would be prudent to paint my 2-meter
> copper tube j-pole or not? I've been told that copper oxide actually
> increases the gain of the antenna, but I don't know if that gain is enough
> to outweigh the benefits of painting it...

If you want to paint your 'J'-pole it shouldn't be a problem
at all. The copper oxide does not contribute any 'gain' to any
antenna. But then again, it doesn't hurt anything either.
'Doc

777. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:30:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0b8e88_1@corp.newsgroups.com>
Source record: 113020

Jim Kelley wrote:
> You've got a forward power of 133.33 watts on the 150 transmission line,
> and 33.33 coming back. I think it's fair to say you're assuming
> lossless transmission lines.

What if I told you the load is accepting 90 watts? You call that
a lossless line?

> Perhaps you could let me know what other real examples I'm
> overlooking.

I already have, Jim, here's another one. Superpose the following:

50V at zero degrees and 1A at 180 degrees = 50W
50V at 180 degrees and 1A at zero degrees = 50W

Do you need help with the math?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

778. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:35:22 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0B8D7A.E156CF88@cwis.net>
Source record: 113021

Reg,
Actually, it's a 'prayer hanky'. It goes on top
of the radio and you pray for things to work...
'Doc

779. Re: How to feed a 1/2 dipole and fit a proper balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 03:54:12 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <hb4ngvchh0fnacbt9lt5f1ks85l1oefist@4ax.com>
Source record: 113023

My personal choice would be RG-213. If you feel the need for a balun,
I would use the type that becomes the center conductor for the dipole.
Then you just screw the coax on the bottom. I rarely use a balun.

Dick - W6CCD

On 8 Jul 2003 20:15:39 -0700, henrikolofsson@yahoo.se (Henrik) wrote:

>What kind of 50 ohm coax should I use for 25 meter distance? What kind
>of balun is recommended? Using RG58 it is easy to fit two coax in one
>connector but how do I make the balun with thicker coax?
>
>BR,
>Henrik

780. Re: How to feed a 1/2 dipole and fit a proper balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 04:13:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgn5j7shnmlqa9@corp.supernews.com>
Source record: 113024

How much power will you be running? What frequencies?

Roy Lewallen, W7EL

Henrik wrote:
> What kind of 50 ohm coax should I use for 25 meter distance? What kind
> of balun is recommended? Using RG58 it is easy to fit two coax in one
> connector but how do I make the balun with thicker coax?
>
> BR,
> Henrik

781. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 05:01:10 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <beg7il$56b$1@hercules.btinternet.com>
Source record: 113025

"'Doc" wrote
> Actually, it's a 'prayer hanky'. It goes on top
> of the radio and you pray for things to work...
==========

Doc, A circular version with an embroidered hole in the middle will drape neatly over any handy-talky.

But do you think gain could be increased by hanky-loading the whip at 2/3 height ?

"There's many a true word spoken in jest." ;o)

Reg.

782. Re: Telrex antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 05:05:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <beg7qp$cp2$1@titan.btinternet.com>
Source record: 113026

Does anybody know how many 'get-rich-quick' antenna manufacturers there are
in the USA ?

783. Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 05:45:57 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F0BAC2C.2040401@get.lost>
Source record: 113027
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Even if you are not an ARRL member and/or disagree with its policy, you should seriously consider contributing to this fund. If the BPL technology ever gets implemented, this may very well be the end of ham radio as we know it. Make no mistake about it - we're talking 60 dB noise increase across the entire HF, not dropping the Morse requirement! And for what? So that people in the rural areas of USA can have a faster download from porn sites?

https://www.arrl.org/forms/development/donations/bpl/

A measly $25 - $100 can help prevent your $5000 equipment from becoming an expensive coffee cup warmer.

73 .... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

784. Re: 300/120 Ohm twin feed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:03:53 UTC
From: Joel Dorfan <bdorfan@MAPSicon.co.za>
Message-ID: <3f0bb1b5$0$227@hades.is.co.za>
Source record: 113029

Thanks for thje replies.

I know that there is some of this stuff commercially available. I'll keep on looking!!

"Craig Buck" <k4ia@cox.net> wrote in message
news:oSLOa.15727$1a6.9861@lakeread01...
> Two 300 ohm pieces in parallel??
>
> --
> Radio K4ia
> Craig "Buck"
> Fredericksburg, VA USA
> FISTS 6702 cc 788 Diamond 64
> "Joel Dorfan" <bdorfan@MAPSicon.co.za> wrote in message
> news:3f0b3304$0$227@hades.is.co.za...
> > I need to make a balun that requires the use of 300 ohm type twin feed
but
> > the narrower spaced 120 ohm version.
> >
> > This wire is pretty hard to find, there may be a German manufacturer.
> >
> > Anyone have any idea who makes this stuff? I need quite a large
quantity.
> >
> > Thanks
> >
> > Joel
> >
> >
>
>

785. Re: 300/120 Ohm twin feed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:07:25 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <begbethun1@sparta.btinternet.com>
Source record: 113028

Joel,

Obtain some ordinary, twin, clear-plastic insulated, aprox 0.8 to 1mm diameter, flexible, stranded, speaker cable, sometimes known as zip-cord. Like Radio speaker-cable Shack stuff.

It has an impedance in the range 120-140 ohms. I once measured some. It tends to be independent of wire diameter. For balun applications it is non-critical anyway.

If its an HF choke-balun just wind 8 or 10 uniformly-spaced turns on a 38mm or 50mm ferrite ring, HF-quality, permeabilty between 200 and 400. It will handle a few 100 watts. The whole thing is non-critical.

Guidelines - Inductive reactance of the winding at lowest operating frequency should not be less than 4 or 5 times the lower terminating impedance. The length of the cable should not exceed 1/12th or 1/9th of a wavelength at the highest frequency of use, taking into account the propagation velocity of the cable itself. VF of the cable is roughly 0.75 to 0.85

Just wind some twin cable on a core. If it works don't bother fixing it.

For a fixed 4:1 impedance transformer ratio, say 50 to 200 ohms, just connect the two wires in the cable in series with each other.

You may find program BALUN4 interesting.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

786. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:21:09 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <qvOOa.5677$ju6.102091@newsfep4-glfd.server.ntli.net>
Source record: 113030
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Tech" <newbury66@hotmail.com> wrote in message
news:VuuOa.4940$ju6.90142@newsfep4-glfd.server.ntli.net...
> "Walt Davidson" <walt99@tiscali.co.uk> wrote in message
> news:3mqkgvs1vbpu746aa4hl8ikit0d8p07859@4ax.com...
> > On Mon, 7 Jul 2003 21:43:34 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
> > wrote:
> >
> > >OK. ...and Brian Reay is ?
> >
> > M3OSN ... the principal promoter of the UK's so-called "Foundation
> > Licence" (aka M3/CB), and the object of much derision on the
> > uk.radio.amateur newsgroup.
> > 73 de G3NYY
> > Walt Davidson Email: g3nyy @freeuk.com
>
> A man who seeks to encourage others into the hobby,
<snip>
>
Others like yourself, which unfortunately say it all.
10:4 good buddy ?

Steve Terry

787. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:22:23 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <FwOOa.5678$ju6.102178@newsfep4-glfd.server.ntli.net>
Source record: 113031
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Tech" <newbury66@hotmail.com> wrote in message
news:wuCOa.5210$ju6.94381@newsfep4-glfd.server.ntli.net...
> "George" <g@george.com> wrote in message
> news:SivOa.6433$nP.2743@newsfep4-winn.server.ntli.net...
> > "Airy R Bean" <SPAM@trap> wrote in message
> > news:3f0a7c6b$1_3@mk-nntp-1.news.uk.worldonline.com...
<snip>
> Airy you are an arsehole, I am wasting no more time with you so FUCK OFF!
>
Big 10:4 good buddy

Steve Terry

788. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:28:05 UTC
From: "Dave, AA6YQ" <aa6yq@ambersoft.com>
Message-ID: <VBOOa.15475$ye4.14660@sccrnsc01>
Source record: 113032
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

I'll ignore the "falsely claimed to have worked" allegation, but you can check my DXCC Challenge stats with ARRL if you like: http://www.arrl.org/awards/dxcc/listings/challenge.html#challenge ;they're backed up by verified QSLs.You can stop by and inspect the cards yourself, if you don't trust the DXCC desk.

Unless you built your station from a few piles of unrefined sand, coal, and iron ore, you've simply chosen a different level of technology and automation. That's your choice, and that's fine, but you're in no position to play "holier than thou". Given the ground you've staked out, I am wondering what you're doing using a computer to communicate with other amateurs. Shouldn't we be having this conversation with straight keys and spark equipment on the low end of 20m?

For the record, DXLab applications automate the mundane aspects of DXing, which means you can spend more time operating and less time paging through paper logs or filling out QSL cards or sorting through DXing tip sheets looking for operating patterns, or blindly seeking secondary propagation paths. One dimension of amateur radio has always been "do the best you can with the technology available". The technology that DXLab exploits is called modern software engineering - the ability to rapidly produce high-quality applications responsive to the needs of their user community. Unless you wrote all of the software on that PC of yours, you're probably using some of this technology too!

73,

Dave, AA6YQ

"Airy R Bean" <SPAM@trap> wrote in message
news:3f093263$2_3@mk-nntp-1.news.uk.worldonline.com...
> So, you come home in the evening and see what
> DX you can falsely claim to have worked?
>
> What more evidence do we need that DXing has become a
> CBer's activity?
>
> Back to the days when QSL cards and awards were a
> measure of the individual's technical prowess in specifying,
> designing, manufacturing and setting up his own station.
>
> Dave, AA6YQ <dhb@mediaone.net> wrote in message
> news:P33Oa.30953$C83.2659245@newsread1.prod.itd.earthlink.net...
> > http://www.qsl.net/dxlab/ - 8 free applications that automate DXing
> > activities from spot collection/analysis to transceiver control to

logging
> > to propagation prediction to QSL route discovery. These applications run
> > independently, but sense each other's presence and interoperate
> > automatially.
>
>
>

789. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:29:34 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <jDOOa.5681$ju6.102100@newsfep4-glfd.server.ntli.net>
Source record: 113033
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Walt Davidson" <walt99@tiscali.co.uk> wrote in message
news:h8vkgv41odjb0faibd81qukrcn9sja5jrg@4ax.com...
> On Tue, 8 Jul 2003 08:36:14 +0100, "Tech" <newbury66@hotmail.com>
> wrote:
>
> >He is the kind of "face" that Amateur Radio should have, a welcoming
> >friendly one. There is very little of that to be seen in this newsgroup.
>
> I am as ready to welcome well-intentioned newcomers into amateur radio
> as the next man.
> However, I will not give support to those who are intent upon
> converting amateur radio into a form of multi-band CB by progressively
> and systematically diluting the entry qualifications until they are
> effectively non-existent.
> The UK's Foundation Licence is a farce; it is simply a CB licence by
> another name. Proponents of the Foundation Licence are malicious
> traitors to the cause of amateur radio; they are motivated by one or
> more of the following: (1) selfish interests, (2) the pursuit of
> monetary profit, (3) the desire to increase membership of a
> magazine-publishing "club" - by fair means or foul, (4) a misguided
> belief in so-called egalitarianism, whereby everyone in society is
> entitled to "a slice of the cake" - regardless of ability or
> qualifications, (5) a hidden agenda on the part of the authorities to
> move the "pirate CB" fraternity off the illegal frequencies where they
> cannot be regulated, on to the amateur bands where - in the
> regulators' view - they can do less damage.
> 73 de G3NYY
> Walt Davidson
>
Couldn't of put it better myself.

Giving Brian the benefit of the doubt would at best put him into category 4,
the RAs motive is clearly category 5, The RSGB category 2 and 3,
and each group, possibly inadvertently, supports the other

and all the result of Not having a Docket system.

Steve Terry

790. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:36:08 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <tJOOa.5684$ju6.101554@newsfep4-glfd.server.ntli.net>
Source record: 113034
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"George" <g@george.com> wrote in message
news:TSvOa.6450$nP.2195@newsfep4-winn.server.ntli.net...
> "Walt Davidson" <walt99@tiscali.co.uk> wrote in message
> news:j80lgv8a83919cms35dsou7kfs7tmikrhs@4ax.com...
> > On Tue, 8 Jul 2003 09:35:29 +0100, "George" <g@george.com> wrote:
> >
> > >"Airy Bean" is <snipped> .... is one of life's failures who is jealous
> of
> > > >other's success but shows promise as dog turd.
> > > >
> > > >G.
> > >
> > > As you are so keen to publicise the identity and address of other
> > > contributors to the newsgroup, no doubt you will also publish your own
> > > details?
> > >
> > > I am waiting expectantly.
> > > Or are you the usual type of anonymous coward who sends poison-pen
> > > letters and makes malicious telephone calls?
> > > 73 de G3NYY
> > > Walt Davidson Email: g3nyy @freeuk.com
> >
> > And you are?
> > G.
> >
in http://www.qrz.com/callsign
As I am, and anyone who stand's by their convictions (acquitted) ;-)

You're obviously one of those sad deluded persons who
mistakenly believes their anonymous rants are worth a gob in the wind

Steve Terry

791. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:39:41 UTC
From: Tech <newbury66@hotmail.com>
Message-ID: <LLOOa.5685$ju6.102279@newsfep4-glfd.server.ntli.net>
Source record: 113035
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Steve Terry" <g4wwk-remove-to-reply-@tesco.net> wrote in message
news:qvOOa.5677$ju6.102091@newsfep4-glfd.server.ntli.net...
> "Tech" <newbury66@hotmail.com> wrote in message
> news:VuuOa.4940$ju6.90142@newsfep4-glfd.server.ntli.net...
> > "Walt Davidson" <walt99@tiscali.co.uk> wrote in message
> > news:3mqkgvs1vbpu746aa4hl8ikit0d8p07859@4ax.com...
> > > On Mon, 7 Jul 2003 21:43:34 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
> > > wrote:
> > >
> > > >OK. ...and Brian Reay is ?
> > >
> > > M3OSN ... the principal promoter of the UK's so-called "Foundation
> > > Licence" (aka M3/CB), and the object of much derision on the
> > > uk.radio.amateur newsgroup.
> > > 73 de G3NYY
> > > Walt Davidson Email: g3nyy @freeuk.com
> >
> > A man who seeks to encourage others into the hobby,
> <snip>
> >
> Others like yourself, which unfortunately say it all.
> 10:4 good buddy ?
>
> Steve Terry
>
>
Mr Terry, _ . _ .. .. _ _ _._ _ . _ ... ... ._ ._ . _

792. Will this work?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:50:25 UTC
From: Batman <kg0wx@yahoo.com>
Message-ID: <RWOOa.528829$3n5.477400@news2.central.cox.net>
Source record: 113036

I'm moving to a new QTH in 4 weeks. I'd like to put up the
following antenna:

130' inverted V fed with Radio Shack 300 ohm twinlead
fed by a LDG 4:1 balun fed by a LDG Z-11 autotuner.

The rig is a Yaesu FT-817 (5 watts max output)

I was planning on getting a Van Gordon "All bander"
antenna, a 130 foot dipole fed with 450 ohm ladder
line to the same balun and tuner.

I now want to build my own using Archer rotor cable
for the elements (18 ga.) and 300 ohm twinlead for
the transmission line. I do not know how long a line
I will need.

What I'm concerned about is the VSWR and RF handeling
capacity of the RS heavy duty 300 ohm line.......

Opinions?

72's de Ken KG0WX

793. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 06:55:23 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <w%OOa.5693$ju6.102455@newsfep4-glfd.server.ntli.net>
Source record: 113037
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Tech" <newbury66@hotmail.com> wrote in message
news:LLOOa.5685$ju6.102279@newsfep4-glfd.server.ntli.net...
> "Steve Terry" <g4wwk-remove-to-reply-@tesco.net> wrote in message
> news:qvOOa.5677$ju6.102091@newsfep4-glfd.server.ntli.net...
> > "Tech" <newbury66@hotmail.com> wrote in message
> > news:VuuOa.4940$ju6.90142@newsfep4-glfd.server.ntli.net...
> > > "Walt Davidson" <walt99@tiscali.co.uk> wrote in message
> > > news:3mqkgvs1vbpu746aa4hl8ikit0d8p07859@4ax.com...
> > > > On Mon, 7 Jul 2003 21:43:34 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
> > > > wrote:
> > > >
> > > > >OK. ...and Brian Reay is ?
> > > >
> > > > M3OSN ... the principal promoter of the UK's so-called "Foundation
> > > > Licence" (aka M3/CB), and the object of much derision on the
> > > > uk.radio.amateur newsgroup.
> > > > 73 de G3NYY
> > > > Walt Davidson Email: g3nyy @freeuk.com
> > >
> > > A man who seeks to encourage others into the hobby,
> > <snip>
> > >
> > Others like yourself, which unfortunately say it all.
> > 10:4 good buddy ?
> > Steve Terry
>
> Mr Terry, _ . _ .. .. _ _ _._ _ . _ ... ... ._ ._ . _
>
Sums it up, a M3 CBer playing with Morse

Steve Terry

794. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 08:14:54 UTC
From: Young Nick <hothere@pit.com>
Message-ID: <MfXOa.47976$xd5.2551983@stones.force9.net>
Source record: 112973
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Zoran Brlecic" <...WA7AA...@get.lost> wrote in message
news:3F0BAC2C.2040401@get.lost...
> Even if you are not an ARRL member and/or disagree with its policy, you
> should seriously consider contributing to this fund. If the BPL
> technology ever gets implemented, this may very well be the end of ham
> radio as we know it. Make no mistake about it - we're talking 60 dB
> noise increase across the entire HF, not dropping the Morse requirement!
> And for what? So that people in the rural areas of USA can have a faster
> download from porn sites?

Since the RSGB has already destroyed ham radio in the UK - it's little more
than multi-band CB now - we feel there is little to be lost that hasn't
already
been sabotaged by our supposedly "National Radio Society".

So, roll-on BPL in this country - the sooner the better. The king is
dead...etc.

I hope you get mega-flamed for that last sentence. What a disgraceful
comment ! And what an appalling slur on the folks who live in rural
USA..... !!

Young Nick

795. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 08:21:42 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0bd614$1_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113040
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

RU embarrassed at the revelation that DXing is nowadays
a CBer's activity?

Zoran Brlecic <...WA7AA...@get.lost> wrote in message
news:3F0B700D.1000600@get.lost...
> YAWN! Never read more uninteresting "discussion" in my life. Do us all a
> favor and drop rec.radio.amateur.dx from this bullshit.

796. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 08:47:19 UTC
From: George <g@george.com>
Message-ID: <uvQOa.7079$nP.2750@newsfep4-winn.server.ntli.net>
Source record: 113038
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Steve Terry" <g4wwk-remove-to-reply-@tesco.net> wrote in message
news:tJOOa.5684$ju6.101554@newsfep4-glfd.server.ntli.net...
> >
> > And you are?
> > G.
> >
> in http://www.qrz.com/callsign
> As I am, and anyone who stand's by their convictions (acquitted) ;-)
>
> You're obviously one of those sad deluded persons who
> mistakenly believes their anonymous rants are worth a gob in the wind
>

Putting a 'name', assuming it is real, hasn't added any value to your rants.

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

797. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 08:50:57 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0bd838$2_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113041
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Is the style and language of the posting quoted below that which
is normally expected from someone who pretends to be a legal professional?

George <g@george.com> wrote in message
news:uvQOa.7079$nP.2750@newsfep4-winn.server.ntli.net...
> Putting a 'name', assuming it is real, hasn't added any value to your
rants.

798. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 08:54:18 UTC
From: George <g@george.com>
Message-ID: <0CQOa.7084$nP.5339@newsfep4-winn.server.ntli.net>
Source record: 113039
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0ad1e0_3@mk-nntp-1.news.uk.worldonline.com...
> Grow up, OM.
>
> <olllllllo@sbcglobal.net> wrote in message
> news:7%zOa.2418$Ul7.598931553@newssvr12.news.prodigy.com...
> > Top of your head? Your answers were essentially
> > dead wrong, or at least answers from someone who
> > had little to no grasp of the technology.

Someone else who has Gareth's measure.

Time for another sock puppet.

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

799. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 08:58:01 UTC
From: JJ <radiobuff0@mailcity.moc>
Message-ID: <3F0BD919.9040207@mailcity.moc>
Source record: 113006
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Dave Platt wrote:

>
> It has also become apparent that some very senior FCC officials are
> woefully ignorant about radio. Political appointees, I suppose.

Most of the FCC senior officials are lawyers who don't have a clue
about the technical side of radio. They wouldn't know a door knob
from a transistor. Come to think of it, a know lot of hams that
don't either.

800. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 09:13:38 UTC
From: George <g@george.com>
Message-ID: <8UQOa.7102$nP.5845@newsfep4-winn.server.ntli.net>
Source record: 113042
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0bd838$2_3@mk-nntp-1.news.uk.worldonline.com...
> Is the style and language of the posting quoted below that which
> is normally expected from someone who pretends to be a legal professional?
>

Like the supposed "Morgan Raynor"

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

801. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 09:47:21 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f0be5cf$1_3@mk-nntp-1.news.uk.worldonline.com>
Source record: 113043
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Is the posting quoted below in the style and language that is
normally to be expected from someone who pretends to be
a legal professional?

I do not invite you to correspond with them and neither do
I undertake to pay for any correspondence that arises..... "DX 34201"

George <g@george.com> wrote in message
news:8UQOa.7102$nP.5845@newsfep4-winn.server.ntli.net...
> Like the supposed "Morgan Raynor"

802. Re: Will this work?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 09:56:55 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <begota$4lepj$1@ID-134747.news.dfncis.de>
Source record: 113044

I am using an antenna based on the NorCal
"Crappie" dipole with my FT817. Theirs is 44'
across the top, mine is 66'. I have heard that
the 44' was carefully chosen for "best" all band
(80 -> 10) coverage. I am happy with mine, and
have been. The "permanent" antenna is fed with
450 ohm ladder line. The temper antenna is fed by
41' of #22 zip cord. Magic length determined by
being what was left over after cutting 25' off one
end of 100' roll of speaker wire, after split 33'
of the other end to become the flat-top portion.
Both antennas work great and I have no plans to
"improve" them any further.

--
73 es cul

wb3fup
a Salty Bear

"Batman" <kg0wx@yahoo.com> wrote in message
news:RWOOa.528829$3n5.477400@news2.central.cox.net...
> I'm moving to a new QTH in 4 weeks. I'd like to
put up the
> following antenna:
>
> 130' inverted V fed with Radio Shack 300 ohm
twinlead
> fed by a LDG 4:1 balun fed by a LDG Z-11
autotuner.
>
> The rig is a Yaesu FT-817 (5 watts max output)
>
> I was planning on getting a Van Gordon "All
bander"
> antenna, a 130 foot dipole fed with 450 ohm
ladder
> line to the same balun and tuner.
>
> I now want to build my own using Archer rotor
cable
> for the elements (18 ga.) and 300 ohm twinlead
for
> the transmission line. I do not know how long a
line

> I will need.
>
> What I'm concerned about is the VSWR and RF
handeling
> capacity of the RS heavy duty 300 ohm
line.......
>
> Opinions?
>
> 72's de Ken KG0WX
>
>

803. Re: 300/120 Ohm twin feed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 10:22:36 UTC
From: Bernhard Rhondin <bernhard_rhondin@hotmail.com>
Message-ID: <3F0BECEC.B25F9917@hotmail.com>
Source record: 113045

try the netherlands....

http://home.wanadoo.nl/haj.quast/Bliksem_detector/Onderdelenlijst.htm

BR.
Joel Dorfan wrote:

> Thanks for thje replies.
>
> I know that there is some of this stuff commercially available. I'll keep on
> looking!!
>
> "Craig Buck" <k4ia@cox.net> wrote in message
> news:oSLOa.15727$1a6.9861@lakeread01...
> > Two 300 ohm pieces in parallel??
> >
> > --
> > Radio K4ia
> > Craig "Buck"
> > Fredericksburg, VA USA
> > FISTS 6702 cc 788 Diamond 64
> > "Joel Dorfan" <bdorfan@MAPSicon.co.za> wrote in message
> > news:3f0b3304$0$227@hades.is.co.za...
> > > I need to make a balun that requires the use of 300 ohm type twin feed
> but
> > > the narrower spaced 120 ohm version.
> > >
> > > This wire is pretty hard to find, there may be a German manufacturer.
> > >
> > > Anyone have any idea who makes this stuff? I need quite a large
> quantity.
> > >
> > > Thanks
> > >
> > > Joel
> > >
> > >
> >
> >

804. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 10:39:23 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307090239.c4d9350@posting.google.com>
Source record: 113046

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message
>
> How far away are the stations you work on 75 meters mobile? Did you really
> think you were generating ground waves that went that far? Do the math.

Sure, I'm using sky wave. But the average mobile antenna, being a
vertical, is not really designed with NVIS in mind. I never expect a
truly good NVIS signal from a mobile antenna on 80m compared to a
dipole or whatever. I don't try to improve the horizontal componant.
But I do try to improve the efficiency. And that will improve the
signal in all directions equally. As far as I'm concerned, a low angle
ground wave test, is about as good as the high angle sky wave test, as
far as telling which antenna , or antenna system is the best, if the
antennas are shorter than a 1/4 wave. Actually, I would prefer the
ground wave. It's more stable, and easier to note small differences.
You haven't changed my mind on this part. What math should I do?
>
> do A/B tests from a distance also. Of course, to do this
> > will require a reference antenna to compare to, to allow for
> > propagation changes. On "my" car with my antenna, if I increase the
> > performace at one angle, I'm increasing it at all others being the
> > only real change is efficiency. So as far as comparing antennas all
> > mounted on my same truck, the "shootout" results should be quite
> > accurate.
>
> But that's nort how it is done, generally. Sure, some try more than one
> antenna, but often entries are limited to one shot due to time constraints.
> I never said comparing antennas was invalid, only comparing totally
> different systems with undefined parameters and then blaming/praising only
> the antenna.

I think *most* people have enough sense not to place all the blame or
glory on any one part. All my personal testing has been done on the
same mount, so the antenna is the difference in my cases.
>
> Being as most all the others antennas and bodies will act
> > the same, when comparing car against car, yes, the body will make a
> > difference, but myself, I can accept this. We are comparing the
> > complete systems. Many try to improve the ground systems/car bodies as
> > part of the overall system. I know I did. It's part of the "test".
> > MK
>
> But then, you give the credit only to the antenna, and don't mention
> improving the rest of the system?

I did? When? I've never been in a "shootout" yet, except in my
driveway.

So if a relatively poorer antenna on a
> good, well prepared automobile (or a Suburban with a 20 foot flatbed trailer
> with several 1" braids supplementing the trailer hitch) produces higher
> measured field strength than a better antenna on a poorer mounting choice,
> like a tiny car for an extreme example, then the poorer antenna is better?

If you say so...That question is a bit silly for me to answer.

> That's what your "shootout" will show. Shootouts are good ego boosters, but
> show relatively little about individual antennas.

Sure they are, but I don't need to know about the individual antennas.
They are easily calculated and/or modeled. They are pretty much
"pre-known" to a fairly accurate degree before you even start. I knew
almost exactly what my last antenna I designed would do in efficiency
per a given ground loss number, before I even built it.

I didn't say antenna
> systems, I said antennas, which is what the original inquiry was about.
> Now, if he had asked about improving the platform and system, then that's
> additional material. Start with the biggest, lowest vehicle you can find,
> add copper straps,.....

I believe I only mentioned antennas in my first post to him. And I
still stand behind my rankings of them. They have all been tested on
the same mount at various times.
I remember Cecil discussing one such case. I've never said the
"shootouts" are ultra accurate or anything. But I do think they are
good enough for "gov" work. To me, it's just something to do, and
compare and maybe share ideas on mobile installations. No one is
twisting your arm to go, if you don't like they way they measure
things. MK

805. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 10:56:28 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307090256.73ac4e03@posting.google.com>
Source record: 113047

Leland Cox <lcox107@comcast.net> wrote in message
news:<pKmdnbng6O3MvZeiU-KYgg@comcast.com>...
> Reg, Not sure why you hate the G5RV so much. I have several friends
> using them on 60M with low SWR!
>
> I have had many antennas and the G5RV is sure the most versatile. I have
> had great luck with a common feed dipole for 80 40 20 and 10. Just takes
> a lot of wire and 40 and 80 are not broad banded enough to cover their
> whole band!
> The antenna you describe will be directional on many frequencies. It
> will have lobes all over the place on any thing but the resonate
> frequency and it will have two major lobes. But the G5RV does the same
> thing!!!!

Yes, but with a good bit more feedline loss than the ladder line only
fed dipole on some bands. Myself, I hate G5RV's. Not because of the
dipole length, I don't like the mixing of feedline types. I find a
tuner/coax/choke-balun/ladder line feedline/mess quite goofy. That
means I also hate many windoms fed in the same way. But actually, I
hate most all non balanced antennas. I'm picky, and think I deserve
only the best...
No grey area in my thinking...:/ I gotta side with Reg on this one..
MK

806. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 11:07:07 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f0bf75c$0$958$cc9e4d1f@news.dial.pipex.com>
Source record: 113048

"G.Beat" <now9spamgb@spam.comcast.net> wrote in message
news:QIKOa.9961$wk6.2468@rwcrnsc52.ops.asp.att.net...
>
> "William H. O'Hara, III" <whoohara@yahoo.com> wrote in message
> news:Xns93B27A63AAB83AX2A3DA5M1512AODKAMO@65.100.3.61...
> > Does anyone have some experience with
> > the Ringo Ranger II?
> > I just got one for free and I can not
> > make it work well. The SWR is 1.15 or
> > thereabouts at 147.800. At approx 145.800
> > it would be about 3.0. I am not getting
> > any signal out to the nearby repeater, but
> > I can hear it full loud and quieting.
> >
> > bill
>
> Bill -
>
> Follow the assembly instructions and you should be able to adjust the
Ringo
> for the
> dip at your desired frequency. Check that you have GOOD coax (the problem
> that you describe could
> be a coax problem and not the Ringo.
> Many blame the antenna when it real problem is marginal coax --- passable
> at HF frequencies --
> but totally unacceptable at VHF.
>
> The Ringo ranger II is based on the original W1BX Ringo design. The
Ringo
> Ranger II is the current and latest design featuring three 5/8 wave
> radiating elements and an adjustable 1/8 wave phasing stub. This results
in
> a very low angle of radiation over your desired coverage area.
>
> You can read the reviews for the ARX-2B
>
http://www.eham.net/reviews/detail/2068?ehamsid=83dcc4a851259236dab75c921543
a95d
>
> g.beat
> w9gb
> --
> Do not use Reply.

> Reply only through ARRL forwarding service to W9GB

These are excellent antennae. I bought one a couple of months ago. I hear repeaters up to 180 miles away no problem - all the time, and most days I can hear the Caen repeater in France and I can activate it with 25W. That's a 230 mile trip. If you like, I can scan and e-mail you the measurements to set your antenna to.
>
>

807. Re: t tuner suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 12:00:58 UTC
From: Jerry <jerryaa@fbx.com>
Message-ID: <3f0c03fd@news.lh.net>
Source record: 113049

Thanks Reg. The endfeed program is very helpful.

808. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 12:45:14 UTC
From: richardharrison@webtv.net
Message-ID: <1145-3F0C0E5A-27@storefull-2316.public.lawson.webtv.net>
Source record: 113050

Cecil, W5DXP wrote:
"50V at zero deg. and 1A at 180 deg. = 50W
50V at 180 deg. and 1A at 0 deg. = 50W"

Cecil`s first 50W can be a reflection from a too-high load which reverses phase of current but not volts.

Cecil`s second 50W can be a reflection from a too-low load which reverses phase of voltage but not amps.

You can`t get Cecil`s second 50W by reflection of the first because reflection only reverses volts or amps, not both.

You can get Cecil`s second 50W by an additional 180-degrees of phase rotation, i.e., phase inversion for both volts and amps. This does not happen at a reflection. A reflection only inverts volts or amps, not both.

Cecil`s imaginary volts and amps are hard for me to put together. A load is either too high or too low. It can`t be both. The reflection is possibly Cecil`s first or second 50W, not both.

Re-reflection makes a single forward in-phase wave, combining new energy with the re-reflected. It can not make Cecil`s second 50W from his first 50W.

I`m eager to learn.

Best regards, Richard Harrison, KB5WZI

809. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 13:19:41 UTC
From: Frank Turner-Smith G3VKI <g3vki@ntlworld.com>
Message-ID: <EDUOa.5838$ju6.105411@newsfep4-glfd.server.ntli.net>
Source record: 113051
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0be5cf$1_3@mk-nntp-1.news.uk.worldonline.com...
> Is the posting quoted below in the style and language that is
> normally to be expected from someone who pretends to be
> a legal professional?
>
> I do not invite you to correspond with them and neither do
> I undertake to pay for any correspondence that arises..... "DX 34201"
>
> George <g@george.com> wrote in message
> news:8UQOa.7102$nP.5845@newsfep4-winn.server.ntli.net...
> > Like the supposed "Morgan Raynor"
>
Oops, looks like you hit a raw nerve there, George! I wonder why he's so
concerned, though. His recent posts have led us to believe that he conducts
his cases in person now; first in opposition to the closure of a local
byway, then to get off a charge of dangerous driving. I recall him saying
that it was these cases which had given him the confidence to go to High
Court with a libel case. I see nothing there to suggest he's employing
Messrs. Morgan Rayner again, although they are still shown as active in
Chippenham. Why is he so anxious that nobody should contact them?
http://tinyurl.com/gf9z
--
;>)
73 de Frank Turner-Smith G3VKI - mine's a pint.

810. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 13:22:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c1950$1_7@corp.newsgroups.com>
Source record: 113052

Richard Harrison wrote:
> Cecil wrote:
> "You have not offered a cause for what happens."
>
> It`s in the posting.

Would you please explain what this means?

> At the shorted receiver, the voltage wave is reflected, out-of-phase
> with no change in waveform.

We are talking about transmitting conditions, not receiving conditions.
What is a "shorted receiver"? What causes the short?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

811. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 13:44:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c1e59_7@corp.newsgroups.com>
Source record: 113054

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "50V at zero deg. and 1A at 180 deg. = 50W
> 50V at 180 deg. and 1A at 0 deg. = 50W"

200W source--50 ohm feedline--+--1/2WL 150 ohm feedline--50 ohm load

> Cecil`s first 50W can be a reflection from a too-high load which
> reverses phase of current but not volts.

Correct: It is a reflection from the physical 50 ohm to 150 ohm
impedance discontinuity. It is 25% of the source power where
|rho|^2=0.25

> Cecil`s second 50W can be a reflection from a too-low load which
> reverses phase of voltage but not amps.

Correct: It is 75% of the reflection from a 50 ohm load fed by a
150 ohm feedline where (1-|rho|^2)=0.75. The reflected power on
the 150 ohm feedline is 66.67W.

> You can`t get Cecil`s second 50W by reflection of the first because
> reflection only reverses volts or amps, not both.

Correct: These are two *separate* reflections, one from a 50 ohm to
150 ohm impedance discontinuity and the other from the 50 ohm load
fed by 150 ohm feedline.

> You can get Cecil`s second 50W by an additional 180-degrees of phase
> rotation, i.e., phase inversion for both volts and amps. This does not
> happen at a reflection. A reflection only inverts volts or amps, not
> both.

The 1/2WL of feedline causes a 180-degree phase rotation.

> Cecil`s imaginary volts and amps are hard for me to put together. A load
> is either too high or too low. It can`t be both. The reflection is
> possibly Cecil`s first or second 50W, not both.

One reflection is from the 50 ohm to 150 ohm transition in the feedline.
The other reflection is from the 50 ohm load.

> Re-reflection makes a single forward in-phase wave, combining new energy
> with the re-reflected. It can not make Cecil`s second 50W from his first
> 50W.

Who said I was making a second 50W from the first 50W?
--

73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

812. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 13:48:40 UTC
From: A Snug Naval Three <g@george.com>
Message-ID: <%VUOa.7239$nP.6301@newsfep4-winn.server.ntli.net>
Source record: 113053
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Frank Turner-Smith G3VKI" <g3vki@ntlworld.com> wrote in message
news:EDUOa.5838$ju6.105411@newsfep4-glfd.server.ntli.net...
> "Airy R Bean" <SPAM@trap> wrote in message
> news:3f0be5cf$1_3@mk-nntp-1.news.uk.worldonline.com...
> > Is the posting quoted below in the style and language that is
> > normally to be expected from someone who pretends to be
> > a legal professional?
> >
> > I do not invite you to correspond with them and neither do
> > I undertake to pay for any correspondence that arises..... "DX 34201"
> >
> > George <g@george.com> wrote in message
> > news:8UQOa.7102$nP.5845@newsfep4-winn.server.ntli.net...
> > > Like the supposed "Morgan Raynor"
> >
> Oops, looks like you hit a raw nerve there, George! I wonder why he's so
> concerned, though. His recent posts have led us to believe that he
conducts
> his cases in person now; first in opposition to the closure of a local
> byway, then to get off a charge of dangerous driving. I recall him saying
> that it was these cases which had given him the confidence to go to High
> Court with a libel case. I see nothing there to suggest he's employing
> Messrs. Morgan Rayner again, although they are still shown as active in
> Chippenham. Why is he so anxious that nobody should contact them?
> http://tinyurl.com/gf9z

Have you got any approximate dates for these cases so I can see if they are
real?

As regards Messrs M & R, maybe a little professional 'nod' is called for.

There was a case near here not so long back. A secretary took some headed
note paper home (quite legitmately to do some extra typing for the firm) but
her partner used some to fake a letter to intimidate a trademan. Secretary
lost her job and that was just the start of it.

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

813. Re: Tuner ground length question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 13:58:54 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <beh72o$188g$1@f04n12.cac.psu.edu>
Source record: 113055

Hi Ron:

The ground rods are good for lighting protection but not much good for a RF ground. You need a better RF ground. I would also put some ground radial wires out from as close to the tuner as I could get them. At least 1 for each band I wanted to operate on. In grounding there is almost no such thing as too much ground. That said hooking up to the ground rods as you said will work but with ground radials it will work much better. The problem with random wires and verticals is their both like ducks. The both look neat and simple from the surface but there a lot going on below the water line.

--
John Passaneau
Penn State University, State College Pa.
W3JXP
w3jxp@arrl.net
"Ron" <rons533@dejazzd.com> wrote in message
news:3F0B299B.543A@dejazzd.com...
> I would like to get on 10-40 meters.
> I plan to put up a random length wire fed to an MFJ-941D tuner. The
> problem I see is that it is 20 feet to my closest ground. I plan to use
> 1" copper strapping from the tuner to my ground which is 2 - 8 foot
> ground rods driven into the ground spaced 10 feet apart outside my
> shack.
> Is this too far for my ground connection?

814. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 14:08:41 UTC
From: Martin <mabmrtn.delete.this@icqmail.com>
Message-ID: <3f0c21f5$0$45177$65c69314@mercury.nildram.net>
Source record: 113056
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Walt Davidson" <walt99@tiscali.co.uk> wrote in message
news:86rlgv0pobn6dm9p37v94efro2rm6296j0@4ax.com...
> On Tue, 8 Jul 2003 13:49:43 +0100, "Martin"
> <mabmrtn.delete.this@icqmail.com> wrote:
>
> >It seems to be perfectly good English, correctly spelled (spelt?) and in
no
> >way abusive.
>
> >> George <g@george.com> wrote in message
> >> news:SivOa.6433$nP.2743@newsfep4-winn.server.ntli.net...
> >> > Some people make the occassional special trip to the gutter.
>
> If you think "occassional" is correct spelling, Martin, it says a lot
> more about the standard of your education than anything you might say
> about Gareth.

Ooops - says a lot about how quickly I read it - mea culpa... I certainly do
admit, however, that my spelling is pretty bad - thank god for spell
checkers :-)

>
> 73 de G3NYY
>
> --
> Walt Davidson Email: g3nyy @freeuk.com

Martin (G8FXC & M3ABL)

815. Re: Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 14:14:10 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <beh7vb$113m$1@f04n12.cac.psu.edu>
Source record: 113058

Hi Jeff:

Yes it will lower the impedance but only because the of the lower loss in the larger diameter. Remember RF current flows only on a thin skin layer on the surface of the conductor and the higher the frequency the shallower the skin depth is. Making the conductor bigger in diameter lowers the RF resistance of the conductor and the RF resistance of the conductor is in series with the radiation resistance of the antenna. Also as the conductor diameter increases it will need to become shorter to maintain resonance on a give frequency.

"Jeff Y." <vswrref@hotmail.com> wrote in message
news:3f0b251b.1309807@national-news.stargate.net...
> Hi John!
>
> Thanks for the input and insight. I've seen EZNEC but never gave it
> thought! Something to add on the to-do list. :)
>
> I was under the impression that it would lower the impedence by
> increasing the diameter and if I read it correctly, I was right.
>
> Changing the element diameter at.....slightly above UHF, microwave
> is what I'm after. I'm in the process of making a helix for a passive
> reflector for an , UO-11, AO-40 test setup and was debating whether to
> use #*8 ground wire or 1/4" refridgeration tubing for the conductor.
> I've been leaning towards the tubing since I made one a couple years a
> go for the fun of it and it's durable, rigid and keeps its shape. Now
> added to itm lower RF resistance and impedence as well.
>
>
> Jeff Y.
>
>
>
> On Tue, 8 Jul 2003 10:11:17 -0400, "John Passaneau" <jxp16@psu.edu>
> wrote:
>
> >Hi Jeff,
> >The best way for you to find the answer is to down load the demo version
on
> >EZNEC and try it your self.
> >But I became interested and modeled it myself.
> >
> >On 7.15MHz, a dipole at 30' over average real ground, with each leg
401.75"

> >long has a Z of 63.4+J0.7338 Ohms with #14 wire. Changing the wire to #10
> >changed the Z to 63.14+J2.817 Ohms. This means the resonate frequency is
> >lower. By shorting each side by 0.53" to 401.22" brought antenna back to
> >resonance at 7.15MHz with a Z of 62.98+j0.7913 Ohms. Changing the wire
> >diameter from #14 to #10 lowered the resonance frequency, which took a
0.53"
> >shorting of each leg to bring it back to 7.15MHz and lowered the real
part
> >of the impendence by 0.32 Ohms. This is because with the larger diameter
> >wire the RF resistance went down. As the loss with the larger wire went
> >down, the gain of the antenna went up from 7.97dbi to 8.01dbi a change of
> >0.05dbi. The bottom line at 40m changing the diameter of the wire makes a
> >very small change which would not be visible with typical ham SWR meters
or
> >antenna analyzers.
> >The effect of changing element diameter becomes more pronounced as you go
> >higher infrequency. At VHF/UHF the effect is very noticeable.
> >
> >
> >
> >--
> >John Passaneau
> >Penn State University, State College Pa.
> >W3JXP
> >w3jxp@arrl.net
> >
> >"Jeff Y." <vswrref@hotmail.com> wrote in message
> >news:3f09d544.5385368@national-news.stargate.net...
> >> Hi all,
> >>
> >> I've been trying to find some data on what happens to the feedpoint
> >> impedence of an antenna when the thickness of the wire increases. I
> >> know for a fact the bandwidth will increase somewhat but what does the
> >> impedence do, say going from 14 gauge to 10 gauge copper wire? Does
> >> it increase or decrease?
> >>
> >>
> >> Jeff Y.
> >>
> >>
> >
> >
>

816. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 14:15:44 UTC
From: Frank Turner-Smith G3VKI <g3vki@ntlworld.com>
Message-ID: <bsVOa.5861$ju6.106465@newsfep4-glfd.server.ntli.net>
Source record: 113057
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

```
"A Snug Naval Three" <g@george.com> wrote in message
news:%VUOa.7239$nP.6301@newsfep4-winn.server.ntli.net...
>
> "Frank Turner-Smith G3VKI" <g3vki@ntlworld.com> wrote in message
> news:EDUOa.5838$ju6.105411@newsfep4-glfd.server.ntli.net...
> > "Airy R Bean" <SPAM@trap> wrote in message
> > news:3f0be5cf$1_3@mk-nntp-1.news.uk.worldonline.com...
> > > Is the posting quoted below in the style and language that is
> > > normally to be expected from someone who pretends to be
> > > a legal professional?
> > >
> > > I do not invite you to correspond with them and neither do
> > > I undertake to pay for any correspondence that arises..... "DX 34201"
> > >
> > > George <g@george.com> wrote in message
> > > news:8UQOa.7102$nP.5845@newsfep4-winn.server.ntli.net...
> > > > Like the supposed "Morgan Raynor"
> > >
> > Oops, looks like you hit a raw nerve there, George! I wonder why he's so
> > concerned, though. His recent posts have led us to believe that he
> conducts
> > his cases in person now; first in opposition to the closure of a local
> > byway, then to get off a charge of dangerous driving. I recall him
saying
> > that it was these cases which had given him the confidence to go to High
> > Court with a libel case. I see nothing there to suggest he's employing
> > Messrs. Morgan Rayner again, although they are still shown as active in
> > Chippenham. Why is he so anxious that nobody should contact them?
> > http://tinyurl.com/gf9z
>
> Have you got any approximate dates for these cases so I can see if they
are
> real?
>
> As regards Messrs M & R, maybe a little professional 'nod' is called for.
>
> There was a case near here not so long back. A secretary took some headed
> note paper home (quite legitmately to do some extra typing for the firm)
but
> her partner used some to fake a letter to intimidate a trademan.
Secretary
> lost her job and that was just the start of it.
>
```

The only information I have is from posts that have appeared on this NG, mainly from 'Airy R Bean'. I assume these cases were heard in the Chippenham area, but I know nothing further.
If I received a letter from a Solicitor acting on someone else's behalf, I would reply to the Solicitor, and not his client. If the letter then proved to be a forgery I'm sure this would be regarded as a very serious matter.
I'm sure in the case you mention the secretary losing her job was the least of their problems!
--
;>)
73 de Frank Turner-Smith G3VKI - mine's a pint.

817. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 14:39:41 UTC
From: richardharrison@webtv.net
Message-ID: <19105-3F0C292D-15@storefull-2314.public.lawson.webtv.net>
Source record: 113059

Cecil, W5DXP wrote:
"Superpose the following:"

My question is how are these two 50W signals generated and made to coincide?

Cecil also wrote:
"Who said I was making a second 50W from the first 50W?"

I poorly used good words. It is the same 50W which is redirected by reflection. I apologize.

Best regards, Richard Harrison, KB5WZI

818. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:03:47 UTC
From: richardharrison@webtv.net
Message-ID: <19105-3F0C2ED3-16@storefull-2314.public.lawson.webtv.net>
Source record: 113062

Cecil, W5DXP wrote:
"What is a shorted receiver?"

A transmission line has a sending end and a receiving end. Many authors, and I am not an author, call the load at the receiving end of the line simply "the receiver", just like the listening device on the end of a telephone line.

The short is caused by a "small" length of conductor connecting the two-conductor assembly comprising a transmission line. The result is zero impedance at the short-circuit point on the line.

Best regards, Richard Harrison, KB5WZI

819. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:06:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c31bc_8@corp.newsgroups.com>
Source record: 113061

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "Superpose the following:"
>
> My question is how are these two 50W signals generated and made to
> coincide?

Did you see the diagram? The two signals are s11*a1 and s12*a2
in the s-parameter equation b1 = s11*a1 + s12*a2

That's essentially the same equation as

Vref1 = Vfwd1(rho-v) + Vref2(tau-v)

Vfwd1(rho-v) = 50V at zero degrees. Vref2(tau-v) = 50V at 180 degrees.

Iref1 = Ifwd1(rho-i) + Iref2(tau-i)

Ifwd1(rho-i) = 1A at 180 degrees. Iref(tau-i) = 1A at zero degrees.

Of course, the appropriate 'rho' (reflection coefficient) and 'tau'
(transmission coefficient) must be chosen. They are not the same
values for voltage and current.

The point is, those two waves superpose to a voltage of zero and
a current of zero. What happens to the energy that pre-existed in
those waves before they are destroyed?
--
73, Cecil http://www.qsl.net/w5dxp

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820. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:17:21 UTC
From: Andy Cowley <andy.cowley@uwe.ac.uk>
Message-ID: <3F0C3217.4242B1B5@uwe.ac.uk>
Source record: 113065
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Frank Turner-Smith G3VKI wrote:
>
> "Airy R Bean" <SPAM@trap> wrote in message
> news:3f0be5cf$1_3@mk-nntp-1.news.uk.worldonline.com...
> > Is the posting quoted below in the style and language that is
> > normally to be expected from someone who pretends to be
> > a legal professional?
> >
> > I do not invite you to correspond with them and neither do
> > I undertake to pay for any correspondence that arises..... "DX 34201"
> >
> > George <g@george.com> wrote in message
> > news:8UQOa.7102$nP.5845@newsfep4-winn.server.ntli.net...
> > > Like the supposed "Morgan Raynor"
> >
> Oops, looks like you hit a raw nerve there, George! I wonder why he's so
> concerned, though. His recent posts have led us to believe that he conducts
> his cases in person now; first in opposition to the closure of a local
> byway, then to get off a charge of dangerous driving. I recall him saying
> that it was these cases which had given him the confidence to go to High
> Court with a libel case. I see nothing there to suggest he's employing
> Messrs. Morgan Rayner again, although they are still shown as active in
> Chippenham. Why is he so anxious that nobody should contact them?
> http://tinyurl.com/gf9z
> --
> ;>)
> 73 de Frank Turner-Smith G3VKI - mine's a pint.

Because he has been sending letters purporting to come
from them without due authority. The letter at the URL
you gave is clearly not from a qualified legal professional
but from a deluded fantasist who fancies he is Perry Mason.

Threatening behaviour looks favourite, but I'm sure Messrs
Morgan Raynor can come up with something much nastier to
charge him with. Forgery, deception etc. etc. I suppose he
doesn't want their attention drawn to his activities.

vy 73

Andy, M3ABC

821. Re: How to feed a 1/2 dipole and fit a proper balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:19:41 UTC
From: henrikolofsson@yahoo.se
Message-ID: <7030d3aa.0307090719.7dce23f8@posting.google.com>
Source record: 113063

5 watts on 2 meter.

Roy Lewallen <w7el@eznec.com> wrote in message news:<vgn5j7shnmlqa9@corp.supernews.com>...
> How much power will you be running? What frequencies?
>
> Roy Lewallen, W7EL
>
> Henrik wrote:
> > What kind of 50 ohm coax should I use for 25 meter distance? What kind
> > of balun is recommended? Using RG58 it is easy to fit two coax in one
> > connector but how do I make the balun with thicker coax?
> >
> > BR,
> > Henrik

822. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:21:31 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <behbdpdqr1@news.service.uci.edu>
Source record: 113064

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f0b8d46$1_1@corp.newsgroups.com...
> Jim Kelley wrote:
> > So if you could explain to us the process by which the cancellation
> > occurs, you might then begin to understand why energy can't be conveyed
> > by the cancelled light waves.
>
> Bafflegab again.

Not at all. Absolute truth. You can either try to understand what's going on, or you can continue to blither on with your ignorant misconceptions as you have below. It's your problem, not mine.

Here's a hint for you Cecil: you seem to have forgotten that where there's destructive interference, there's always constructive interference - even if the light is coming from Alpha Centauri. It's that conservation of energy thing I mentioned.

ac6xg

> Waves cannot exist without energy. If waves possess
> energy, then that energy must be conserved after destruction of the
> rearward-traveling waves. Waves don't go anywhere after they are
destroyed.
> Energy cannot be destroyed. Where does the energy in the destroyed waves
> go? It cannot stand still and it doesn't flow toward the source. We
already
> know it flows in the forward direction as constructive interference. We
> know the destroyed waves were rearward-traveling waves. The rational
> conclusions are obvious.

823. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:24:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c35c7$1_8@corp.newsgroups.com>
Source record: 113066

G.Balinski wrote:

> Has anyone put together a recent test of mobile HF antennas? I think
> that I remembered something in past years called a "shoot out" or something
> like that. As far as I remember though, it was as much of a test of the
> installation of the antennas as the antennas themselves as different
> vehicles and install methods were used. It would be nice to see on
> objective comparison of the various units like the Hustler series, Ham
> Stick, all the variants of the screw driver antennas, the Texas Bugcatcher,
> etc. all mounted on the same platform with the same grounding system, etc.
>
> Anyone seen such a test ?

Here it is in a nutshell for 75m. Bugcatchers with large top hats and
screwdrivers with large top hats are close to equal at the top of the heap.

Taking away the top hat costs about 2 dB. ~30-40% loss of power

Hustler and Outbacker are about 9 dB down from the top. ~85% loss

Hamstick is about 12 dB down from the top. ~95% loss

11.5' whip is about 13 dB down from the top. A 102" whip
would be even worse.
--
73, Cecil http://www.qsl.net/w5dxp

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824. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:27:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c3692_8@corp.newsgroups.com>
Source record: 113067

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "What is a shorted receiver?"
>
> A transmission line has a sending end and a receiving end. Many authors,
> and I am not an author, call the load at the receiving end of the line
> simply "the receiver", just like the listening device on the end of a
> telephone line.
>
> The short is caused by a "small" length of conductor connecting the
> two-conductor assembly comprising a transmission line. The result is
> zero impedance at the short-circuit point on the line.

Assuming the antenna is "the receiver" during transmit conditions,
the antenna is not shorted. So what is the purpose of the short
at the antenna? I must be missing the point.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

825. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:45:07 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <behcq2ega1@news.service.uci.edu>
Source record: 113068

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f0b8449_1@corp.newsgroups.com...
> Jim Kelley wrote:
> > The fact that light which is not
> > reflected would appear in the transmitted direction is obvious ...
>
> Ahhh, but the Melles-Griot web page specifically states that the enhanced
> intensity comes from the *REFLECTED* canceled wavefronts which were
obviously
> rearward-traveling waves before the cancellation. Sorry, you lose again.

So as I was saying, Cecil is in a battle for newsgroup points (maybe his ISP is offering a premium). He is primarily concerned with winning. To do so his opponent must lose, of course. The truth is virtually irrelevant to him. The fact that he can produce no physical or mathematical support for his assertions is irrelevant to him in this endeavor. His only hope is a particular interpretation of some prose on a web page. But he must also ignore the facts that support the correct interpretation of the web page. He comoflages this by producing blizzards of insulting posts in hopes that his correspondent might be badgered into submitting to his version of nature - or at least, leaving the discussion so that his aberrant vision can be promulgated unopposed. The longer the process takes, the more insulting and ridiculous his writing becomes.

ac6xg

826. Re: Cecilian Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:49:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c3b9a_6@corp.newsgroups.com>
Source record: 112970

Jim Kelley wrote:
> Here's a hint for you Cecil: you seem to have forgotten that where there's
> destructive interference, there's always constructive interference - even if
> the light is coming from Alpha Centauri. It's that conservation of energy
> thing I mentioned.

Ahhhh Jim, that has been the cornerstone of my argument all alone.
I see that my multiple quotes from _Optics_ by Hecht have finally
sunk in on you. We know that, in a Z0-matched system, constructive
interference takes place on the load side of the impedance discontinuity.

That means that destructive interference must be taking place on the
source side of the impedance discontinuity. Nothing exists there
that can interfere except TWO REARWARD-TRAVELING REFLECTED WAVES!

The light coming from Alpha Centauri contained energy when it was
generated and contained energy when it reached the earth. It
contained energy when it was forced to interfere here on earth.
Your following assertion is ridiculous in the extreme.

> It (Alpha Centauri) made the decision not to send energy at the
> same time it decided to send the two beams to us out of phase.

Face it, Jim, all EM waves contain energy. Your energyless wave
theories just won't fly. If the energy is zero, the E-field is
zero, the H-field is zero, the voltage is zero, and the current
is zero. Aren't you ashamed to call such a conceptual abortion
a "wave"?

So are you finally ready to admit that the reflected energy power
flow vector does indeed represent energy in motion?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

827. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:51:38 UTC
From: kf4tun <kf4tun@adelphia.net>
Message-ID: <eSWOa.10981$Hw.8204121@news2.news.adelphia.net>
Source record: 112969

Went to the site Steve gave www.solder-it.com, and checked it out. They sale some really neat stuff and I now know that aluminum can be soldered to copper. Or, just soldered, for that matter!

Jim, kf4tun

"Steve Beyers" <sjbeyers@trianglenet.net> wrote in message news:72befaab.0307080545.2542414c@posting.google.com...
> "kf4tun" <kf4tun@adelphia.net> wrote in message news:<Hx4Oa.10419$Hw.7535985@news2.news.adelphia.net>...
> > Where does one buy aluminum solder?
> >
> > Jim, kf4tun
> >
> > "froggers" <not.froggers@nospam.ntlworld.com> wrote in message
> > news:3I0Oa.2719$vn2.90404@newsfep2-gui.server.ntli.net...
> > > Solder it on
> > >
> > > Nick
> > >
> > >
>
> Try www.solder-it.com. Not all aluminum can be soldered, but some can be.
>
> Steve

828. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 15:57:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c3d83_6@corp.newsgroups.com>
Source record: 112971

Jim Kelley wrote:
> So as I was saying, Cecil is in a battle for newsgroup points (maybe his ISP
> is offering a premium). He is primarily concerned with winning. To do so
> his opponent must lose, of course. The truth is virtually irrelevant to
> him. The fact that he can produce no physical or mathematical support for
> his assertions is irrelevant to him in this endeavor. His only hope is a
> particular interpretation of some prose on a web page. But he must also
> ignore the facts that support the correct interpretation of the web page.
> He comoflages this by producing blizzards of insulting posts in hopes that
> his correspondent might be badgered into submitting to his version of
> nature - or at least, leaving the discussion so that his aberrant vision can
> be promulgated unopposed. The longer the process takes, the more insulting
> and ridiculous his writing becomes.

I am going to conceed part of the argument to you, Jim. I simply cannot
match your diversions and ad hominem attacks. I hope what you were after
is the *King Ad Hominem Attack Crown* because you own it, hands down.

When you have nothing technical to offer and are being defeated in the
technical argument, you resort to the above. Replace "Cecil" with "Jim"
and you are describing yourself perfectly. Such attacks are why I broke
off email communications with you. You simply cannot stand to be proven
wrong in private or in public.

Anytime you want to discuss technical topics, please do so. Otherwise,
I am just not going to respond to your ad hominem garbage. You win
that war, hands down. I surrender.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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829. Re: Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 16:14:55 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <behf1vhlk1@sparta.btinternet.com>
Source record: 112972

> Yes it will lower the impedance but only because
> the of the lower loss in the larger diameter.
==========

John, must add something more.

The antenna behaves as a single-wire transmission line. Its feedpoint impedance decreases with increasing conductor diameter because of the increase in capacitance and a decrease in inductance per unit length.

The reduction in conductor loss resistance has a lesser effect than L and C, especially with big conductor diameters as when self-supporting aluminium tubes are used.

Reg, G4FGQ

830. Re: How to feed a 1/2 dipole and fit a proper balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 16:37:09 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <TeydnSX2MOWL2JGiU-KYuQ@ctc.net>
Source record: 112974

> 5 watts on 2 meter.
>
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vgn5j7shnmlqa9@corp.supernews.com>...
> > How much power will you be running? What frequencies?
> >
> > Roy Lewallen, W7EL
> >
> > Henrik wrote:
> > > What kind of 50 ohm coax should I use for 25 meter distance? What kind
> > > of balun is recommended? Using RG58 it is easy to fit two coax in one
> > > connector but how do I make the balun with thicker coax?

Forget the balun and just feed the dipole with rg-8 or beter coax.
You will loose more in the balun than you will gain in any other way.

831. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 16:56:23 UTC
From: dmu_pkearn_dmu@rondomondo.eircom.ru.tv.net
Message-ID: <3f0c4466.1069945@news1.eircom.net>
Source record: 112975
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Tue, 08 Jul 2003 08:06:48 +0100, Walt Davidson
<walt99@tiscali.co.uk> wrote:

>On Mon, 7 Jul 2003 21:43:34 -0400, "J. McLaughlin" <JCM@Power-Net.Net>
>wrote:
>
>>OK. ...and Brian Reay is ?
>
>M3OSN ... the principal promoter of the UK's so-called "Foundation
>Licence" (aka M3/CB), and the object of much derision on the
>uk.radio.amateur newsgroup.

you left out...

the TWO DEGREES
the cb radio
the no-interest in hf
the amazing links to ITU and WRC2003 info
the apparent hot-line ot the RA
the TWENTY YEAR OLD NO-CODE VHF-ONLY licence.

oh ...and the RUBBER STAMP

832. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 16:56:24 UTC
From: dmu_pkearn_dmu@rondomondo.eircom.ru.tv.net
Message-ID: <3f0c452a.1265990@news1.eircom.net>
Source record: 112976
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Wed, 9 Jul 2003 15:17:21 GMT, Andy Cowley <andy.cowley@uwe.ac.uk>
wrote:
>
>Andy, M3ABC

gone back to M3abc **ALREADY** ..man! that was quick..

what happened ? CEPT meeting get in the way ?

833. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 16:56:25 UTC
From: dmu_pkearn_dmu@rondomondo.eircom.ru.tv.net
Message-ID: <3f0c4578.1343686@news1.eircom.net>
Source record: 112977
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Wed, 9 Jul 2003 07:55:23 +0100, "Steve Terry"
<g4wwk-remove-to-reply-@tesco.net> wrote:

>> Mr Terry, _ . _ .. .. _ _ _._ _ . _ ... ... ._ ._ . _
>>
>Sums it up, a M3 CBer playing with Morse
>
>Steve Terry

and cant even send it properly anyhow :-)

834. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 17:05:54 UTC
From: Frank Turner-Smith G3VKI <g3vki@ntlworld.com>
Message-ID: <JXXOa.7370$nP.2094@newsfep4-winn.server.ntli.net>
Source record: 112978
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

```
"Andy Cowley" <andy.cowley@uwe.ac.uk> wrote in message
news:3F0C3217.4242B1B5@uwe.ac.uk...
> Frank Turner-Smith G3VKI wrote:
> >
> > "Airy R Bean" <SPAM@trap> wrote in message
> > news:3f0be5cf$1_3@mk-nntp-1.news.uk.worldonline.com...
> > > Is the posting quoted below in the style and language that is
> > > normally to be expected from someone who pretends to be
> > > a legal professional?
> > >
> > > I do not invite you to correspond with them and neither do
> > > I undertake to pay for any correspondence that arises..... "DX 34201"
> > >
> > > George <g@george.com> wrote in message
> > > news:8UQOa.7102$nP.5845@newsfep4-winn.server.ntli.net...
> > > > Like the supposed "Morgan Raynor"
> > >
> > Oops, looks like you hit a raw nerve there, George! I wonder why he's so
> > concerned, though. His recent posts have led us to believe that he
conducts
> > his cases in person now; first in opposition to the closure of a local
> > byway, then to get off a charge of dangerous driving. I recall him
saying
> > that it was these cases which had given him the confidence to go to High
> > Court with a libel case. I see nothing there to suggest he's employing
> > Messrs. Morgan Rayner again, although they are still shown as active in
> > Chippenham. Why is he so anxious that nobody should contact them?
> > http://tinyurl.com/gf9z
> > --
> > ;>)
> > 73 de Frank Turner-Smith G3VKI - mine's a pint.
>
> Because he has been sending letters purporting to come
> from them without due authority. The letter at the URL
> you gave is clearly not from a qualified legal professional
> but from a deluded fantasist who fancies he is Perry Mason.
>
> Threatening behaviour looks favourite, but I'm sure Messrs
> Morgan Raynor can come up with something much nastier to
> charge him with. Forgery, deception etc. etc. I suppose he
> doesn't want their attention drawn to his activities.
>
>
```

> vy 73
>
> Andy, M3ABC

There's an old saying - 'be sure your sins will find you out.' That letter was written back in 1998. If it's a forgery the last thing the forger would have expected would be discovery in 2003. I wonder if Mr Bryan has still got the letter; DNA tests could be interesting!
--
;>)
73 de Frank Turner-Smith G3VKI - mine's a pint.

835. Re: Will this work?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 17:19:18 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <behiqm$13ql$1@news1.tribune.com>
Source record: 112979

You can calculate the losses in the line to a dipole Dipole3.exe. I have
not yet tried the Inverted Vee program.
http://www.btinternet.com/~g4fgq.regp/
In my application is was not significantly different from using bigger,
heavier, more expensive 450 ohm line.

KA9CAR

"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
news:52lpgv0a4d30en2rv8m3dj708ca288noi8@4ax.com...
> On Wed, 09 Jul 2003 06:50:25 GMT, "Batman" <kg0wx@yahoo.com> wrote:
>
>
> >
> >I now want to build my own using Archer rotor cable
> >for the elements (18 ga.) and 300 ohm twinlead for
> >the transmission line. I do not know how long a line
> >I will need.
> >
> >What I'm concerned about is the VSWR and RF handeling
> >capacity of the RS heavy duty 300 ohm line.......
>
> If you're worried about the RS line, the Wireman also has 300- &
> 450-ohm lines rated for medium or high power levels.
>
> Bob
> k5qwg
>
> >
> >Opinions?
> >
> >72's de Ken KG0WX
> >
>

836. Re: Will this work?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 17:39:59 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0C536F.8DC4598C@cwis.net>
Source record: 112980

Ken,
The 300 ohm line should be able to handle anything
you'll be able to put into it with a FT-817 with no
trouble at all. The only worry I would have is how
long the mechanical connection between the antenna and
the twin lead will last. 18ga wire isn't very durable
when it's moving around in the wind...
'Doc

837. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 17:44:55 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0C5497.C48404D4@cwis.net>
Source record: 112981
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Zoran,
Exactly how would my contribution be used to fight
'BPL'? Postage, salaries, ISP changes?
'Doc

838. Re: Dipole Help

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 17:55:23 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0C570B.220B6A08@cwis.net>
Source record: 112982

whitehat,
If there is nothing bridging the 1" gap at the end
insulators, the last 22' of wire are not part of the
antenna (or part of it's missing). So, that would make
it a 30 meter dipole (close). Personally, I'd get rid
of the 'extra' 22 feet on each end and replace it with
a non-conducting cord/rope of some kind, if you're going
to use it as a 30 meter dipole.
'Doc

839. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 17:59:55 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0C581B.A75E218B@uci.edu>
Source record: 112983

W5DXP wrote:
> I simply cannot
> match your diversions and ad hominem attacks.

You could if you cut down on the number of them by a factor of two or so.

How many times do you think the word 'you' should appear in a technical discussion? Count how many times that word appears in your posts, and compare it with the number of times it appears in my posts.

ac6xg

840. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 18:01:26 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0C5876.87DAD232@cwis.net>
Source record: 112984

Reg,
Don't start any 'hanky panky'!
'Doc

841. Re: How to feed a 1/2 dipole and fit a proper balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 18:26:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgonjd20gvt8e3@corp.supernews.com>
Source record: 112986

Ok, you don't need large coax because of power -- loss is the only consideration. 25 meters of RG-58 coax will have about 5 dB loss; RG-213 or RG-8 type cable, a bit under 3 dB. Good quality foam dielectric RG-8 size cable has a bit under 2 dB loss (because of its larger center conductor, not because of lower dielectric loss). Other cable types have less loss yet, but are generally more expensive.

It's up to you to decide how much you're willing to sacrifice in weight and cost to get reduced loss.

A balun can be useful for a number of different antenna types at 2 meters, including a ground plane and J pole. When the feedline drops directly down from these antennas, considerable current can be induced on the outside of the feedline by mutual coupling. When this happens, pattern distortion can result. Modeling shows that the gain at the horizon can be reduced by up to 2 dB or so as a result, depending on the feedline length. This is about the difference between using RG-58 and RG-8 sized cable as feedline.

I don't have any direct experience with 2 meter baluns, but I'd guess that about 10 decent sized cores of type 43 ferrite slipped over the outside of the coax would suffice. Or you can wind the coax into about 4 or 5 turns on a large core of the same type. An effective balun can be made by just winding a few turns of coax into a loop, but I don't have dimensions for 2 meters. To be effective when using a ground plane, J pole, or similar antenna, you'll need two baluns -- one at the feedpoint, and another about 1/4 wavelength below it.

Roy Lewallen, W7EL

Henrik wrote:
> 5 watts on 2 meter.
>
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vgn5j7shnmlqa9@corp.supernews.com>...
>
>>How much power will you be running? What frequencies?
>>
>>Roy Lewallen, W7EL
>>
>>Henrik wrote:
>>
>>>What kind of 50 ohm coax should I use for 25 meter distance? What kind
>>>of balun is recommended? Using RG58 it is easy to fit two coax in one
>>>connector but how do I make the balun with thicker coax?
>>>

>>>BR,
>>>Henrik

842. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 18:51:52 UTC
From: jder8745@aol.com
Message-ID: <20030709145152.04143.00000079@mb-m14.aol.com>
Source record: 112987

Someone said...

"I also have heard that removing the oxide layer by scratching the surface whilst under an oil film then soldering with ordinary solder works OK."

This works, I've demonstrated it many times to bewildered unbelievers.

Put a small puddle of oil on the aluminum. Use you pocket knive to scrape the aluminum under the puddle of oil. Thus the oil keeps the aluminum from instantly oxidising, Use a BIG HOT soldering iron and plunge the solder and the iron tip in the puddle of oil making contact with the aluminum. When the solder and the aluminum are hot enough the solder will flow and "tin" the aluminum.

Then solder a lug to the bunch of solder which is soldered to aluminun.

You'll think you have witnessed a miracle.

Remember: BIG & HOT!

73 de Jack, K9CUN

843. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:04:00 UTC
From: richardharrison@webtv.net
Message-ID: <1146-3F0C6720-23@storefull-2316.public.lawson.webtv.net>
Source record: 112989

Cecil, W5DXP wrote:
"What is the purpose of the short at the antenna?"

I can think of several possibilities, reaonate the antenna, broaden the bandwidth, and suppress lightning, if the short is at the end of the right stub and properly grounded. But I doubt that is responsive to your question.

I`ve forgotten how or why or which short we were discussing. I`ll speculate it was an illustration to simplify explanation of transmission line behavior. Shorts make manifest line action more readily to some observers than do too-low Z`s.

Then, there is the junction which has been called a "virtual short" because it allows no reflected energy reach back to its source but re-reflects all the reflected energy toward the load.

The junction is reflective because it is an impedance bump.

The junction is impermeable from the load side because the transmitter side is never at lower strength than the load side.

Best regards, Richard Harrison, KB5WZI

844. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:09:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c6a9b_4@corp.newsgroups.com>
Source record: 112988

Jim Kelley wrote:
> How many times do you think the word 'you' should appear in a technical
> discussion? Count how many times that word appears in your posts, and
> compare it with the number of times it appears in my posts.

OK, here is one of your typical posts:

> So as I was saying, Cecil is in a battle for newsgroup points (maybe his ISP
> is offering a premium). He is primarily concerned with winning. To do so
> his opponent must lose, of course. The truth is virtually irrelevant to
> him. The fact that he can produce no physical or mathematical support for
> his assertions is irrelevant to him in this endeavor. His only hope is a
> particular interpretation of some prose on a web page. But he must also
> ignore the facts that support the correct interpretation of the web page.
> He comoflages this by producing blizzards of insulting posts in hopes that
> his correspondent might be badgered into submitting to his version of
> nature - or at least, leaving the discussion so that his aberrant vision can
> be promulgated unopposed. The longer the process takes, the more insulting
> and ridiculous his writing becomes.

I count 15 references to me and zero technical content. How many times should
a reference to your opponent appear in a technical discussion? By your own
example above of your preferred way to post, I guess your answer must be 15 times.
Whatever it is, you outdid me by a magnitude. Congratulations, you win the all time
ad hominem attack award plus the award for the ratio of most personal references
to your opponent to the technical content of the posting. It's a record
that may be someday be equaled but never bested. It's hard to beat a ratio
of infinity.
--
73, Cecil http://www.qsl.net/w5dxp

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845. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:31:46 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <kxCdnfQ-9_4-8JGiRTvUqw@crocker.com>
Source record: 112992

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f0b8698_1@corp.newsgroups.com...
> Jim Kelley wrote:
> > Energy from the LASER does goes somewhere. But it does not go in the
> > direction of destructive interference. It of course goes in the
> > direction constructive interference (or non-interference). However it
> > takes the direct route, rather than the circuitous route you have been
> > lecturing to us about. It's quite apparent there is no such route.
>
> It is quite apparent from reading the Melles-Griot web page that there
> is such a route. Please reference the drawing under "thin-film
interference"
> on the Melles-Griot web page.
>
> | 1/4WL |
> Laser-----air-----|---thin-film---|---glass---...
> | |
> F B
>
> During steady-state, there is a reflection from plane B that travels
> rearward toward plane F. The reflection from plane B has an associated
> power flow vector. What happens to that rearward-traveling power flow
> vector to reverse its direction at plane F? That power flow vector is
> represented by a green line on the drawing under "thin-film interference"
> on the Melles-Griot web page.
>
> http://www.mellesgriot.com/products/optics/oc_2_1.htm

the green line is not for a perpendicular reflection hence there is no
interference and no cancellation so this example can not be compared with
coax.

the slightly more appropriate discussion in the case of normal incidence
below that leaves out the important points about where the cancellation
occurs... which as you yourself has said is at the mismatch points, which in
the thin film case is at each of the interfaces to the film, not within the
film, and not in either of the other materials, but just at the film
surfaces where the actual reflections and refractions take place... I
propose we dub these interfering 'waves' as 'virtual waves' since they never
leave the cancellation point, they are a way of accounting for the various
components that the reflection and refraction coefficient say should be
there but are actually canceled before you can see them.... somehow the
'virtual' label just seems to fit.

846. Novice: Grid-dipper How-to needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:34:08 UTC
From: Frank <not-for-mail@spammed.domain.virgilio.it>
Message-ID: <ifrogvovansgvskk1trqlmelamctp47grf@4ax.com>
Source record: 112991

Can you suggest me a good site
that explains all measurements
that a GDO can do?
Thanks in advance

847. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:35:19 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <KAOdndB0F9bq85GiRTvUqw@crocker.com>
Source record: 112994

> W5DXP wrote:
> >
> > Jim Kelley wrote:
> >
> > >
> > > W5DXP wrote:
> > > We know that a wave (or some part of it) changes direction when it
> > > encounters a physical discontinuity. But you continue to fail to
> > > explain how a wave changes direction when it encounters an equal
> > > magnitude opposite phase wave #2 traveling in the same direction.
> >
> > Yes, that's the missing mechanism that I hope someone will supply.

the 'missing' mechanism is the specification of the boundary conditions at the mismatch point. that is where all the cancellation occurs as you have acknowledged Cecil. there is no reversal, you just solve for the voltage or current at the mismatch point, apply that as the boundary condition to the wave equation in each direction and it all adds up.

848. Windom as sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:36:22 UTC
From: Frank <not-for-mail@spammed.domain.virgilio.it>
Message-ID: <6jrogvcc1o10vdlce4pobmvvmnpbftp6gr@4ax.com>
Source record: 112993

I can install a windom antenna
only inclinated as sloper.

My question is:
the impedance is the same
as the well known horizontal version?

thanks

849. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:39:14 UTC
From: A Snug Naval Three <g@george.com>
Message-ID: <E2_Oa.6058$ju6.109607@newsfep4-glfd.server.ntli.net>
Source record: 112990
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Frank Turner-Smith G3VKI" <g3vki@ntlworld.com> wrote in message
news:bsVOa.5861$ju6.106465@newsfep4-glfd.server.ntli.net...
> The only information I have is from posts that have appeared on this NG,
> mainly from 'Airy R Bean'. I assume these cases were heard in the
Chippenham
> area, but I know nothing further.
> If I received a letter from a Solicitor acting on someone else's behalf, I
> would reply to the Solicitor, and not his client. If the letter then
proved
> to be a forgery I'm sure this would be regarded as a very serious matter.
> I'm sure in the case you mention the secretary losing her job was the
least
> of their problems!

Well these cases do happen and people often ignore the letter if they think
it is fake. Could well be M & R never heard of the case. Is the person who
got the letter still on the NG?

Of course, Gareth could come clean.

Still not got a date for his next case 8-)

--.

Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.497 / Virus Database: 296 - Release Date: 04/07/03

850. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 19:46:18 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307091146.7f73ee0f@posting.google.com>
Source record: 112995
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

60db is a very high figure. Where does this figure come from.
If this is correct wouldn't the VOA,BBC and others nations
broadcasts be shut out from America? Something is odd here,
I can't believe that the FCC would intentionally jam all HF
frequencies from citizen useage.
If the 60db figure is an exageration to get funds then the
augument is lost before it starts !
Even if it is correct Ham Radio could not do anything about
it because its members have shown little interest in
perpetuating the hobby with actual deeds.

Art

mdbZoran Brlecic <...WA7AA...@get.lost> wrote in message
news:<3F0BAC2C.2040401@get.lost>...
> Even if you are not an ARRL member and/or disagree with its policy, you
> should seriously consider contributing to this fund. If the BPL
> technology ever gets implemented, this may very well be the end of ham
> radio as we know it. Make no mistake about it - we're talking 60 dB
> noise increase across the entire HF, not dropping the Morse requirement!
> And for what? So that people in the rural areas of USA can have a faster
> download from porn sites?
>
> https://www.arrl.org/forms/development/donations/bpl/
>
> A measly $25 - $100 can help prevent your $5000 equipment from becoming
> an expensive coffee cup warmer.
>
>
> 73 .... WA7AA

851. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:04:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c775f_4@corp.newsgroups.com>
Source record: 112996

Richard Harrison wrote:
> Then, there is the junction which has been called a "virtual short"
> because it allows no reflected energy reach back to its source but
> re-reflects all the reflected energy toward the load.

Steven Best says that total re-reflection is a fallacy. Do
you disagree with Dr. Best?

> The junction is reflective because it is an impedance bump.

But the impedance bump doesn't have a reflection coefficient
of 1.0 so how can it possibly re-reflect 100% of the reflected
power? This is the question I have about Walter Maxwell's
"virtual short". Wave cancellation along with normal re-reflection
explains everything perfectly.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

852. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:06:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c77f2$1_4@corp.newsgroups.com>
Source record: 112997

David Robbins wrote:
> the green line is not for a perpendicular reflection hence there is no
> interference and no cancellation so this example can not be compared with
> coax.

Good grief, David, just as the flow chart cannot be drawn upon a point,
the reflection chart cannot be drawn in one dimension. Assume for purposes
of illustration that the reflection *IS* perpendicular.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

853. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:13:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c797e_4@corp.newsgroups.com>
Source record: 113000

David Robbins wrote:
> the 'missing' mechanism is the specification of the boundary conditions at
> the mismatch point. that is where all the cancellation occurs as you have
> acknowledged Cecil. there is no reversal, you just solve for the voltage or
> current at the mismatch point, apply that as the boundary condition to the
> wave equation in each direction and it all adds up.

Of course it adds up, David. If my bank account is the same at the beginning
of the month as at the end of the month, you would argue that it adds up
and we can assume there were no transactions during the month. I am not interested
in being seduced by the steady-state religion and everything simply adding up. I
am interested in the underlying transactions. Since the behavior of matter is
already known on the macroscopic scale, why do you suppose we spend billions
of dollars to find out what is happening on a microscopic scale? Aren't
you the least bit curious at to what is happening underneath the steady-state
simplified model?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

854. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:13:41 UTC
From: Frank Turner-Smith G3VKI <g3vki@ntlworld.com>
Message-ID: <LH_Oa.6081$ju6.110076@newsfep4-glfd.server.ntli.net>
Source record: 112998
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"A Snug Naval Three" <g@george.com> wrote in message
news:E2_Oa.6058$ju6.109607@newsfep4-glfd.server.ntli.net...
>
>
> Well these cases do happen and people often ignore the letter if they
think
> it is fake. Could well be M & R never heard of the case. Is the person who
> got the letter still on the NG?
>
He seems to have stopped posting to this group under that name around the
year 2000. I have located him by call sign and asked him to contact me. If
you give me your email address I'll send you a copy of my email to him and
any answers.
--
;>)
73 de Frank Turner-Smith G3VKI - mine's a pint.

855. Re: Will this work?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:13:50 UTC
From: Batman <kg0wx@yahoo.com>
Message-ID: <2I_Oa.177$R92.170@news2.central.cox.net>
Source record: 112999

"'Doc" <w5lz@cwis.net> wrote in message news:3F0C536F.8DC4598C@cwis.net...
> Ken,
> The 300 ohm line should be able to handle anything
> you'll be able to put into it with a FT-817 with no
> trouble at all. The only worry I would have is how
> long the mechanical connection between the antenna and
> the twin lead will last. 18ga wire isn't very durable
> when it's moving around in the wind...
> 'Doc

Thanks, Doc - I'll make sure I account for the fragile nature
of the twinlead when I build the antenna.

72's de Ken KG0WX

856. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:38:04 UTC
From: dplatt@radagast.org
Message-ID: <vgov9c6sievpc8@corp.supernews.com>
Source record: 113001
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

In article <85ed38d.0307091146.7f73ee0f@posting.google.com>,
Art Unwin KB9MZ <aunwin@insightbb.com> wrote:

>60db is a very high figure. Where does this figure come from.

Visit www.arrl.org, take a look at their hot-news article on BPL near the top of the page, follow the link to the full story, and then look for the link which lets you download the ARRL's 121-page response to the FCC inquiry directly from the FCC's web site.

The ARRL response contains a bunch of the studies that the ARRL did. Some of them are based on standard sorts of theoretical calculations (e.g. NEC2 modelling of power lines as antennas, combined with data on the probable spectral density of BPL signals, with power levels assumed to be at or near the FCC's current Part 15 emissions limits).

If I recall correctly, the response also cites a number of studies of BPL systems which have been performed overseas. These studies showed that serious problems do exist.

>If this is correct wouldn't the VOA,BBC and others nations
>broadcasts be shut out from America?

It seems likely.

> Something is odd here,
>I can't believe that the FCC would intentionally jam all HF
>frequencies from citizen useage.

When money is involved, government bodies have been known to do some very strange things.

It has also become apparent that some very senior FCC officials are woefully ignorant about radio. Political appointees, I suppose.

>If the 60db figure is an exageration to get funds then the
>augument is lost before it starts !

So, go read the studies and decide for yourself. The ARRL has had citations for the overseas studies, and preliminary versions of their own sets of calculations, on-line on their Web site for many weeks.

The ARRL pages point out that previous studies in Japan had led the Japanese government to a similar set of conclusions about the interference potential, and that the Japanese government has concluded that BPL technologies of the sort being discussed _cannot_ be put into

production in Japan because of this unacceptable interference potential.

>Even if it is correct Ham Radio could not do anything about
>it because its members have shown little interest in
>perpetuating the hobby with actual deeds.

Feh. Looks to me as if well over 1000 individual Ham operators took the time to write down their responses to the FCC's NOI and post them on the FCC web site (this isn't counting the numerous duplicate uploads, which I suspect occurred because the FCC's upload server appears to be running on a Commodore 64-grade system and had a nasty tendency to hang during the upload/confirm process).

I spent 3-4 hours crafting my own comments on Saturday, and uploaded them successfully on Monday morning.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

857. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:39:37 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <fuKcnSEYc68X4JGiRTvUqg@crocker.com>
Source record: 113002

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f0c797e_4@corp.newsgroups.com...
> David Robbins wrote:
> > the 'missing' mechanism is the specification of the boundary conditions
at
> > the mismatch point. that is where all the cancellation occurs as you
have
> > acknowledged Cecil. there is no reversal, you just solve for the
voltage or
> > current at the mismatch point, apply that as the boundary condition to
the
> > wave equation in each direction and it all adds up.
>
> Of course it adds up, David. If my bank account is the same at the
beginning
> of the month as at the end of the month, you would argue that it adds up
> and we can assume there were no transactions during the month. I am not
interested
> in being seduced by the steady-state religion and everything simply adding
up. I
> am interested in the underlying transactions. Since the behavior of matter
is
> already known on the macroscopic scale, why do you suppose we spend
billions
> of dollars to find out what is happening on a microscopic scale? Aren't
> you the least bit curious at to what is happening underneath the
steady-state
> simplified model?

geez.... you just don't get it do you. the COMPLETE answer is in the wave equations solved for the boundry conditions at the mismatch point. there can be nothing else, all voltages, currents, fields and waves are accounted for AT THAT POINT! And you have already agreed to that! it has nothing to do with the steady state solution! why do you think i set up that specific case that you glossed over? if you had taken the time to go through each step of it the solution would have been obvious. ALL INTERFERENCE, WAVE REVERSALS, CANCELLATION, WHATEVER YOU WANT TO CALL IT OCCURS AT A SINGLE POINT!

ok, i'm done trying to beat it through your head.... as they say elsewhere.... plonk!

858. Re: Novice: Grid-dipper How-to needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:40:52 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vgovena70kka1e@corp.supernews.com>
Source record: 113003

do a google on the Heathkit HD-1250 and you should get quite a bit..
also check BAMA for the the Boonton 59..
hank wd5jfr
"Frank" <not-for-mail@spammed.domain.virgilio.it> wrote in message
news:ifrogvovansgvskk1trqlmelamctp47grf@4ax.com...
> Can you suggest me a good site
> that explains all measurements
> that a GDO can do?
> Thanks in advance

859. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 20:50:55 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <behv21moj1@news.service.uci.edu>
Source record: 113004

W5DXP wrote:
> Jim Kelley wrote:
>
>> Energy from the LASER does goes somewhere. But it does not go in the
>> direction of destructive interference. It of course goes in the
>> direction constructive interference (or non-interference). However it
>> takes the direct route, rather than the circuitous route you have been
>> lecturing to us about. It's quite apparent there is no such route.
>
>
> It is quite apparent from reading the Melles-Griot web page that there
> is such a route. Please reference the drawing under "thin-film
> interference"
> on the Melles-Griot web page.
>
> | 1/4WL |
> Laser-----air-----|---thin-film---|---glass---...
> | |
> F B
>
> During steady-state, there is a reflection from plane B that travels
> rearward toward plane F. The reflection from plane B has an associated
> power flow vector. What happens to that rearward-traveling power flow
> vector to reverse its direction at plane F? That power flow vector is
> represented by a green line on the drawing under "thin-film interference"
> on the Melles-Griot web page.
>
> http://www.mellesgriot.com/products/optics/oc_2_1.htm

I see the drawing. It's similar to the one in Born and Wolf. Only the
one in Born and Wolf has detailed mathematical descriptions that
accompany the drawing. But I don't find any of the rest of what you say
on the web site (or anywhere else). Sorry OM.

ac6xg

860. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 21:02:03 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <behvmu$n1r$1@news.service.uci.edu>
Source record: 113005

W5DXP wrote:

> Jim Kelley wrote:
>
>> Either put up, or shut up. I don't care which.
>
>
> Well, I've already provided the quote from: "Fields and Waves in
> Communication Electronics", by Ramo, Whinnery, and Van Duzer.

The topic of converstaion was: Poynting Vector Energy Anaylsis of An Impedance Discontinuity.

ac6xg

861. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 21:26:59 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bei15nnmj1@news.service.uci.edu>
Source record: 113007

W5DXP wrote:

> Jim Kelley wrote:
>
>> You've got a forward power of 133.33 watts on the 150 transmission line,
>> and 33.33 coming back. I think it's fair to say you're assuming
>> lossless transmission lines.
>
>
> What if I told you the load is accepting 90 watts? You call that
> a lossless line?

No. But I would call it something other than a good example of wave cancellation. If 33.33 watts isn't at both ends of the 150 ohm transmission line, then your rho at the second interface is unequal to the rho at the first interface, and you don't have an impedance match point and power would be reflected by the match point.

>> Perhaps you could let me know what other real examples I'm
>> overlooking.
>
>
> I already have, Jim, here's another one. Superpose the following:
>
> 50V at zero degrees and 1A at 180 degrees = 50W
> 50V at 180 degrees and 1A at zero degrees = 50W

Non-sequitur. The topic of conversation had been: Examples where "something is actually destroyed and gives up all it's energy."

ac6xg

862. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 21:46:15 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bei29t$o6o$1@news.service.uci.edu>
Source record: 113008

W5DXP wrote:

> Jim Kelley wrote:
>
>> How many times do you think the word 'you' should appear in a technical
>> discussion? Count how many times that word appears in your posts, and
>> compare it with the number of times it appears in my posts.
>
>
> OK, here is one of your typical posts:

Typical? Saying so can't make it true.

>> So as I was saying, Cecil is in a battle for newsgroup points (maybe
>> his ISP
>> is offering a premium). He is primarily concerned with winning. To
>> do so
>> his opponent must lose, of course. The truth is virtually irrelevant to
>> him. The fact that he can produce no physical or mathematical support
>> for
>> his assertions is irrelevant to him in this endeavor. His only hope is a
>> particular interpretation of some prose on a web page. But he must also
>> ignore the facts that support the correct interpretation of the web page.
>> He comoflages this by producing blizzards of insulting posts in hopes
>> that
>> his correspondent might be badgered into submitting to his version of
>> nature - or at least, leaving the discussion so that his aberrant
>> vision can
>> be promulgated unopposed. The longer the process takes, the more
>> insulting
>> and ridiculous his writing becomes.
>
>
> I count 15 references to me and zero technical content.

You were the topic of discussion of this post, Cecil. It certainly
wasn't techincal, but I do think it was accurate.

73, ac6xg

863. Re: Windom as sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 21:59:18 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bei37mpuf1@titan.btinternet.com>
Source record: 113009

"Frank" wrote
> I can install a windom antenna
> only inclinated as sloper.
>
> My question is:
> the impedance is the same
> as the well known horizontal version?

==========
Hi Frank,

As nobody, in an unknown environment, knows what is the impedance of a windom within plus or minus 25 percent, in the midst of such uncertainty any differences due to making it a sloper will be lost in the fog. It can only be measured.

The sloping performance, in some respects, may actually be an improvement. But, of course, neither you nor anybody else will ever know.

It is suggested you go ahead with the sloping version. You will at least be able to confirm that it works satisfactorily. But you will not be able demonstrate that it works OK due to it being a sloper, or even because it closely resembles a windom.

You could obtain some interesting results. Other experimenters unable to erect high horizontal antennas would like to hear.

There are two versions of a windom. The first original version, which goes back many years, has a single-wire feedline offset from the dipole centre. This is modelled in program WINDOM2. Both versions have intentional radiation from the feedline which is an integral part of the antenna. A tuner is essential for both versions when used for multi-band operation.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

864. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:11:47 UTC
From: Paul Vanasse <pvanasse@cox.net>
Message-ID: <Dq0Pa.1044$o86.640@news1.central.cox.net>
Source record: 113010
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Zoran Brlecic" <...WA7AA...@get.lost> wrote in message
news:3F0BAC2C.2040401@get.lost...
> A measly $25 - $100 can help prevent your $5000 equipment from becoming
> an expensive coffee cup warmer.
>
>
> 73 .... WA7AA

Uhhh, this one is even better than Christian Science. What about all the government, military, ship to shore, and navigational use of the HF spectrum? Do you think that the FCC is actually going to allow malicious interference to disrupt these services?

Whether the ARRL is involved or not, and if the statement concerning noise is true, it will never happen.

Save your BPL money and take your girl friend out for a Prime Rib dinner and a night on the town......You'll get a hell of a lot more bang for your buck.

865. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:16:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c965c_5@corp.newsgroups.com>
Source record: 113011

David Robbins wrote:
> geez.... you just don't get it do you. the COMPLETE answer is in the wave
> equations solved for the boundry conditions at the mismatch point.

I doubt that any quantum physicist would agree, David. The wave equations are a tool for solving problems. They don't necessarily bear any resemblance to reality as any quantum physicist will tell you. They certainly don't dictate to reality as you appear to think. I am studying the physics underlying the steady-state model. I apologize if my quest for knowledge threatens your sacred cow.

What does your "COMPLETE" steady-state model say about where the constructive interference energy comes from at a Z0-match point? What does your "COMPLETE" steady-state model say about what happens to the energy when two waves are destroyed by destructive interference during the elimination of reflections?

> ALL INTERFERENCE, WAVE
> REVERSALS, CANCELLATION, WHATEVER YOU WANT TO CALL IT OCCURS AT A SINGLE
> POINT!

That's EXACTLY what I say in my web page article. That's exactly what I have been saying for two years on this newsgroup. What do you possibly hope to gain from setting up a straw man that doesn't resemble anything I have ever said? Did ethics go out of style while I wasn't looking?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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866. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:18:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c96cf_5@corp.newsgroups.com>
Source record: 113012

Jim Kelley wrote:
> But I don't find any of the rest of what you say
> on the web site (or anywhere else).

I can lead you to water, but I cannot make you drink.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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867. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:23:28 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bei4l0sef1@titan.btinternet.com>
Source record: 113013

"'Doc" said
>
> Reg,
> Don't start any 'hanky panky'!

==========

American English and English English converge more closely every passing day. Good to hear it.

And, as usual, your advice is very well received.

868. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:23:55 UTC
From: Harry George <hgg9140@seanet.com>
Message-ID: <m3vfub49vo.fsf@wilma.local>
Source record: 112919

"G.Beat" <now9spamgb@spam.comcast.net> writes:

> "William H. O'Hara, III" <whoohara@yahoo.com> wrote in message
> news:Xns93B27A63AAB83AX2A3DA5M1512AODKAMO@65.100.3.61...
> > Does anyone have some experience with
> > the Ringo Ranger II?
> > I just got one for free and I can not
> > make it work well. The SWR is 1.15 or
> > thereabouts at 147.800. At approx 145.800
> > it would be about 3.0. I am not getting
> > any signal out to the nearby repeater, but
> > I can hear it full loud and quieting.
> >
> > bill
>
> Bill -
>
> Follow the assembly instructions and you should be able to adjust the Ringo
> for the
> dip at your desired frequency. Check that you have GOOD coax (the problem
> that you describe could
> be a coax problem and not the Ringo.
> Many blame the antenna when it real problem is marginal coax --- passable
> at HF frequencies --
> but totally unacceptable at VHF.

What would you consider appropriate coax for VHF? The run is c. 30
feet, though I'm using a 50 foot cable (RG8, UHF couplers). Antenna
is Optek 2m/70cm vertical, and currently performs worse than the
rubber duckie for my VX-5R.

>
> The Ringo ranger II is based on the original W1BX Ringo design. The Ringo
> Ranger II is the current and latest design featuring three 5/8 wave
> radiating elements and an adjustable 1/8 wave phasing stub. This results in
> a very low angle of radiation over your desired coverage area.
>
> You can read the reviews for the ARX-2B
> http://www.eham.net/reviews/detail/2068?ehamsid=83dcc4a851259236dab75c921543a95d
>
> g.beat
> w9gb
> --
> Do not use Reply.
> Reply only through ARRL forwarding service to W9GB

869. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:29:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c9962$1_5@corp.newsgroups.com>
Source record: 113014

Jim Kelley wrote:
>> Well, I've already provided the quote from: "Fields and Waves in
>> Communication Electronics", by Ramo, Whinnery, and Van Duzer.
>
> The topic of converstaion was: Poynting Vector Energy Anaylsis of An
> Impedance Discontinuity.

Yes it was. So what happens to the reflected power Poynting Vector
(that the above reference says exists) when it encounters the
impedance discontinuity?

100W source--50 ohm feedline--+--1/2WL 150 ohm feedline--50 ohm load

The reflected power Poynting vector on the left side of the impedance
discontinuity is zero. The reflected power Poynting vector on the right
side of the impedance discontinuity is 33.33W pointing toward the left.
For about the tenth time, what happens to that reflected power Poynting
vector?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

870. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:34:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c9aaf_5@corp.newsgroups.com>
Source record: 113015

Jim Kelley wrote:
> No. But I would call it something other than a good example of wave
> cancellation. If 33.33 watts isn't at both ends of the 150 ohm
> transmission line, then your rho at the second interface is unequal to
> the rho at the first interface, and you don't have an impedance match
> point and power would be reflected by the match point.

I have told you time after time, that the load impedance doesn't matter
and the feedline length doesn's matter. The losses in the feedline
don't matter. All that matters are the conditions at the match point.
Nothing else matters.

>> 50V at zero degrees and 1A at 180 degrees = 50W
>> 50V at 180 degrees and 1A at zero degrees = 50W
>
> Non-sequitur. The topic of conversation had been: Examples where
> "something is actually destroyed and gives up all it's energy."

Dodging another technical question, I see, and we all know why.
You know that the sum of the two above waves is zero volts and
zero amps, i.e. destruction of the two waves in their direction
of travel. Where does the energy go when the waves go to V=0 and
I=0 in their direction of travel. That's question number 73 that
you have refused to answer.

It seems that everything you don't know the answer to is a
non-sequitur. I fully understand your attitude.
--
73, Cecil http://www.qsl.net/w5dxp

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871. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 22:37:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0c9b6c$1_5@corp.newsgroups.com>
Source record: 113016

Jim Kelley wrote:
> You were the topic of discussion of this post, Cecil. It certainly
> wasn't techincal, but I do think it was accurate.

An ethical person would apologize. How about you?
--
73, Cecil http://www.qsl.net/w5dxp

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872. Re: Buried feedline suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 23:27:54 UTC
From: Sylvan Butler <Znospam+noZs_0307@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbgp97q.ruq.Znospam+noZs_0307@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 113017

On Tue, 01 Jul 2003 19:33:20 -0500, funkbastler <funkbastler@yahoo.com> wrote:
> Tie a lightweight cord to a wadded up kleenex or two and suck
> it through the pipe with a shop vac. Then use that cord to

I used one of those plastic shopping bags in my 2" conduit.

sdb

--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral
busybodies. The robber baron's cruelty may sometimes sleep, his
cupidity may at some point be satiated; but those who torment us for our
own good will torment us without end, for they do so with the approval
of their consciences. -- C. S. Lewis

873. Re: Buried feedline suggestions - Thanks

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-09 23:36:50 UTC
From: Sylvan Butler <Znospam+noZs_0307@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbgp9oi.ruq.Znospam+noZs_0307@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 113018

On Thu, 03 Jul 2003 09:55:57 -0400, Bill Ogden <ogden@us.ibm.com> wrote:
> IIRC, thinnet was RG-59 (73 ohms). Good stuff for dipoles.

RG-59 is commonly used for TV leads, by those too cheap to use RG-6.
Perhaps it was also used for token ring?

RG-58 (50 ohm) was used for thin ethernet.

sdb

> wess@gtii.com wrote:
>> (new stuff). Nothing has ever come down. I think I remember thinnet
>> being 50ohm so maybe a piece or three might come down if it has radio
>> use.

sdb

--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral
busybodies. The robber baron's cruelty may sometimes sleep, his
cupidity may at some point be satiated; but those who torment us for our
own good will torment us without end, for they do so with the approval
of their consciences. -- C. S. Lewis

874. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 00:00:17 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgpb6c3irfr2a3@corp.supernews.com>
Source record: 112920

Gosh Cecil.
That's pretty much what I've seen with a little field strength meter on the hood over the last 40 years of mobiling..
And certainly the biggest, center loaded, resonant, matched antennas are vastly better than a non-resonant whip and a tuner.
All this second-guessing about shootouts will never cause a tuner-and-a-whip to beat a 13 foot resonant monster.
Personally I think competition makes folks think about their radio installations.
That's a good thing.
73
H.
NQ5H

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message news:3f0c35c7$1_8@corp.newsgroups.com...
> G.Balinski wrote:
>
> > Has anyone put together a recent test of mobile HF antennas? I think
> > that I remembered something in past years called a "shoot out" or something
> > like that. As far as I remember though, it was as much of a test of the
> > installation of the antennas as the antennas themselves as different
> > vehicles and install methods were used. It would be nice to see on
> > objective comparison of the various units like the Hustler series, Ham
> > Stick, all the variants of the screw driver antennas, the Texas Bugcatcher,
> > etc. all mounted on the same platform with the same grounding system, etc.
> >
> > Anyone seen such a test ?
>
> Here it is in a nutshell for 75m. Bugcatchers with large top hats and
> screwdrivers with large top hats are close to equal at the top of the heap.
>
> Taking away the top hat costs about 2 dB. ~30-40% loss of power
>
> Hustler and Outbacker are about 9 dB down from the top. ~85% loss
>
> Hamstick is about 12 dB down from the top. ~95% loss
>
> 11.5' whip is about 13 dB down from the top. A 102" whip

> would be even worse.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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875. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 00:17:35 UTC
From: Paul Vanasse <pvanasse@cox.net>
Message-ID: <zg2Pa.1932$o86.548@news1.central.cox.net>
Source record: 112921
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
news:85ed38d.0307091146.7f73ee0f@posting.google.com...
> 60db is a very high figure. Where does this figure come from.
> If this is correct wouldn't the VOA,BBC and others nations
> broadcasts be shut out from America? Something is odd here,
> I can't believe that the FCC would intentionally jam all HF
> frequencies from citizen useage.

Its the new ARRL policy. In the past they tried to get you to give them your money based on shear blind loyalty. Now'a'days they want to scare you into giving them the bucks. Its the old "If you cant coax them, scare the crap out of them" fundraising policy. The Catholic Church has used this for years and years.

Just think, when this Echo-link nonsense takes over (ala the ARRL's and their "Hinternet"), we'll all have $2000 CB radios.....I know I cant wait!

876. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 00:51:20 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <AlidncwgjcB2JZGiXTWJjw@ctc.net>
Source record: 112922

> What would you consider appropriate coax for VHF? The run is c. 30
> feet, though I'm using a 50 foot cable (RG8, UHF couplers). Antenna
> is Optek 2m/70cm vertical, and currently performs worse than the
> rubber duckie for my VX-5R.
>

For 50 feet of coax almost any of the coax that is the size of rg-8 should
be ok. You could spend a little more and get some of the 9913 type or
lmr-400.
Even the rg-8x might not be too bad for 50 feet for vhf.

877. Re: Telrex antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 01:16:51 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f0cbfee_3@news1.prserv.net>
Source record: 112923

I can tell you a half-dozen who have gone broke and disappeared in the last 20 years, some of which had products which are missed and needed. The number you ask for is an independent variable. Pick a date and time, and it might have a rational answer. A couple hours later it will be a different number.

--
Crazy George
Remove NO and SPAM from return address
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:beg7qp$cp2$1@titan.btinternet.com...
> Does anybody know how many 'get-rich-quick' antenna manufacturers there are
> in the USA ?
>
>

878. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 01:36:13 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <hq3Pa.22108$N7.2720@sccrnsc03>
Source record: 112924

"Harry George" <hgg9140@seanet.com> wrote in message
news:m3vfub49vo.fsf@wilma.local...
> >"G.Beat" <now9spamgb@spam.comcast.net> writes:
> >
> > Bill -
> >
> > Follow the assembly instructions and you should be able to adjust the
Ringo
> > for the
> > dip at your desired frequency. Check that you have GOOD coax (the
problem
> > that you describe could
> > be a coax problem and not the Ringo.
> > Many blame the antenna when it real problem is marginal coax ---
passable
> > at HF frequencies --
> > but totally unacceptable at VHF.
>
> What would you consider appropriate coax for VHF? The run is c. 30
> feet, though I'm using a 50 foot cable (RG8, UHF couplers). Antenna
> is Optek 2m/70cm vertical, and currently performs worse than the
> rubber duckie for my VX-5R.

RG-8/U is a generic designation these days - and I rarely believe the specs
on any cable
listed with this designation.
During the CB craze in the 1970s, we set up a bench measurement
for 100 foot rolls of RG-8/U coax (e.g. Columbia, Alpha, Belden, no name,
foamX)
Finding quality and consistency were problematic.

The most important characteristics that I look for are:

Known manufacturer (consistent quality & specs)
Known spec or model number (e.g. Belden number)
Good shield coverage
For VHF -- less than 1.7 db attenuation / 100 feet at 150 MHz
Correctly installed PL-259 (when using the UHF connectors) or N connector
(preferred)

9913 and LMR-400 provide a small improvement for 50 feet of coax - 0.5 db
max

w9gb

879. Re: Cushcraft Ringo Ranger II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 01:41:13 UTC
From: dplatt@radagast.org
Message-ID: <vgph1pc2nvb462@corp.supernews.com>
Source record: 112925

In article <m3vfub49vo.fsf@wilma.local>,
Harry George <hgg9140@seanet.com> wrote:

>What would you consider appropriate coax for VHF? The run is c. 30
>feet, though I'm using a 50 foot cable (RG8, UHF couplers). Antenna
>is Optek 2m/70cm vertical, and currently performs worse than the
>rubber duckie for my VX-5R.

That sure sounds as if something is amiss. Full-size RG8 cable ought to have tolerably low losses on 2 meters, and even on 70 cm, for that sort of a length. It'd be better to cut it down to length, of course, but I wouldn't think that it'd be _that_ bad even on 70!

First thing I'd suggest, is do a trial installation of a different antenna at the end of that coax, and see if the signal gets any better. If it does, then your antenna has problems. If not, then the coax is bad.

One definite problem with PL-259 connectors is that they are by no means waterproof-by-design. If you've had that antenna up through one or more significant rainstorms, and if you didn't install extra waterproofing (e.g. Coax Seal, silicone sealant, etc.) over the whole connector area, then you may have water infiltration into your coax... the braid can easily "wick up" moisture, and you can end up with water-soaked insulation and with water running down all the way into your shack. I tend to prefer N connectors for this reason among others.

I've got a homemade Copper Cactus two-arm J-pole, at the end of about 30' of RG-8 (the full-size, not the "RG-8 mini" aka RG-8X) and both bands work very well indeed. In fact, it's almost unusable with my VX-5 because the strong signals overdrive the VX-5 RF section and I end up with a lot of intermod from local paging transmitters.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

880. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 01:44:51 UTC
From: richardharrison@webtv.net
Message-ID: <27346-3F0CC513-85@storefull-2311.public.lawson.webtv.net>
Source record: 112928

Cecil,
W5DXP wrote:
"Steven Best says that total re-reflection is a fallacy. Do you disagree with Dr. Best?"

I`ll play along. On this issue, Dr. Best may be mistaken. Individual testimonies may not be very reliable, but large numbers become a preponderence of evidence. Numbers of operators claim to be able to reach near 1:1 SWR at their transmitter outputs while having greater SWR`s in other parts of their transmission systems. I believe them. It agrees with my own experience. The 1:1 SWR at the transmitter means reflections were stopped short of their return to the transmitter. Re-reflection at the match point is therefore very near total.

I have similar practical experience that transmitter systems can be adjusted to reject returnng reflections in many cases. Reg used to explain such rejection by an assumed very high transmitter output impedance, if my recollection is correct. If I misquoted Reg in any way it is unintentional. I disagree with the common opinion that classical plate resistance has much to do with transmitter output impedance. In my opinion, output conductance is proportional to the switched-on time of the final amplifier. Conduction angle controls impedance, which is much lower than plate resistance.

So why doesn`t the transmitter take back reflected power? The impedance bump is needed as a catalyst to cause a re-reflection. The re-reflection is as my professors said over 50 years ago due to the fact that the transmitter already has a surplus of energy. Energy always flows on a line from a surplus to a dearth, and not vice versa.

A tapering charge battery charger undergoes an amperage subsidence as a battery becomes charged. Even were the charger another battery as in the case of a jump-start, energy doesn`t flow from a lower potential battery to the higher potential battery.

A-C sources behave much the same. The greater-magnitude source outsupplies the other and determines the direction of current flow when the sources are facing-off against each other.

Best regards, Richard Harrison, KB5WZI

881. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 02:05:55 UTC
From: Dave Holford <holford@sympatico.ca>
Message-ID: <3F0CCA03.7FDE34A2@sympatico.ca>
Source record: 112927
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

JJ wrote:
>
> Dave Platt wrote:
>
> >
> > It has also become apparent that some very senior FCC officials are
> > woefully ignorant about radio. Political appointees, I suppose.
>
> Most of the FCC senior officials are lawyers who don't have a clue
> about the technical side of radio. They wouldn't know a door knob
> from a transistor. Come to think of it, a know lot of hams that
> don't either.

Maybe, but IIRC the FCC, along with the FAA, FEMA etc. etc. operate
extensive HF communications systems. It seems unlikely that a source of
such serious potential interference to their own communications would be
authorized?

Dave

882. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 02:09:22 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030709220922.22018.00000094@mb-m02.aol.com>
Source record: 112926

>Personally I think competition makes folks think about their radio
>installations.
>That's a good thing.
>73
>H.
>NQ5H

Most sointenly!
First, we want to know what antenna produces most signal.
Then we want to mount it on the car that produces most signal.
(Then you put power to it and hellllloooo rrrrradio!)
Shootouts have a place and purpose, wish there was one on the Right Coast.
Competition is the mother of invention and proves beyond the Cecil's Math what energy is radiated and what is conserved in sleepy, while standing waves.

Yuri, K3BUm

883. Re: Will this work?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 02:52:08 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <52lpgv0a4d30en2rv8m3dj708ca288noi8@4ax.com>
Source record: 113060

On Wed, 09 Jul 2003 06:50:25 GMT, "Batman" <kg0wx@yahoo.com> wrote:

>
>I now want to build my own using Archer rotor cable
>for the elements (18 ga.) and 300 ohm twinlead for
>the transmission line. I do not know how long a line
>I will need.
>
>What I'm concerned about is the VSWR and RF handeling
>capacity of the RS heavy duty 300 ohm line.......

If you're worried about the RS line, the Wireman also has 300- &
450-ohm lines rated for medium or high power levels.

Bob
k5qwg

>
>Opinions?
>
>72's de Ken KG0WX
>

884. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 02:54:38 UTC
From: richardharrison@webtv.net
Message-ID: <20398-3F0CD56E-14@storefull-2312.public.lawson.webtv.net>
Source record: 112929

Cecil, W5DXP wrote:
" ***Before they cancel***, they will burn a hole in the black paper proving that they contain energy."

Anyone who can obtain a copy of Arnold B. Bailey`s "TV and Other Receiving Antennas" can turn to page 158 to see a diagram of how waves interfere. Interaction between components of the same signal from two sources are shown in the figure to produce a combined signal which varies regularly with the height above the earth. This has a corresponding effect on the signal received by an antenna placed at a particular altitude.

The average signal at all altitudes is the same as if there was no interference. But, that is because the layers of strengthened signal are exactly offset by the layers of reduced signal strength.

Best regards, Richard Harrison, KB5WZI

885. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 03:28:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0cdf88_8@corp.newsgroups.com>
Source record: 112930

Richard Harrison wrote:
> A-C sources behave much the same. The greater-magnitude source
> outsupplies the other and determines the direction of current flow when
> the sources are facing-off against each other.

Let's say we have two sources each equipped with a circulator and load resistor. We'll call such a source an SGCR (Signal generator equipped with a circulator and load). We set up the following experiment.

100W SGCL#1------------50 ohm lossless coax-----------50W SGCL#2

Seems to me that the 100W from SGCL#1 will flow unopposed and dissipate in SGCL#2's circulator load resistor. Seems to me that the 50W from SGCL#2 will flow unopposed and dissipate in SGCL#1's circulator load resistor.

In other words, the forward wave has no effect on the reflected wave and vice versa. There is no face off.

Now consider a normal system.

100W SGCL----------50 ohm lossless coax----------291.5 ohm load

50W will be reflected from the load and flow unopposed back to the circulator load resistor. There is no face off. Unless there is an impedance discontinuity, forward waves have no effect on reflected waves.
--
73, Cecil http://www.qsl.net/w5dxp

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886. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 03:30:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0ce013_8@corp.newsgroups.com>
Source record: 112931

Yuri Blanarovich wrote:
> Competition is the mother of invention and proves beyond the Cecil's Math what
> energy is radiated and what is conserved in sleepy, while standing waves.

:-) Which reminds me. At the shootouts we subtracted reflected power
from forward power to yield the power to the antenna. If reflected power
doesn't exist, why did we subtract it?
--
73, Cecil http://www.qsl.net/w5dxp

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887. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 03:33:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0ce0b7_8@corp.newsgroups.com>
Source record: 112932

Richard Harrison wrote:
> Anyone who can obtain a copy of Arnold B. Bailey`s "TV and Other
> Receiving Antennas" can turn to page 158 to see a diagram of how waves
> interfere.

I assume it applies to waves interfering in 3D space which is quite different
from waves interfering in the 1D space of transmission lines.
--
73, Cecil http://www.qsl.net/w5dxp

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

888. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 04:00:00 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <4x5Pa.188320$_w.8144205@twister.southeast.rr.com>
Source record: 112933

Well be it right or wrong here is what I did.

Installed an Al pop rivet in the tubing,

Soldered the tubing in place with some stuff called Alloy 5. I got it a
couple of years ago to fix a radiator, worked good but forgot I had it

Tapped the rivet for a #6 screw and applied a little Noalox I got from work

Weather proofed it with vynil and rubber stretch tape.

We will see How t does.
"Jimmy" <Gfender@carolina.rr.com> wrote in message
news:n7ZNa.238754$jp.6428636@twister.southeast.rr.com...
> Whats the best way to attach a solder lug to aluminum tubing. I dont want
ot
> pop-rivet it on because that is too hard to get off and sheet metal screwa
> always come loose. I was thinking about putting in a pop rivet then drill
> and tap the rivet.
>
>

889. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 05:08:16 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F0CF4BC.2CC45065@att.net>
Source record: 112934
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Art Unwin KB9MZ wrote:

> 60db is a very high figure. Where does this figure come from.

Maybe the noise floor is pretty low at WA7AA! :0)

890. BPL interference - reply comments - YOUR ACTION REQUIRED

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 06:11:18 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307092211.4ef1f018@posting.google.com>
Source record: 112935

The BPL NOI has now moved to the second stage where reply comments can be submitted to the FCC.

Below are links to the comments from the cretins who want to flood our shortwave with interference.

IMPORTANT to read and tell the FCC what is wrong with their comments - many dismiss the interference issue without any data.

A huge amount of data has been submitted to the FCC that proves beyond all reasonable doubt that BPL is a gross polluter but more submissions are needed.

Please post comments and thoughts to this thread to provide ideas for other submitters.

Cinergy
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284577

PPL Telecom
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284575

Current Technologies
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284570

Electric Broadband
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284566

United Power Line Council
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284754

Southern Linc
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284561

Amperion
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284558

xG Technology, LLC
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284528

Progress Energy, Inc
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284481

Power Line Communications Association
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284549

HomePlug Powerline Alliance
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284554

POWERWAN, INC
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284548

Ameren Energy Communications Inc
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284552

http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284553

Ambient Corporation
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284539

Main.net Communications Ltd
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284546

HomePlug Powerline Alliance
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284554

Intellon Corporation
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284532

More information is here;
http://www.arrl.org/news/features/2003/06/19/2/?nc=1

The FCC now is accepting electronically filed comments via its
Electronic Comment Filing System (ECFS).

http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi

In the "Proceeding" field, enter "03-104" and complete the required
fields. Comments may be typed into a form or you may attach a file
containing your comments.

891. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 06:14:11 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <fn0qgv4lu058bt2bn3j65mjv6cipdbtga6@4ax.com>
Source record: 112985

On Wed, 09 Jul 2003 12:44:55 -0500, 'Doc <w5lz@cwis.net> wrote:

>
>
>Zoran,
> Exactly how would my contribution be used to fight
>'BPL'? Postage, salaries, ISP changes?
> 'Doc

From the arrl's 2-color letter to me on this subject, the money goes
to...

. monitor BPL comments being filed with the fcc

. legal counsel preparing response to the fcc's "notice to
inquiry" to gather public comments on BPL

. arrl lab is preparing tests to show how BPL would adversely
affect amateur radio

Bob
k5qwg

892. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 07:08:25 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F0D110B.6030105@get.lost>
Source record: 112936
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Zoran Brlecic wrote:

--- --- ---

Out of the 12 follow-up messages to date:

5 are neutral or irrelevant

4 are defeatist (can't do anything, who cares, it's lost anyway)

2 are negative (never gonna happen, not gonna be as bad)

1 is positive (already filed comment)

One babbled about a "slur on the folks who live in rural USA",
forgetting that the vast majority of Internet traffic is comprised of
illegal mp3 downloads, Internet phone traffic, mass spam e-mail and porn
browsing, i.e. pure garbage traffic. Did I insult anyone? I really don't
give a flying fuck. I want my ham radio.

More than one wondered about the reliability of the 60 dB figure,
stating that, if it is correct, other commercial users would be
affected. Here's why they won't be:

To begin with, unlike amateur radio, none of the other radio services
are weak signal users. Whereas in ham radio, DX-ing is more than a rule
than an exception, commercial services aim for reliable, strong signal
communication. Therefore, while even as little as a 20 dB noise increase
(low enough for you, Art?) effectively prevents SW ham radio usage,
commercial users will barely notice it.

An overwhelming majority of SW ham radio stations are located in urban
areas with a high density of low and medium voltage power grids.
Military installations, otoh, are typically found in isolated
rural/suburban surroundings where they have a full control over (not)
allowing BPL into the bases. Btw, high voltage cross-country power lines
will not carry BPL, remember? There is fiber optic already in place for
that.

BPL is going to be delivered all the way to your power outlet, as well
as to your next-door neighbor's power outlet, and to every single power
outlet of every single resident in your city or town. Think you have a
hard time from your neighbor's electric toothbrush pwr supply? You ain't
seen nothing yet.

FAA does not use SW, afaik, so they couldn't care less. Ship to shore? What ship to what shore? They use satellites. Navigational? Nobody navigates downtown Los Angeles or in Manhattan. Any SW navigation is done thousands of miles away from the power lines. Who's left? Some governmental agencies that will solve a problem by increasing their budgets to allow for stronger transmitters and longer antennas?

The only way I see this being resolved is if there's enough RFI obliterating all of Rush Limbaugh's AM channels. Only then will FCC listen, because they'll have to.

That doesn't mean we have to go down without a fight. In order to fight, ARRL, the *only* American ham radio organization, needs money. However, if you'd rather cut off your nose to spite the face and pretend a turd is not in the punch bowl, it's your funeral...

73 .... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

893. Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 07:15:44 UTC
From: MikeN <mnewman@clear.net.nz>
Message-ID: <b64qgv876u17b3ilo48jsmuo06jq41g0jf@4ax.com>
Source record: 112937

Hi all.

I've got a 70 cm Yagi which is to be matched to a 50ohm feedline, feeding a 70cm repeater (5MHz split).

The Yagi has an impedance of 12.7+j0.8 (so 4NEC2 tells me).

What are appropriate matching systems to give me the best matching so that the Tx-Rx duplexer peforms up to its bandpass and notch specifications.

Thanks

MikeN

894. Re: Novice: Grid-dipper How-to needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 07:47:04 UTC
From: Frank <not-for-mail@spammed.domain.virgilio.it>
Message-ID: <gf6qgvo3cgo6h5nmkh56tjrjci7df38pgt@4ax.com>
Source record: 112938

On Wed, 9 Jul 2003 15:40:52 -0500, "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>do a google on the Heathkit HD-1250 and you should get quite a bit..
Which software/plugin do you use to view these djvu file on bama?
I'm using djvu plugin for irfanview but i get errors:
"Decode error - unknown format file"

thanks again

895. Re: HF Mobile Antenna Comparisons

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 08:31:04 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307100031.39745d2b@posting.google.com>
Source record: 112939

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message

>
> Around 1970, some guys from Argonne Labs, in an effort to show us the error
> of our ways, brought down equipment to a "160 Meter Reunion" and set up a
> measurement program. About 75 people were there. On the "Q" question, the
> comparison was between similarly laid out center/top loaded antennas. One
> had a big open wound, heavy wire, spaced turn coil with a 8" diameter and a
> 1:1 length/diameter ratio. The other had a 1" diameter close wound coil on a
> PVC form using #20 wire. The length/diameter ratio was over 20:1. It was
> covered with shrink tubing.
>
> The measured worst case scenario (of any HF band) was on 160. The difference
> was .3db. That's 3 tenths. We were all shocked and immediately agreed that
> the test had to be flawed...even those of us that thought the LO-Q coil was a
> better deal. It just couldn't be that close.

I wonder how much ground loss they had...
>
> That test was modified and tried over and over. I know of 5 more run between
> 1972 and 1992....all with the same results. Personally, the big beasty open
> HI-Q coils look like "real radio" to me. There's just no real reason to use
> them unless you prefer pinpoint bandwidth and terrible "proximity" problems.
> We reconfirmed the numbers in the Fletcher Program.
>
> The reason the difference is small is that the current diminishes so rapidly
> in the first few turns of lumped inductance, whether Hi-Q or LO-Q, and
> therefore only the loss in those turns is being compared. The same is true
> for inductively top loaded base station verticals. Loss in the coil is
> insignificant. Most calculations to the contrary made in texts, articles and
> some modeling programs are based on the current being equal throughout the
> coil. This is not true. Of course, most mentions of this loss are not
> quantified at all.

Again, I also wonder about ground loss. If the amount of ground loss
is high, it's ratio against coil loss is higher. A lossy coil might
not be much of an impact. But a low loss ground system would make a
lossy coil show up more being the ground loss is a lower part of the
total.
>
> On the other hand, the position of the coil in the available vertical mast
> means everything. Here's the bottom line: All other factors being the same,
> the inductively loaded vertical with the longest mast between feed point and
> lumped inductance wins the radiated field strength contest.

I agree with this part for most cases.

This means that
> a standard Hustler setup is louder than any "Screwdriver" or "Bug Catcher"
> unless they have more than
> 4½' of mast below the coil.

But, this is just pure finely ground sandwich meat. In the cases where
I tested, I never saw a hustler coil even approach my homebrew coil or
any other equal size coil for that matter, and at that time, my
homebrew coil was only 2 ft above the base. I tested the hustler on a
3 ft solid mast. It was waaaaayyy down. But they also use those stupid
short stingers, and hence use more coil windings than they really
should. Hustler is a special case... Also, note the test results
Cecil just posted...His results using the hustler seem to match mine.

We confirmed that in Fletcher, too. As an
> example, for 80M, a 9ft. top loaded mast was down 20.5db from a full quarter
> wave, both measured on the test stand. The base loaded 9 ft. mast was
> 36.5db down, a difference of 16db. BTW, the same mast loaded with a Smart
> tuner or Icom AH-4 was 44.5db down. Results are worse on 160.

I assume the 9 ft top loaded ant was the hustler...??? I notice they
don't mention the center or near top loaded bugcatcher coil in
comparison...Sure, a base load is going to be down...

> Seems that Hustler tried to "match" the low band resonators by introducing some
> extra loses in their loading coils. I rewound the resonators with 1/4" copper
> tubing (20 and up) but in view of W9UCW findings maybe there is good compromise
> between ugliness and performance.

I think the 1/4 inch tubing is overkill. Really , I think anything
over about 2 mm wire size is starting to be overkill considering the
increase you get. But, I am not a fan of hustler coils. I won't use
them. All the antennas I've made using those coils were "dummy loads
on a stick". That includes the 80-10 multiband vertical I tried that
used those resonators.
I've been thinking about the disparity some seem to see in coils. I'm
starting to think it's differences in ground loss. The less the ground
loss, the more a lossy coil will show itself. Enough loss, anything
might seem ok... MK

896. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 10:35:58 UTC
From: kd1@sympatico.ca
Message-ID: <3F0D418E.47F2E15A@sympatico.ca>
Source record: 112940

W5DXP wrote:
>
> Let's say we have two sources each equipped with a circulator and load
> resistor. We'll call such a source an SGCR (Signal generator equipped
> with a circulator and load). We set up the following experiment.
>
> 100W SGCL#1------------50 ohm lossless coax-----------50W SGCL#2
>
> Seems to me that the 100W from SGCL#1 will flow unopposed and
> dissipate in SGCL#2's circulator load resistor. Seems to me that
> the 50W from SGCL#2 will flow unopposed and dissipate in SGCL#1's
> circulator load resistor.

May I modify your experiment slightly? Change SGCL#2 to produce 100W.
Restating your explanation for the new experiment:
"Seems to me that the 100W from SGCL#1 will flow unopposed and
dissipate in SGCL#2's circulator load resistor. Seems to me that
the 100W from SGCL#2 will flow unopposed and dissipate in SGCL#1's
circulator load resistor."

Let's also make the 50 ohm lossless coax long enough that we can
find a voltage maximum. At this voltage maximum the current is 0,
always.
Assuming that P = V x I, the power is 0, always.
This seems to be at odds with explanation that SGCL#1's power is
dissipated in SGCL#2's circulator load resistor since there is no
energy flowing at the voltage maximum.

The obvious (and probably controversial) answer to this
inconsistency is that the power dissipated in CL#1 originates
in SG#1. Similarly for SGCL#2.

To further the experiment slightly, whenever a conductor in a circuit
has 0 current, the conductor can be cut without changing a thing.

Let's cut the coax at the voltage maximum (where the current is 0).
Nothing changes. The voltage and currents remain the same every
where. The powers remain the same everywhere, and yet there is no
longer a path from SG#1 to CL#2. The power being dissipated in CL#1
must be originating in SG#1.

Comments and corrections invited.

...Keith

897. Re: Novice: Grid-dipper How-to needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 10:54:39 UTC
From: carkenord@juno.com
Message-ID: <4346b55e.0307100254.37a37776@posting.google.com>
Source record: 112941

> Can you suggest me a good site
> that explains all measurements
> that a GDO can do?
> Thanks in advance

There is a lot of good and interesting stuff at the following site:

http://www.qsl.net/n4xy/gdos.html

Good luck. Lee Carkenord KA0FPJ

898. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 11:00:18 UTC
From: Paul Vanasse <pvanasse@cox.net>
Message-ID: <6HbPa.3850$o86.559@news1.central.cox.net>
Source record: 112942
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Zoran Brlecic" <...WA7AA...@get.lost> wrote in message
news:3F0D110B.6030105@get.lost...
> Zoran Brlecic wrote:
>
> --- --- ---
>
> Out of the 12 follow-up messages to date:
>
> 5 are neutral or irrelevant
>
> 4 are defeatist (can't do anything, who cares, it's lost anyway)
>
> 2 are negative (never gonna happen, not gonna be as bad)
>
> 1 is positive (already filed comment)
>

I don't think we need a conclusionary synopsis Zoran, I believe just about everyone here knows full well how to read.

Did you ever stop and consider that because the responses to your original post were such, that perhaps the whole BPL matter is the usual ARRL exacerbated hyperbole?.....In the old'en days they called it "Much ado about nothing".

899. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 13:01:17 UTC
From: richardharrison@webtv.net
Message-ID: <19105-3F0D639D-229@storefull-2314.public.lawson.webtv.net>
Source record: 112945

Cecil, W5DXP wrote:
"50W will be reflected from the load and flow unopposed back to the circulator load resistor. There is no face-off. Unless there is an impedance discontinuity, forward waves have no effect on reflected waves."

A 291.5-ohm load on a 50-ohm Zo produces a reflection coefficient of 0.707, and the rest follows suit.

Best regards, Richard Harrison, KB5WZI

900. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 13:05:08 UTC
From: Mikael Mortensen <mikael@danbbs.dk>
Message-ID: <3f0d6470$0$13242$edfadb0f@dread15.news.tele.dk>
Source record: 112943

Hi!

It goes from 25.165 to 29.695 Mhz..

Regards
Mikael

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:_aqdnToT2vY0zZaiU-KYvg@comcast.com...
> I don't think he means 10 m. Said 27-28 MHz.
>
> Tam/WB2TT
> "G. Doughty" <nightowls627@aol.comnojunk> wrote in message
> news:20030708161826.29132.00000033@mb-m15.aol.com...
> > I am using a homebrew dipole (is there any other way?!) and it works
quite
> > well. Although I cannot transmit and propagation qualities are waning,
I
> pick
> > up quite a few conversations from where I am in eastern Va. (Fla. and
West
> > Virginia and some spanish chatter as well.) I used 28.475 as the freq
for
> the
> > math. I am using an htx-10 with the antenna in the attic and get 1.5:1
on
> > 29.699.
> >
> > 73
> > G. Doughty
> > KI4BBL
>
>

901. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 13:17:13 UTC
From: Phil <philip.bradway@verizon.net>
Message-ID: <tHdPa.5559$78.4458@nwrdny03.gnilink.net>
Source record: 112944

Try a T match. The ARRL antenna hand book shows dimensions under the section
on K1FO Yagis.

Phil, KB2HQ

"MikeN" <mnewman@clear.net.nz> wrote in message
news:b64qgv876u17b3ilo48jsmuo06jq41g0jf@4ax.com...
> Hi all.
>
> I've got a 70 cm Yagi which is to be matched to a 50ohm feedline,
> feeding a 70cm repeater (5MHz split).
>
> The Yagi has an impedance of 12.7+j0.8 (so 4NEC2 tells me).
>
> What are appropriate matching systems to give me the best matching so
> that the Tx-Rx duplexer peforms up to its bandpass and notch
> specifications.
>
> Thanks
>
> MikeN

902. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 14:35:30 UTC
From: richardharrison@webtv.net
Message-ID: <18785-3F0D79B2-176@storefull-2313.public.lawson.webtv.net>
Source record: 112948

Keith wrote:
"Assuming that P = VxI, the power ia 0, always."

Power is not zero on a line with a complete reflection because energy is moving at a joules per second rate. Power delivered to the line may be near zero in the steady-state.

There is no variation in power flow in either direction on a lossless line. SWR is an apparition. VxI in only one direction gives the power in that direction. A directional coupler is used to enable a proper in-line determination.

In Cecil`s example of senders feeding matched loads from opposite ends of the line, there are no reflections, but a directional coupler may be needed to separate energy in a particular direction.

Keith is correct that for some purposes the second of Cecil`s equal-power sources at opposite ends of the line could be replaced by a complete reflection. The power returning to the first source circulator would be the same as that from the second source, but would result from reflection.

Current and voltage only go to zero in an SWR pattern produced by a complete reflection. A zero-point in an SWR pattern does not indicate zero power flow in the line, though it may indicate zero power delivered to a load.

Zeros in voltage and current SWR waveforms are 180-degrees out-of-phase with each other. When there is a null in one pattern, all the energy is residing in the field represented by the other waveform. The energy did not disappear. So, you can`t disrupt a transmission line at a zero without effect in most cases.

Best regards, Richard Harrison, KB5WZI

903. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 14:43:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0d7dcf_3@corp.newsgroups.com>
Source record: 112947

kd1@sympatico.ca wrote:
> Assuming that P = V x I, the power is 0, always.
> This seems to be at odds with explanation that SGCL#1's power is
> dissipated in SGCL#2's circulator load resistor since there is no
> energy flowing at the voltage maximum.

Nope, a directional coupler can still separate out the forward
and reflected waves even at voltage and current nulls. Remember,
those voltage and current nulls are only a 'dl' in length as 'l'
approaches zero. Superposition of two waves traveling in opposite
directions has no effect on the individual waves. There are no
reflections except at an impedance discontinuity point which
doesn't exist in the example.

> Let's cut the coax at the voltage maximum (where the current is 0).
> Nothing changes.

Of course something changes. You have introduced an impedance discontinuity
where none existed before. The forward wave is 100% reflected at
the cut point and of course, the reflected power is dissipated in
the source's circulator load resistor. If you make the two sources
one Hz different in frequency, you can easily observe what happens
when you cut the line. Otherwise, it's the old steady-state Catch-22
coverup in action. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

904. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 14:49:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0d7f13_3@corp.newsgroups.com>
Source record: 112949

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "50W will be reflected from the load and flow unopposed back to the
> circulator load resistor. There is no face-off. Unless there is an
> impedance discontinuity, forward waves have no effect on reflected
> waves."
>
> A 291.5-ohm load on a 50-ohm Zo produces a reflection coefficient of
> 0.707, and the rest follows suit.

Yes, but there is no face off between forward waves and reflected waves. Reflected waves flow unopposed back to the circulator load resistor where they are dissipated. Forward waves can affect reflected waves only at an impedance discontinuity where reflections and re-reflections can occur. Reflected waves can indeed flow "back up the fire hose" unopposed by the forward waves.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

905. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 15:00:51 UTC
From: Bill Ogden <ogden@us.ibm.com>
Message-ID: <3F0D7FA3.4CEFB384@us.ibm.com>
Source record: 112946
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

>
>
> Maybe, but IIRC the FCC, along with the FAA, FEMA etc. etc. operate
> extensive HF communications systems. It seems unlikely that a source of
> such serious potential interference to their own communications would be
> authorized?
>

These systems, as well as military HF systems, usually operate in relatively
strong signal
environments. A lot of ham HF operation (especially DX chasers like myself)
try to work with
very low signal levels. Hams are possibly the only HF users in this
category. It seems likely that
the proposed BPL operation could substantially hamper weak-signal operation
while not really
impacting strong-signal operation.

I think the threat is quite real --- an yes, I did file a comment (although
it was a rather small one).
And yes, I am sending a contribution to the ARRL---it seems they are
fighting as best they can.

Bill
W2WO

906. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 15:23:05 UTC
From: numeric <numeric@worldnet.att.net>
Message-ID: <txfPa.48273$0v4.3274574@bgtnsc04-news.ops.worldnet.att.net>
Source record: 112950

Thanks to all those who replied; the suggestions have been helpful. Looks like its going to hard to beat the vertical dipole.

907. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 16:05:18 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <NJCcnR1CKP8gE5CiXTWJig@comcast.com>
Source record: 112951

The ARRL Antenna Book (19th ed.) has an interesting design on p 6-32 for a 40M sloper that could easily be scaled to 20M. Measurements show the 40M version providing up to 20dB f/b and about 4 dB forward gain. The rear null can be positioned. The antenna would require a center support about 35 feet high for 20M. Five dipoles slope away at a 30 degree angle. The feedpoints are conected to a switchbox containing DPDT relays which are used to select the active dipole and position the rear null. The others serve as reflectors. Anchors for the five 20M slopers would fit in a circle about 35 feet in diameter. The article doesn't say anything about radiation angle. It does explain how the antenna can be constructed with less wire and no relays for a fixed direction.

I would be interested in the experience of anyone who has used this antenna.

Tom, N3IJ

"numeric" <numeric@worldnet.att.net> wrote in message
news:0FqOa.44522$3o3.2977236@bgtnsc05-news.ops.worldnet.att.net...
> Looking for the best 20m vertical antenna design; without radials or
buried
> ground wires. There is no restriction on the antenna height; except, that
I
> would like to support the antenna at its base and mounted on the roof. I
am
> more concerned about a design that optimizes the antenna efficiency and
> provides a low angle of radiation rather then for a 50 ohm impedance. The
> ground is basically sand, not much conductivity.
>
> Any Ideas?
>
> Thanks.
>
>

908. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 16:09:33 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bek30k$s6n$1@news.service.uci.edu>
Source record: 112952

W5DXP wrote:
> Jim Kelley wrote:
>
>> You were the topic of discussion of this post, Cecil. It certainly
>> wasn't techincal, but I do think it was accurate.
>
>
> An ethical person would apologize. How about you?

After you, sir.

ac6xg

909. Re: BPL interference - reply comments - YOUR ACTION REQUIRED

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 16:33:59 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnbgr5bn.927.bit-bucket@localhost.config.com>
Source record: 112955

I'll just bet that the Brass Pounders League loves all this attention...

Jonsy W3DHJ

910. Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 16:46:42 UTC
From: Myron <msteir@charter.net>
Message-ID: <vgr63g2nkus462@corp.supernews.com>
Source record: 112956

I just purchased an Icom AH4 antenna tuner and intend to use it to feed a 28 foot length of wire in a narrow attic crawl space.

I know the tuner needs to be grounded and wonder whether a ground wire connected to an AC outlet ground is effective somewhat as an RF ground in this circumstance. I hesitate calling attention to any antenna wiring by running a heavy wire down the outside of the condo.

The other alternative would be to try and load a 28 foot dipole using one side (14') connected to the ground on the tuner. I just don't know if this setup would load well on too many bands.

Anyone have any ideas?

911. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 17:12:32 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bek6n1hr1@news.service.uci.edu>
Source record: 112960

W5DXP wrote:

> Jim Kelley wrote:
>
>>> Well, I've already provided the quote from: "Fields and Waves in
>>> Communication Electronics", by Ramo, Whinnery, and Van Duzer.
>>
>>
>> The topic of converstaion was: Poynting Vector Energy Anaylsis of An
>> Impedance Discontinuity.
>
>
> Yes it was. So what happens to the reflected power Poynting Vector
> (that the above reference says exists) when it encounters the
> impedance discontinuity?
>
> 100W source--50 ohm feedline--+--1/2WL 150 ohm feedline--50 ohm load
>
> The reflected power Poynting vector on the left side of the impedance
> discontinuity is zero. The reflected power Poynting vector on the right
> side of the impedance discontinuity is 33.33W pointing toward the left.
> For about the tenth time, what happens to that reflected power Poynting
> vector?

912. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 17:17:01 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bek6vf$l6$1@news.service.uci.edu>
Source record: 112959

W5DXP wrote:

> Jim Kelley wrote:
>
>>> Well, I've already provided the quote from: "Fields and Waves in
>>> Communication Electronics", by Ramo, Whinnery, and Van Duzer.
>>
>>
>> The topic of converstaion was: Poynting Vector Energy Anaylsis of An
>> Impedance Discontinuity.
>
>
> Yes it was. So what happens to the reflected power Poynting Vector
> (that the above reference says exists) when it encounters the
> impedance discontinuity?
>
> 100W source--50 ohm feedline--+--1/2WL 150 ohm feedline--50 ohm load
>
> The reflected power Poynting vector on the left side of the impedance
> discontinuity is zero. The reflected power Poynting vector on the right
> side of the impedance discontinuity is 33.33W pointing toward the left.
> For about the tenth time, what happens to that reflected power Poynting
> vector?

Like I said, you haven't done a Poynting vector energy analysis. If you had, I wouldn't have to solve the problem for you. Why should someone believe what you say when there's no evidence you've even worked the problem yourself?

73, ac6xg

913. What kind of balun is it?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 17:18:54 UTC
From: whitehat <rpav@suffolk.lib.ny.us>
Message-ID: <KihPa.317$603.17711@iad-read.news.verio.net>
Source record: 112961

I have a balun with no identification on it but I'd like
to know what kind it is. Here's the info:

All coils are wound on a common toroid core.
One antenna lead makes 9 turns and is connects to the coax ground.
The other antenna lead makes 27 turns and is connected to the
coax center conductor.

Looks to be about #10 enameled copper wire.

914. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 17:26:48 UTC
From: richardharrison@webtv.net
Message-ID: <18785-3F0DA1D8-197@storefull-2313.public.lawson.webtv.net>
Source record: 112964

I wrote:
"Zeros in voltage and current SWR waveforms are 180-degrees out-of-phase with each other."

What I should have said was: Voltage is maximum when current is minimum and vice versa.

Voltage and current peaks are just 90-degrees apart in SWR patterns.

Best regards, Richard Harrison, KB5WZI

915. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 17:35:11 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bek81k$16i$1@news.service.uci.edu>
Source record: 112962

W5DXP wrote:

> I have told you time after time, that the load impedance doesn't matter
> and the feedline length doesn's matter.

It matters in exactly the same way that the index of refraction of the
glass substrate matters.

>>> 50V at zero degrees and 1A at 180 degrees = 50W
>>> 50V at 180 degrees and 1A at zero degrees = 50W
>>
>>
>> Non-sequitur. The topic of conversation had been: Examples where
>> "something is actually destroyed and gives up all it's energy."
>
>
> Dodging another technical question, I see, and we all know why.

:-) Yes, very technical. If a math question was posed, I must have
missed it.

> You know that the sum of the two above waves is zero volts and
> zero amps, i.e. destruction of the two waves in their direction
> of travel. Where does the energy go when the waves go to V=0 and
> I=0 in their direction of travel.

Using the values above, calculate the rate of flow of energy equal to
V*I. That's how much energy is involved in your dilema here.

> It seems that everything you don't know the answer to is a
> non-sequitur. I fully understand your attitude.

Another one of your technical remarks?

ac6xg

916. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 18:07:58 UTC
From: dplatt@radagast.org
Message-ID: <vgrarudampu1db@corp.supernews.com>
Source record: 112966

In article <vgr63g2nkus462@corp.supernews.com>,
Myron <msteir@charter.net> wrote:

>I just purchased an Icom AH4 antenna tuner and intend to use it to feed a 28
>foot length of wire in a narrow attic crawl space.
>
>I know the tuner needs to be grounded and wonder whether a ground wire
>connected to an AC outlet ground is effective somewhat as an RF ground in
>this circumstance.

Well, it'll serve as an RF counterpoise and so it may let you tune up
OK. It won't actually hold the tuner case down near ground very
well... the wiring is too long and too indirect to serve as a really
good RF ground. Also, you'll end up with a fairly hefty amount of RF
current flowing in your condo's ground wiring - much of this will
couple over into the hot and neutral, and you may end up with
substantial RF voltages appearing on the chassis of any "grounded"
equipment plugged into the mains on this circuit. This could very
easily lead to RFI/TVI problems, or to people being "bitten" by RF on
their TV or stereo. Probably not a good idea.

>The other alternative would be to try and load a 28 foot dipole using one
>side (14') connected to the ground on the tuner. I just don't know if this
>setup would load well on too many bands.

This is probably safer. You could try several things to improve the
load-ability:

- Add a choke balun where the coax reaches the tuner (just take 8-10'
of the coax, and wind it into a loop 8-10" in diameter and use
tiewraps to hold it together). This will help maintain balance
between the two sides of the dipole.

- The dipole wires don't have to be straight. If you zigzag each
side of the dipole back and forth across the width of the attic
space a couple of times you can probably increase the length of the
wires significantly, and improve the tuner's ability to load up the
wires onto the lower-frequency bands.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

917. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:02:31 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0DB7A3.6050606@comcast.net>
Source record: 112968

Hey! Is this the new 'strategy' to get around PRB-1??

That is 'Create so much HF noise that the hams will close up shop and
take those ugly things down.'

Deacon Dave, W1MCE

[SNIP]
>
> Given FCC head commissioner Michael Powell's basic orientation -- he
> used to be a lawyer/lobbiest for large media company's, and he
> recently has turned the whole radio industry over to the Clear Channel
> folks -- where do you think he might come down in this controversy? I
> suspect he'd be much more aligned with the BPL'ers than with a bunch
> of crummy hams polluting nice neighborhoods with their antennae.
>
> Bob
> k5qwg

918. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:04:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0d99de_2@corp-news.newsgroups.com>
Source record: 112957

Jim Kelley wrote:
>
> W5DXP wrote:
>> An ethical person would apologize. How about you?
>
> After you, sir.

OK, I apologize for any and all angst that I have caused you (or anyone else on this newsgroup). My Dad and my best friend both died this year and I have been in a foul angry mood for most of the time.

I would like for you and me to lay our personality conflicts to rest, but based on your past actions and reactions, I really don't think you are capable of being a gentleman. I have a lot of friends with which I differ on technical issues, but you are the only one of them who has ever threatened me. Please prove me wrong about my opinion of you. I have removed your address from my email kill file.
--
73, Cecil, W5DXP

919. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:04:58 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307101104.372d3e0d@posting.google.com>
Source record: 112869

MikeN <mnewman@clear.net.nz> wrote in message
news:<b64qgv876u17b3ilo48jsmuo06jq41g0jf@4ax.com>...
> Hi all.
>
> I've got a 70 cm Yagi which is to be matched to a 50ohm feedline,
> feeding a 70cm repeater (5MHz split).
>
> The Yagi has an impedance of 12.7+j0.8 (so 4NEC2 tells me).

...

I've simply used a folded-dipole (equal diameters for the two
sections) driven element in similar cases. That should give you very
close to 50 ohms. It's balanced, so use a 1:1 balun to get to 50 ohm
coaxial.

Cheers,
Tom

920. Re: BPL interference - reply comments - YOUR ACTION REQUIRED

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:04:59 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0DB83A.90804@comcast.net>
Source record: 112870

Bringing CW to an antenna group is like bringing a skunk to a party.

DD, W1MCE

Allodoxaphobia wrote:
> I'll just bet that the Brass Pounders League loves all this attention...
>
> Jonsy W3DHJ

921. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:07:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0d9a8e$1_2@corp-news.newsgroups.com>
Source record: 112958

Myron wrote:
> The other alternative would be to try and load a 28 foot dipole using one
> side (14') connected to the ground on the tuner. I just don't know if this
> setup would load well on too many bands.
>
> Anyone have any ideas?

That arrangement should load fairly well on 20m-10m.
--
73, Cecil, W5DXP

922. Re: Feedpoint impedence / wire diameter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:23:24 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307101123.52b8e7d@posting.google.com>
Source record: 112871

vswrref@hotmail.com (Jeff Y.) wrote in message
news:<3f09d544.5385368@national-news.stargate.net>...
> Hi all,
>
> I've been trying to find some data on what happens to the feedpoint
> impedence of an antenna when the thickness of the wire increases. I
> know for a fact the bandwidth will increase somewhat but what does the
> impedence do, say going from 14 gauge to 10 gauge copper wire? Does
> it increase or decrease?

You can find books with graphs of dipole impedance versus length and wire diameter that will give you a lot of appreciation for what happens. You can, of course, use a program to generate such graphs yourself, but it's already been done for you. I've found it helpful to look at what happens to "short" antennas, as well as at resonances at both odd and even multiples of a half-wave, and at points in between the resonances. I've particularly liked the graphs (and explanations) in the "Antennas" chapter of King, Mimno and Wing's "Transmission Lines, Antennas and Waveguides" book. Since the graphs are showing the value of a complex dependent variable versus two independent real variables, it's nice that they are presented in several different formats. It might be fun to put the data into a modern interactive graphical presentation program to play with, but the old 2-d plots can still tell you a lot.

The feedpoint resistance changes a lot for wire diameter changes with a full-wave dipole, but as others have noted, not much at all for a half-wave. You'll see similar things at other even multiples and odd multiples of a half-wave. Of course, the same thing applies for quarter, half, 3/4, full, etc. wave elements feed against a ground plane.

Cheers,
Tom

923. Re: Antenna field strength question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:39:38 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307101139.42ec1c13@posting.google.com>
Source record: 112872
Cross-posted to: alt.radio.amateur,fido7.hamradio,nl.radio.amateur,rec.radio,rec.radio.amateur.antenna

"MCB" <a@c.com> wrote in message news:<bonLa.44312$9C6.2096962@wards.force9.net>...
> Thanks Richard
>
> More information: The antenna is an active dipole. There is a 3W RF limiter
> on the output which connects directly to a low noise amplifier (LNA). So the
> antenna can cope with up to 3W on its output before any damage to the
> limiter or LNA. I need to know the field strength as I have a transmitter
> within 10 metres transmitting 100W into another dipole at the same frequency
> as the RX !! (the receiver is isolated).
>
> So I need to know what the field strength in V/m will produce 3W on the
> output of the antenna?..... Anyone know how to tackle this problem?

(Aside: Thanks to Roy and Kevin for their postings on this subject!
I'm especially glad to see that Kevin still checks in here
occasionally.)

As an experimentalist, I'd suggest simply commandeering the antenna
into which you're feeding the 100 watts for long enough to do a
network measurement between the antennas. Since you really only care
at one frequency, simply reduce the transmitted power to 1W, for
example, for long enough to find the power at the appropriate point in
the active antenna chain. It's a linear system, right? So 100 times
the input power will result in 100 times the "output" power. All that
seems much easier than going through the intermediate step of
measuring field strength...and since it sounds like you may be within
the near field of the transmitting antenna, you may not be accurately
characterizing the field strength in any event.

Cheers,
Tom

924. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:42:04 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0da298_2@corp-news.newsgroups.com>
Source record: 112963

Jim Kelley wrote:
> Like I said, you haven't done a Poynting vector energy analysis. If you
> had, I wouldn't have to solve the problem for you. Why should someone
> believe what you say when there's no evidence you've even worked the
> problem yourself?

I'm quoting Ramo and Whinnery and you are still hurling insults.
What is it about the reflected power Poynting vector that you
don't understand?
--
73, Cecil, W5DXP

925. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:44:50 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <xljPa.32$zd4.19@lakeread02>
Source record: 112873
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Damn anti-CW nuts are after the Brass Pounders League now!

Arrrggh

"'Doc" <w5lz@cwis.net> wrote in message news:3F0C5497.C48404D4@cwis.net...
>
>
> Zoran,
> Exactly how would my contribution be used to fight
> 'BPL'? Postage, salaries, ISP changes?
> 'Doc

926. Re: phasing coils

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:49:55 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307101149.2e9e2973@posting.google.com>
Source record: 112874

mike <nunya@nowhere.com> wrote in message
news:<c1ac07f922537b76bdd0efbf47136f6b@TeraNews>...
> After much searching (Google and books) I have yet to find an answer.
>
> Does anybody have the formulas for making a phasing coil for collinear
> antennas?
>
> I would like to use coils instead of stubs, easier to make enclosures
> and mounting points.

Surprised you haven't gotten any other answers on this yet.

Suggest you look for a program that will tell you the self-resonant
frequency of a solenoid coil and use that to _estimate_ the coil you
should use. Try to make some measurements with that and with some
coils a little longer and a little shorter, and also for comparison,
against a measurement of just a simple quarter wave (assume you want
to run it against a ground plane).

Consider also that you could use a coaxial phasing stub: make one of
the elemens from coax whose center shorts to the outer an electrical
quarter wave away from the end; outer is the radiator of that section
and the inner connects to the end of the other section.

But I'd also suggest you read the part of the "Antennas" chapter in
King, Mimno and Wing's "Transmission Lines, Antennas and Waveguides"
that talks about phasing stubs, and suggests that coaxial stubs (and
by implication, phasing coils) do NOT work as well as stubs
perpendicular to the axis of the antenna.

I'm personally partial to the "coaxial collinear" construction in
which transmission line characteristics ensure proper phasing of the
feedpoint voltages between each pair of elements.

Cheers,
Tom

927. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 19:53:52 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307101153.487f44bc@posting.google.com>
Source record: 112875
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Dick Carroll <dickc58@att.net> wrote in message news:<3F0CF4BC.2CC45065@att.net>...
> Art Unwin KB9MZ wrote:
>
> > 60db is a very high figure. Where does this figure come from.
>
> Maybe the noise floor is pretty low at WA7AA! :0)

I am not trying to be derogatory just trying to be reaslistic
but my logic may be incorrect!!!
60db I suppose could equate to an S9 signal. Is this in error?
Are we saying to the FCC that in all cases the noise will be at
a S9 level? Say the proponents Prove that the noise level will
never exceed S1 and state that the ARRL is over reacting !
If they also state that this benefits the majority of internet
users (or total population)in that it can reduce costs by half,
then ham radio would be in a very sad position.
Now I have heard it stated that from 14 thru 30 Mhz the actual
noise level is far below the normal radios thresh hold, so what
will be the TRUE noise level that we would have to compete with?
If it was declared specifically what 'S' noise level increase that
we would have to contend with on EACH band rather than the inuendo
of S9 level, we would be better positioned to determine whether we
were complaining for complaining sake and frittering away any
possible influence we do have for the future.
If we are to use our number strength wisely for the benefit of
the hobby then it would behoove the ARRL to be very specific
with respect to the possible danger so that the label of
obstructionists will not be aplied at a future date.
may have
Regards
Art Unwin KB9MZ....XG

928. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 20:01:24 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bekgkf$524$1@news.service.uci.edu>
Source record: 112876

W5DXP wrote:

> OK, I apologize for any and all angst that I have
> caused you (or anyone else on this newsgroup). My
> Dad and my best friend both died this year and I
> have been in a foul angry mood for most of the time.

I accept your apollogy. I also lost my dad. He died last month and I
was at his side for his last days.

> I would like for you and me to lay our personality
> conflicts to rest, but based on your past actions and
> reactions, I really don't think you are capable of
> being a gentleman. I have a lot of friends with which
> I differ on technical issues, but you are the only one
> of them who has ever threatened me. Please prove me
> wrong about my opinion of you.

Well, that didn't last very long. I have never threatened you. I don't
threaten people. Every one of my personal friends knows me as a truely
gentle man. I find it difficult to see how I could ever change your
opinion about anything.

As you may recall, I was virtually your only supporter on this newsgroup
when I joined this quest. I expressed to you my opion that your
approach, if correct, was simple, elegant, and beautiful! We seemed to
share that enthusiasm in this search for a detailed explanation of the
phenomenon. We shared skepticism about reflections from virtual shorts,
and agreed that reflections occur only at physical discontinuities. I
had discussions with several of the regulars here on the issue, lending
support to your point of view about the interference phenomenon. I very
much enjoyed that for once we had a common interest and point of view.
I've corresponded via email with Steve Best, Walter Maxwell, and others
on the issue all prior to having seen part 2 of your paper. After
reading part 2 though, I expressed to you that I had reservations about
the reversal in the direction of energy described in your paper. I
investigated further, and also asked a few of the professors at UC
Irvine to consider the problem. The bottom line turned out that there
is no physical or mathematical way for such a thing to occur - absent a
reflecting media. You wouldn't hear of it. At that point you saw me as
your adversary, and began treating me as such. Since then you've called
me delusional and impugned my intellegence at almost every opportunity.
And yet throughout this whole thing, I've had only one interest. It
is the very same one we both shared at the outset, to discover the
truth. I've conveyed that truth to you to the best of my ability.
And why do you think it is that, through all the insults I've continued

to try to convey it to you? It's because I would like to get back to the point once again where you and I share a common viewpoint. That's it. The angst on my part stems from the fact that someone whom I respect, continually finds the need to insult me. Most of the time you'll find I've refrained from commenting on the insults and have simply deleted them. Over the last couple of days however, I spent some time trying to illustrate what that looks like from my point of view. And now we find ourselves here.

Of course I appologize for having caused you angst. It was never my intention to cause angst! And it shouldn't have done so. It should only have caused you to reconsider your point of view, and consider another one. I honestly don't believe you have been able to do that - for whatever reasons. Perhaps the case is not unlike that of a scientist who has too much career invested in a particular theory. I don't know. All I know is this is the only less than amicable relationship I have in my life, and I truely wish it were amicable.

> I have removed your
> address from my email kill file.

I appreciate that courtesy. It's not something I ever thought was necessary.

73, Jim AC6XG

929. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 20:05:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0da817$1_2@corp-news.newsgroups.com>
Source record: 112965

Jim Kelley wrote:

> W5DXP wrote:
>> I have told you time after time, that the load impedance doesn't matter
>> and the feedline length doesn's matter.
>
> It matters in exactly the same way that the index of refraction of the
> glass substrate matters.

Yes, it does, which is not at all if we already know the
reflected irradiance which is a given. If the reflected
irradiance is a given, you don't need to know the index of
refraction of the glass. In fact, if it is unknown, you can
calculate it from the given reflected irradiance.

>>>> 50V at zero degrees and 1A at 180 degrees = 50W
>>>> 50V at 180 degrees and 1A at zero degrees = 50W

> :-) Yes, very technical. If a math question was posed, I must have
> missed it.

It ain't rocket science. What is the superposed sum of the
two above waves? What happens to the intrinsic energy pre-
existing in those waves before they cancel each other?

> Using the values above, calculate the rate of flow of energy equal to
> V*I. That's how much energy is involved in your dilema here.

The rate of flow of energy has to be 100 joules/sec since the energy
in those two waves cannot stand still and cannot be destroyed. We
already know that the energy in those two waves joins the forward-
traveling power wave toward the load.
--
73, Cecil, W5DXP

930. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 20:15:57 UTC
From: Sjoerd <sjoerd.nederveenDITWEG@home.nl>
Message-ID: <bekhgr$8nr$1@news2.tilbu1.nb.home.nl>
Source record: 112877

You might also try the so called DK7ZB-match, easy to build and my 2m antenna works fine with this match

see: http://www.qsl.net/dk7zb/dk7zb-match.htm

Good luck!

Sjoerd PE2SVN
The Netherlands

"MikeN" <mnewman@clear.net.nz> schreef in bericht news:b64qgv876u17b3ilo48jsmuo06jq41g0jf@4ax.com...
> Hi all.
>
> I've got a 70 cm Yagi which is to be matched to a 50ohm feedline,
> feeding a 70cm repeater (5MHz split).
>
> The Yagi has an impedance of 12.7+j0.8 (so 4NEC2 tells me).
>
> What are appropriate matching systems to give me the best matching so
> that the Tx-Rx duplexer peforms up to its bandpass and notch
> specifications.
>
> Thanks
>
> MikeN

931. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 20:16:58 UTC
From: dplatt@radagast.org
Message-ID: <vgridqoso97hfa@corp.supernews.com>
Source record: 112878
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

In article <85ed38d.0307101153.487f44bc@posting.google.com>,
Art Unwin KB9MZ <aunwin@insightbb.com> wrote:

>60db I suppose could equate to an S9 signal. Is this in error?

No, I don't think so.

>Are we saying to the FCC that in all cases the noise will be at
>a S9 level?

They're saying that an Access BPL system, based on the technologies
which have been proposed (and tested in other countries), would induce
enough energy on nearby amateur-radio antennas (e.g. a dipole located
within 30 metres of the power line), to raise the broadband noise
level at HF frequencies on the rough order of 60 dB above the ambient
noise levels which are now generally present in urban areas.

> Say the proponents Prove that the noise level will
>never exceed S1 and state that the ARRL is over reacting !

As far as I've been able to tell from reading the various materials,
the BPL proponents here in the U.S. haven't made this sort of claim,
nor have they performed any significant number of actual field trials
to measure interference and noise levels.

They seem to be evading or ignoring the issue.

>If they also state that this benefits the majority of internet
> users (or total population)in that it can reduce costs by half,
>then ham radio would be in a very sad position.

I don't think they've made that level of claim either.

> Now I have heard it stated that from 14 thru 30 Mhz the actual
> noise level is far below the normal radios thresh hold, so what
> will be the TRUE noise level that we would have to compete with?

You have, I think, heard incorrectly.

What I have heard and read in the past... and what I've read in the
noise specs posted in the ARRL's response to the FCC NOI - is that on
the HF bands, the noise floor is dominated by atmospheric (QRN) and
man-made (QRM) noise, *not* by the noise floor of the receiver's own
electronics. The ambient noise level most of us face today is many dB
up *above* the radio's threshold, not "far below".

It isn't until you get up into the VHF bands that the receiver's
self-noise becomes equal to, or greater than the ambient noise level.

That's the problem with BPL. It's not just that the noise levels it
generates would be quite a lot above the noise floors of our
receivers' electronics - they'd be well above the typical ambient
"band noise" levels present today on most of the HF bands.

In other words, BPL *will* bury a lot of the weak signals we can
receive today, and will bury 'em deep.

>If it was declared specifically what 'S' noise level increase that
>we would have to contend with on EACH band rather than the inuendo
>of S9 level, we would be better positioned to determine whether we
>were complaining for complaining sake and frittering away any
> possible influence we do have for the future.

So GO READ THE ARRL's RESEARCH, won't you? As I recall, the 121-page
analysis they posted a couple of days ago shows the typical
receiver-self-noise and typical ambient-band-noise levels in each of
the HF bands, and also shows the noise level which could be expected
to be created by an Access BPL system running on power lines located a
typical distance from an urban amateur's HF antenna.

They've done the research, Art, based on what appear to me to be very
reasonable (and probably conservative) models of BPL behavior,
powerline configuration, and radio sensitivity. The data's out there.
Go look for yourself.

> If we are to use our number strength wisely for the benefit of
>the hobby then it would behoove the ARRL to be very specific
>with respect to the possible danger so that the label of
>obstructionists will not be aplied at a future date.

It appears to me that they have done so.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

932. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 20:24:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0dac93$1_2@corp-news.newsgroups.com>
Source record: 112967

Jim Kelley wrote:
> Why should someone believe what you say when there's
> no evidence you've even worked the problem yourself?

Here's an interesting reply to one of my postings on
sci.physics.electromag:

> Cecil said:
>> Seems to me that destructive interference event occurring in the direction
>> of the source feeds energy to the constructive interference event occurring
>> in the direction of the load.

The reply was:
Yes, just so. In fact, the phase change/non-change when the waves are
reflected/transmitted by low-to-high or high-to-low interfaces ensures
that this will always happen - if in phase on one side, they must be out
of phase on the other.

Which is exactly what I say in my article.
--
73, Cecil, W5DXP

933. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 20:56:08 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0DD243.3060002@comcast.net>
Source record: 112880

Forgiveness jointly offered and hopefully jointly received.

Deacon Dave

W5DXP wrote:
> Jim Kelley wrote:
>
>> I have never threatened you.
>
>
> You deny threatening me with loss of your friendship?
> --
> 73, Cecil, W5DXP
>

934. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 21:02:38 UTC
From: Mike Coslo <mjc5@psu.edu>
Message-ID: <3F0DD46E.1070300@psu.edu>
Source record: 112881
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Art Unwin KB9MZ wrote:
> Dick Carroll <dickc58@att.net> wrote in message news:<3F0CF4BC.2CC45065@att.net>...
>
>>Art Unwin KB9MZ wrote:
>>
>>
>>>60db is a very high figure. Where does this figure come from.
>>
>>Maybe the noise floor is pretty low at WA7AA! :0)
>
>
> I am not trying to be derogatory just trying to be reaslistic
> but my logic may be incorrect!!!
> 60db I suppose could equate to an S9 signal. Is this in error?
> Are we saying to the FCC that in all cases the noise will be at
> a S9 level?

Of course not! But if you live in an area criss-crossed by active lines, and have the sigs coming into your house you can expect some pretty strong interference.

> Say the proponents Prove that the noise level will
> never exceed S1 and state that the ARRL is over reacting !

I will accept Ed Hare's (and the other testers) figures. You could if you like come up with some of your own.

> If they also state that this benefits the majority of internet
> users (or total population)in that it can reduce costs by half,
> then ham radio would be in a very sad position.

It isn't just hams who use HF. Some homeland security type services do also.

Would you ever design a system that spills rf all over the place like this? Why on earth should we shield televisins, radios computers, etc if we are going to put a huge antenna up to negate all that shielding?

There are good ways to get a broadband signal into a person's house without messing up everything else.

Adn why should the internet have priority over everything else?

> Now I have heard it stated that from 14 thru 30 Mhz the actual
> noise level is far below the normal radios thresh hold, so what

> will be the TRUE noise level that we would have to compete with?

From who?

> If it was declared specifically what 'S' noise level increase that
> we would have to contend with on EACH band rather than the inuendo
> of S9 level, we would be better positioned to determine whether we
> were complaining for complaining sake and frittering away any
> possible influence we do have for the future.

Prove them wrong and do the service a favor then.

> If we are to use our number strength wisely for the benefit of
> the hobby then it would behoove the ARRL to be very specific
> with respect to the possible danger so that the label of
> obstructionists will not be aplied at a future date.
> may have
> Regards
> Art Unwin KB9MZ....XG

Or maybe just wait and see..........

- Mike KB3EIA -

935. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 21:19:16 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bekl6v$72a$1@news.service.uci.edu>
Source record: 112882

W5DXP wrote:

> Jim Kelley wrote:
>
>> I have never threatened you.
>
>
> You deny threatening me with loss of your friendship?

That's pretty sappy, Cecil. For one thing, although you might care about that, I wouldn't presume to think you'd care about it. For another it's not my MO so, yes. But I've saved all of our correspondence, so if you can quote a date and time, I can look it up.

As I've already said, the exchage was a request on my part that you treat me like a friend - as in trying to establish a friendship with you. To put it into context, it was right after you began taking an adversarial stance in our conversations. How you can take that as a threat, I'll never know.

Interesting that's the only thing you had a comment on.

73, ac6xg

936. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 22:20:16 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bekopp$8n7$1@news.service.uci.edu>
Source record: 112883

W5DXP wrote:

> Jim Kelley wrote:
>
>> Waves that propagate to a dissipative load transfer energy to that
>> dissipative load.
>
>
> How does the wave about to be dissipated differ from the wave that is
> about to be canceled? Hint: they are identical.

The waves themselves are indeed identical, i.e. you can't measure a difference between them on a transmission line. But one might indeed be transferring energy while the other is not. For example, take a length of 50 ohm transmission line with a short at one end. Think about this circuit with and without a circulator at the source. With the circulator in circit, energy is transferred from the source to the circulator load. Without the circulator, the source transfers no energy to a load. If there are no re-reflections from the source, is there a measureable difference?

> How does the wave know ahead of time whether it is going to encounter a
> dissipative load or not? It obviously cannot know ahead of time so all
> waves with the same V and I in phase carry the same amount of energy.

This is a misconception on your part. I don't claim anything has to know anything. That is your claim, and I don't agree. I think it's silly.

> A wave about to encounter a dissipative load or the same wave about to be
> canceled carry the same amount of energy.

They have the same potential to transfer energy. The do not necessarily transfer that energy. That depends on boundary conditions.

> The wave gives up that energy in
> both cases. In the first case it gives up its energy as heat. In the second
> case, it gives its energy to the constructive interference.

I understand that is your theory. I even like the sound of your theory. But you need to understand that it is only your theory. It is an unproven, and unsupported theory. I've tried to come up with support for it, but find none. Yes, the energy which would have been reflected does appear in the transmitted direction. We know this from conservation of energy - energy incident equals energy transmitted plus energy reflected. What does not appear to happen is all the bouncing around you describe.

It can be shown that at the first boundary, two reflected waves destructively interfere, producing zero reflected energy. It can also be seen at that boundary that the two waves traveling in the forward direction yield all of the forward energy due to their constructive interference.

I understand that if you take the interference term and change its sign you get the same number, and its not just a coincidence. Yes, you can say the amount cancelled in the reflected direction equals the amount of enhancement in the forward direction. But that doesn't mean energy had to turn around in order to accomplish that. That would only be true if energy were indeed traveling in the reverse direction to begin with. When we realize it's not, there's nothing left to account for Cecil. There's no conservation of energy problem to solve. It's all there, just as it says in the physics books, and enegineering books as well. If you want to believe that energy bounces all over the place like, so be it. Just don't expect to be able to sell paraphysical phenomena as science.

But as I've tried to tell you many times before, when you can show that Poynting vector solution changing direction solely as a result of destructive interference, you'll have a case - and my vote. Until then, it looks like a non-starter.

73, ac6xg

937. Re: BPL interference - reply comments - YOUR ACTION REQUIRED

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 22:25:50 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnbgrpve.2bfh.bit-bucket@localhost.config.com>
Source record: 112884

On Thu, 10 Jul 2003 19:04:59 GMT, Dave Shrader hath writ:

> Bringing CW to an antenna group is like bringing a skunk to a party.
>
> DD, W1MCE

Well, it's more _On Topic_ than half the crap I see in the Subject:s here.

Jonesy W3DHJ

938. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 22:33:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0dcabc$1_2@corp-news.newsgroups.com>
Source record: 112879

Jim Kelley wrote:
> I have never threatened you.

You deny threatening me with loss of your friendship?
--
73, Cecil, W5DXP

939. Flagpole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 23:16:40 UTC
From: box90d <box90d@cox.net>
Message-ID: <ntmPa.5043$o54.4872@lakeread05>
Source record: 112885

Looking for suggestions for flagpole design for Florida Mobile Home Park where flagpole OK, antennas not OK. Thought of the Diamond shaped flagpole configuration as a (CAP) top-loaded vertical. Anybody tried this? Note, my ground is probably terrible, and as a stealth antenna, radial (maybe 2) must be installed after dark Looking to run about 100W.

TIA

--tm

WD4AON

WD4AON@cox.net

940. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 23:35:48 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hhtstnw.pminews@netnews.comcast.net>
Source record: 112886
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Wed, 09 Jul 2003 22:05:55 -0400, Dave Holford wrote:

>Maybe, but IIRC the FCC, along with the FAA, FEMA etc. etc. operate
>extensive HF communications systems. It seems unlikely that a source of
>such serious potential interference to their own communications would be
>authorized?

But the top execs of the companies that want to do BPL are telling
the top execs of the agencies "we checked, there is no problem".

"The Fix Is In."

Sometimes I think that if it wasn't for the active hams who work at
those agencies and the input that they make, the brass wouldn't
have a clue about what happens in real life communications. I know -
I spent 28 years at the FCC....

--
73 de K2ASP - Phil Kane

Retired and loving every minute of it....
Work was getting in the way of my hobbies

941. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 23:42:17 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vgruh0bju62mb4@corp.supernews.com>
Source record: 112887
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

"> I spent 28 years at the FCC...."
You poor thing. Why?
It took 3 years in broadcasting to run me back to college.
H.
NQ5H

"Phil Kane" <Phil.Kane@nov.shmovz.ka.pop> wrote in message
news:cuvyxnansvbet.hhtstnw.pminews@netnews.comcast.net...
> On Wed, 09 Jul 2003 22:05:55 -0400, Dave Holford wrote:
>
> >Maybe, but IIRC the FCC, along with the FAA, FEMA etc. etc. operate
> >extensive HF communications systems. It seems unlikely that a source of
> >such serious potential interference to their own communications would be
> >authorized?
>
> But the top execs of the companies that want to do BPL are telling
> the top execs of the agencies "we checked, there is no problem".
>
> "The Fix Is In."
>
> Sometimes I think that if it wasn't for the active hams who work at
> those agencies and the input that they make, the brass wouldn't
> have a clue about what happens in real life communications. I know -
> I spent 28 years at the FCC....
>
> --
> 73 de K2ASP - Phil Kane
>
> Retired and loving every minute of it....
> Work was getting in the way of my hobbies
>
>

942. Re: Mental Exercise

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 23:45:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0dfce0_2@corp.newsgroups.com>
Source record: 112889
Cross-posted to: sci.physics.electromag,rec.radio.amateur.antenna

Timo Nieminen wrote:
> On Thu, 10 Jul 2003, W5DXP wrote:
>>The devil is in the details. Here's what I have said over on
>>rec.radio.amateur.antenna that has stirred up a hornet's nest.
>>
>>In a system where all reflections toward the source are eliminated at an impedance
>>discontinuity by wave cancellation (destructive interference), the two rearward-
>>traveling reflected voltages are equal in magnitude and 180 degrees out of phase
>>with each other. Same for the two rearward-traveling reflected currents. Therefore,
>>on the source side of the impedance discontinuity, the rearward-traveling
>>voltage and current both go to zero in the direction of the source. Waves can be
>>destroyed but the energy in those waves cannot be destroyed.
>>
>>The destructive interference in the direction of the source supports constructive
>>interference in the direction of the load and satisfies the (V1+V2)^2/Z0 power
>>requirements of the two in-phase superposed voltages on the load side. The
>>destructive interference becoming constructive interference in the opposite
>>direction can be thought of as an energy reflection from the wave cancellation
>>event.
>>
>>In other words, the disappearance of two waves during a wave cancellation event
>>can result in reflected energy coherent with those two canceled waves. I don't
>>find that in the literature anywhere. Do you know of a reference?
>
> I'm curious as to what kind of objections people had. It all makes perfect
> sense to me.
>
> As for references, Stratton "Electromagnetic theory" covers transmission
> through and reflection by a dielectric layer, and points out that it is
> exactly the same for transmission lines, but just lets the math do the
> talking, so doesn't go into the detail that you do above. Don't know of
> any other book that goes into more detail, but I expect that a lot of EE
> books must.
>
> In any case, it's a simple enough exercise to calculate the reflection,
> transmission, and phase change due to an impedance discontinuity, either
> for plane waves incident on a dielectric interface, or for signals in a
> transmission line. Then just look at two waves incident from opposite
> directions. It's nice that, just using the boundary conditions for the
> amplitudes of the waves, one gets conservation of energy as a result. It
> might be an interesting exercise to derive the boundary conditions for the
> reflection/transmission starting with conservation of energy.

Thanks Timo, I guess I may not be crazy after all. I hope you won't mind me cross-posting your wisdom to rec.radio.amateur.antenna.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

943. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 23:48:38 UTC
From: Myron <msteir@charter.net>
Message-ID: <vgruqt8beuote1@corp.supernews.com>
Source record: 112888

> - The dipole wires don't have to be straight. If you zigzag each
> side of the dipole back and forth across the width of the attic
> space a couple of times you can probably increase the length of the
> wires significantly, and improve the tuner's ability to load up the
> wires onto the lower-frequency bands.

Dave,

I will definitely add a choke balun.

How much zig zagging do you think I could get away with without introducing factors that would seriously degrade performance? My attic crawl space is about 3 feet wide, 4feet high pitching down to the floor and 28 feet in length. I imagine I could easily fit a 33 foot dipole in that area to work 20M.

Thanks for the info.

Myron

944. Re: What kind of balun is it?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-10 23:52:36 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <PRmPa.10383$fa3.5868@fe01.atl2.webusenet.com>
Source record: 112890

If my poor memory , from 30 years ago training as A.S.E.E., 9:: 27 turns
= 1:3 turns ratio
As a transformer, SQUARE THAT TURNS RATIO, for the Impedence Ratio.
What that gives you is 9:1 impedence ratio , as input on the 9 turn side, at
50 ohm = 450 ohm on the 27 turn side.-- Jim NN7K

"whitehat" <rpav@suffolk.lib.ny.us> wrote in message
news:KihPa.317$603.17711@iad-read.news.verio.net...
> I have a balun with no identification on it but I'd like
> to know what kind it is. Here's the info:
>
> All coils are wound on a common toroid core.
> One antenna lead makes 9 turns and is connects to the coax ground.
> The other antenna lead makes 27 turns and is connected to the
> coax center conductor.
>
> Looks to be about #10 enameled copper wire.
>
>

945. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:01:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0e007d_2@corp.newsgroups.com>
Source record: 112892

Jim Kelley wrote:
> The waves themselves are indeed identical, i.e. you can't measure a
> difference between them on a transmission line. But one might indeed be
> transferring energy while the other is not.

How can two waves that are identical possibly be doing different things.
It doesn't make any sense at all. Waves cannot exist without intrinsic
energy!!! If any wave is destroyed, it gives up its energy. There is
simply no other place for the energy to go.

>> How does the wave know ahead of time whether it is going to encounter a
>> dissipative load or not? It obviously cannot know ahead of time so all
>> waves with the same V and I in phase carry the same amount of energy.
>
> This is a misconception on your part. I don't claim anything has to
> know anything. That is your claim, and I don't agree. I think it's silly.

That the wave has to be smart falls out from your assertions. Your waves
appear to exist without intrinsic energy so they have to know ahead of time
whether to exist without energy or not. Only a wave existing without energy
could be destroyed and not give up any energy in the process.

> But you need to understand that it is only your theory. It is an
> unproven, and unsupported theory. I've tried to come up with support
> for it, but find none.

Please reference the cross-posting from sci.physics.electromag. Somebody
predicted that those guys would tear me apart. On the contrary, they
tend to agree with me.

> It can be shown that at the first boundary, two reflected waves
> destructively interfere, producing zero reflected energy. It can also
> be seen at that boundary that the two waves traveling in the forward
> direction yield all of the forward energy due to their constructive
> interference.

Those reflected waves not only destructively interfere, they are
destroyed so they MUST give up any intrinsic energy in the waves.
Nothing else is possible.

> Yes, you can
> say the amount cancelled in the reflected direction equals the amount of
> enhancement in the forward direction. But that doesn't mean energy had
> to turn around in order to accomplish that.

Huh??? "Reflected" to "forward" isn't a turn around? Can I have a hit
off whatever you are smokin'? :-)

> That would only be true if
> energy were indeed traveling in the reverse direction to begin with.
> When we realize it's not, there's nothing left to account for Cecil.

If reflected energy from a mismatched load is not traveling in the reverse direction, pray tell what direction is it traveling in? I can see you haven't referenced the reflected power flow vector.

> There's no conservation of energy problem to solve.

There certainly is in your scenario. The reflected energy doesn't ever change directions but it somehow joins the forward wave anyway. Can you spell B-A-F-F-L-E-G-A-B? We know reflected energy is traveling rearward from a mismatched load. Your mantras cannot change that fact of physics.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

946. Re: Using a G5RV on 60m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:05:00 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <r1nPa.10480$fa3.5040@fe01.atl2.webusenet.com>
Source record: 112891

These are anything but, magical! but one stumbled across on the bay of "E", and susposed to be for 160-10, is offset fed by about 20 %! sounds more like a windom, or zepp to me, and might be interesting to try-match shouldn't be quite so wild. - his web page is: http://www.hfantennas.com/index.htm

Might take a look-- Jim NN7K P.S. have no connection with the site owner!, Jim

947. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:14:11 UTC
From: Steve Terry <g4wwk-remove-to-reply-@tesco.net>
Message-ID: <xjnPa.6941$ju6.127631@newsfep4-glfd.server.ntli.net>
Source record: 112893
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"zpk" <dmu_pkearn_dmu@rondomondo.eircom.ru.tv.net> wrote in message
news:3f0c4578.1343686@news1.eircom.net...
> On Wed, 9 Jul 2003 07:55:23 +0100, "Steve Terry"
> <g4wwk-remove-to-reply-@tesco.net> wrote:
>
> >> Mr Terry, _ . _ .. .. _ _ _._ _ . _ ... ... ._ ._ . _
> >>
> >Sums it up, a M3 CBer playing with Morse
> >Steve Terry
>
> and cant even send it properly anyhow :-)
>
You expected otherwise ?

Steve Terry

948. Re: phasing coils

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:23:08 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <rinPa.10588$fa3.2763@fe01.atl2.webusenet.com>
Source record: 112894

Try the old Frank Jones VHF handbook ,he was a "6", (if you can find one) he did more than a few colinears (includeing an 18 El one for 432) can't renmember his call, and this NOT modern, (from the 60's) but what you are essentially trying to do is: from top of element, to bottom of NEXT element, create a 180 deg phase shift! can do that with a out of (radiation) plane 1/2 wave long (like the center piece of a cushcraft ringo), or RESONATE CIRCUIT (but, this if high "q" can cause problems, this is also how the multiple stacked 1/2 wave sections on commet, and many commercial antennas work! those configured out of stacked , center conductor to shield, and vice versa coax pieces , all the way to the top, (EXCEPT at the top, they shorted together, and hit a 1/4 wave rod)! been in handbooks for years--
Jim NN7K

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0307101149.2e9e2973@posting.google.com...
> mike <nunya@nowhere.com> wrote in message
news:<c1ac07f922537b76bdd0efbf47136f6b@TeraNews>...
> > After much searching (Google and books) I have yet to find an answer.
> >
> > Does anybody have the formulas for making a phasing coil for collinear
> > antennas?
> >
> > I would like to use coils instead of stubs, easier to make enclosures
> > and mounting points.
>
> Surprised you haven't gotten any other answers on this yet.
>
> Suggest you look for a program that will tell you the self-resonant
> frequency of a solenoid coil and use that to _estimate_ the coil you
> should use. Try to make some measurements with that and with some
> coils a little longer and a little shorter, and also for comparison,
> against a measurement of just a simple quarter wave (assume you want
> to run it against a ground plane).
>
> Consider also that you could use a coaxial phasing stub: make one of
> the elemens from coax whose center shorts to the outer an electrical
> quarter wave away from the end; outer is the radiator of that section
> and the inner connects to the end of the other section.
>
> But I'd also suggest you read the part of the "Antennas" chapter in
> King, Mimno and Wing's "Transmission Lines, Antennas and Waveguides"
> that talks about phasing stubs, and suggests that coaxial stubs (and
> by implication, phasing coils) do NOT work as well as stubs
> perpendicular to the axis of the antenna.

>
> I'm personally partial to the "coaxial collinear" construction in
> which transmission line characteristics ensure proper phasing of the
> feedpoint voltages between each pair of elements.
>
> Cheers,
> Tom

949. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:23:53 UTC
From: dplatt@radagast.org
Message-ID: <vgs0spg44dju5a@corp.supernews.com>
Source record: 112895

>Dave,
>
>I will definitely add a choke balun.
>
>How much zig zagging do you think I could get away with without introducing
>factors that would seriously degrade performance? My attic crawl space is
>about 3 feet wide, 4feet high pitching down to the floor and 28 feet in
>length. I imagine I could easily fit a 33 foot dipole in that area to work
>20M.

I'd think that you could zig-zag the wire back and forth at an angle
of 45 degrees to the long axis, a foot or two above the floor, without
causing substantial degradation of performance. If you don't end up
needing to zig-zag that much to fit the 33 feet of wire into 28 feet
of space (and you probably wouldn't), zig less frequently!

Take a look at the discussion at http://www.cebik.com/zzdd.html for
some further ideas.

I imagine that your antenna's performance is likely to be set mostly
by the amount of power you can use without causing RFI/TVI due to the
strong RF fields in close proximity to household wiring. The slight
reduction in antenna efficiency isn't likely to matter very much.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

950. Re: Painting a j-pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:26:30 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <BlnPa.10608$fa3.1078@fe01.atl2.webusenet.com>
Source record: 112896

Wont make any diff, unless trying to hide from your neighabors and if anyone thinks that too much to worry about, see W7GJ's webpage on his "STEALTH ANTENNA" some 61 foot LONG BOOM, for 6 meters!!! Jim NN7K

"ShadowDancer" <shadowdancer99@sbcglobal.net> wrote in message news:yYAOa.296$bi5.20903071@newssvr21.news.prodigy.com...
> Well, there's protection from the elements, and also camouflage against sky
> if painted light gray or blue..
>
>
> "Max" <Max_Jens@post9.tele.dk.invalid> wrote in message
> news:3f0abc06$0$48893$edfadb0f@dtext02.news.tele.dk...
> > Hello
> >
> > > Could I get some input on whether it would be prudent to paint my
> 2-meter
> > > copper tube j-pole or not? I've been told that copper oxide actually
> > > increases the gain of the antenna, but I don't know if that gain is
> enough
> > > to outweigh the benefits of painting it...
> >
> > Just curious, what is the benefit of painting it ???
> >
> > Regards Max
> >
> >
>
>

951. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:42:54 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0E078A.8010805@comcast.net>
Source record: 112897
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Excerpt from the ARRL Release:

"Studies appended to the League's comments suggest received signal levels of BPL broadband noise at typical amateur stations would be anywhere from 33.7 dB to 65.4 dB higher than typical ambient noise levels in the worst-case situations. "BPL cannot be deployed using amateur allocations in the MF, HF and VHF bands without severely high interference potential," the ARRL reiterated. "

DD, W1MCE

The ARRL has submitted 120 pages of comments including analysis and related data.

The BPL grid includes power distribution on medium power lines right down to the 240 volt feed that comes right into your house!! Is that close enough to create a +60 dB noise level??

DD, W1MCE

Mike Coslo wrote:
>
> Of course not! But if you live in an area criss-crossed by active
> lines, and have the sigs coming into your house you can expect some
> pretty strong interference.
>
[SNIP]
>
>
>> Now I have heard it stated that from 14 thru 30 Mhz the actual
>> noise level is far below the normal radios thresh hold, so what
>> will be the TRUE noise level that we would have to compete with?
>
>[SNIP]

>> If we are to use our number strength wisely for the benefit of
>> the hobby then it would behoove the ARRL to be very specific
>> with respect to the possible danger so that the label of
>> obstructionists will not be aplied at a future date.
>> may have
>> Regards
>> Art Unwin KB9MZ....XG
>

952. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:43:41 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <IBnPa.10710$fa3.8178@fe01.atl2.webusenet.com>
Source record: 112898

look for an old article called "beer can baluns ", in QST, maybe also,in some of their handbooks. consider, that you need a 1/4 wave length lonf piece of 25 ohm coax (if you build with no dielectric, will be true 1/4 wave length, no velocity factor) this will be a "sleeve, or "choke" balun (to acheive a balanced feed, and will provide you a match under 1.6 to 1! (assuming your impedence formulai is correct! Math is for your balun Zo (line required) = Zo (in), Times Zo (out), and then take the SQUARE ROOT RESULTS OF IT! , (and with the small reactive component, should be insignificant to the calculation) Good Luck-- Jim NN7K

"Phil" <philip.bradway@verizon.net> wrote in message
news:tHdPa.5559$78.4458@nwrdny03.gnilink.net...
> Try a T match. The ARRL antenna hand book shows dimensions under the
section
> on K1FO Yagis.
>
> Phil, KB2HQ
>
> "MikeN" <mnewman@clear.net.nz> wrote in message
> news:b64qgv876u17b3ilo48jsmuo06jq41g0jf@4ax.com...
> > Hi all.
> >
> > I've got a 70 cm Yagi which is to be matched to a 50ohm feedline,
> > feeding a 70cm repeater (5MHz split).
> >
> > The Yagi has an impedance of 12.7+j0.8 (so 4NEC2 tells me).
> >
> > What are appropriate matching systems to give me the best matching so
> > that the Tx-Rx duplexer peforms up to its bandpass and notch
> > specifications.
> >
> > Thanks
> >
> > MikeN
>
>

953. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 00:57:09 UTC
From: Myron <msteir@charter.net>
Message-ID: <vgs2r65k43840f@corp.supernews.com>
Source record: 112899

Dave,

Thank you once again.

I'm going to run a maximum of 100W with my Icom 725 and assume (hope) that the power level is low enough to avoid problems.

The website you directed me to is pretty darn nice. I've done antenna searches on Google and never came across this worthwhile info. I'll try to digest the material.

I wish the ARRL antenna handbooks would explain things as simply. When I've used their manuals for reference (I have a fair library), I find that my eyes begin to glaze over. I bought their "Stealth Radio" book, hoping for ideas, but that was way too basic. I did come across some useful websites using Google, but alot of the information was duplicated so there was not as many useful ideas as I had hoped for.

You've been the biggest help.

Myron W2EDY

> I imagine that your antenna's performance is likely to be set mostly
> by the amount of power you can use without causing RFI/TVI due to the
> strong RF fields in close proximity to household wiring. The slight
> reduction in antenna efficiency isn't likely to matter very much.

954. Re: how to install NMO blind mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 01:02:40 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <yTnPa.10815$fa3.7706@fe01.atl2.webusenet.com>
Source record: 112900

Evan- done that myself, as a radioman , on more than a few occasions! they might call it blind mound, but lots of quicksand in these modern vehicles! Tale it you Centered on roof , drilled a hole and, there are several probs (sepending on vehicle) to get coax down, and /or clearance for the mount. if auto, or pickup, there is a rib that runs front to back , and (assumeing that a headliner is installed, can be be hammered , with a screw driver to force it lower, by 1/4/3/8 inch, so you can manouver the fitting/coax into position. Blazers/Bronchos pose another problem, as the front seat area , is an opening that goes nowhere! best way I found to hide the install , is 1) there is a Second roof that must be penetrated (this kinda like a roll bar), but, then this also doesnt go anywhere! fortunatly, there is a rubber "coupling" to cause a seal with the fiberglass roof, and if you punch a hole under this gasket, can feed coax to passenger compartment, and then dress, under this rubber seal, all the way to the floor, and then to the radio, under the door ducts!. . sadly, at one time vehicles had prepaired ways tio get installs in, but that is NOT THE CASE TODAY! and, btw, tis violation of law to EVEN BLOCK those GAS BAGS, and they dont even telly you WHERE THEY HID THEM! Jim NN7K

"K9SQG" <k9sqg@aol.com> wrote in message
news:20030708195141.28965.00000051@mb-m28.aol.com...
> I bought an NMO style mount at Hamvention for a blind hole installation
(i.e.
> no access from the back side to install it). I drilled a 3/4 inch hole
and
> then discovered there isn't enough clearance to slide it in. Anybody have
any
> hints or know of a brand of NMO mount that really works?
>
> 73s,
>
> Evan

955. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 01:06:30 UTC
From: kd1@sympatico.ca
Message-ID: <3F0E0D96.5AD18377@sympatico.ca>
Source record: 112902

Richard Harrison wrote:
>
> Keith wrote:
> "Assuming that P = VxI, the power is 0, always."
>
> Power is not zero on a line with a complete reflection because energy is
> moving at a joules per second rate.

I am still left quite confused by this. In the experiment proposed (a slight
variation on Cecil's), at a voltage maximum the current IS a constant 0 (or
similarly, at a current maximum, the voltage IS a constant 0). These 0 volts
and currents can be measured.

If we accept that instantaneous power is P = V x I, then at any point on the
line where the voltage or current is a constant 0, the power must be a
constant 0.

From the definition of power, it would seem that where ever the power is a
constant 0, the energy flowing must be a constant 0.

So I do not understand how energy can get through a point in a circuit
where the voltage or current is always 0, unless:

- instaneous power is not equal to instantaneous voltage times instantaneous
current (i.e. P != V x I), or
- even in the ideal case presented, V and I are never 0.

...Keith

956. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 01:06:56 UTC
From: kd1@sympatico.ca
Message-ID: <3F0E0DB0.6C46F5E9@sympatico.ca>
Source record: 112903

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Assuming that P = V x I, the power is 0, always.
> > This seems to be at odds with explanation that SGCL#1's power is
> > dissipated in SGCL#2's circulator load resistor since there is no
> > energy flowing at the voltage maximum.
>
> Nope, a directional coupler can still separate out the forward
> and reflected waves even at voltage and current nulls.

It is a bit early to move to the complexity of directional couplers.
I am still stuck on how energy can flow through a point on the circuit
where the current or voltage is always 0.

Using instantaneous Power = Vinst x Iinst, the power at such a point
must always be 0, leading to the conclusion that no energy is flowing.

So how does energy flow through a point in the circuit where the voltage
or current is always 0.

Is it that Pinst != Vinst x Iinst?
Or is it that there is no point in the ideal experiment presented where
V or I is always 0?
Or have I missed something in the chain of reasoning above?

...Keith

957. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 01:21:12 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F0E112B.2020802@get.lost>
Source record: 112901
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Paul Vanasse wrote:

> I don't think we need a conclusionary synopsis Zoran, I believe just about
> everyone here knows full well how to read.

It is very easy to skip over my message if it annoys you. Just hit a
down arrow button. I wouldn't agree on the reading skill point, though.

> Did you ever stop and consider that because the responses to your original
> post were such, that perhaps the whole BPL matter is the usual ARRL
> exacerbated hyperbole?

Yes, I considered it for about a millisecond and then promptly dismissed
it based on my previous knowledge of the anti-League posts and feelings
from a small but vocal group of people. The only way you could get those
types on board against the BPL is if the ARRL took a pro-BPL position.
Then you'd never hear the end of it, and demonizing the League would go
on for years, like it has with no-code, for example.

> ....In the old'en days they called it "Much
> ado about nothing".

Yeah, sure. What, if I may ask, is your profession? If you are an
electrical engineer and you don't consider BPL (a dense, unshielded,
unbalanced grid of random-length wires carrying packets of digital
signals with all their harmonics straight to your shack) a huge
potential source of HF noise, then I don't know what to say. Have you
read on the subject? Have you seen the measurements from the field in
other parts of the world? All of this fails to convince you because you
know for a fact that this is just a conspiracy on the part of the ARRL
to swindle you for a couple of bucks?

Fine. Don't support it if you don't want to. Don't join the ARRL. Work
against it any chance you get. After all, CB has no representation and
organization and they've never been in a better shape, huh?

73 .... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

958. Rockwell-Collins PropMan 2000 - solution for issues with internet space wx data retrieval

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 01:45:18 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <OEoPa.75$lL.7781@nnrp1.ptd.net>
Source record: 112904

For those of you who have the Rockwell-Collins "PropMan 2000"
propagation software ...

You may have noticed recently, as did I, that the program was no
longer able to correctly retrieve "space weather data" from the internet
that is used to improve the accuracy of its predictions and predict
"ion storms," etc. based on current solar/geomagnetic conditions.

The problem seems to be that the folks at NOAA have made some
changes in which GOES satellites are used for x-ray and proton
measurements, with the result that some files that PropMan looks for
either no longer exist (have been replaced with equivalent data in the
same format, but with different filenames, due to being sourced from
instruments on a different GOES satellite) or no longer seem to be
available via "GOPHER" ... and the directory names have changed
for access via http ...

After some poking around the NOAA website where the data resides
and hacking on the "propman.ini" file, I have come up with a propman.ini
file that works.

This new "propman.ini" file is available from my personal website at:

http://home.ptd.net/~wk3c

and may be freely used for non-commercial purposes by radio amateurs.

Placing this new propman.ini file in the same directory as your other
PropMan
2000 files solves the problems with ion storm warnings, etc.
(First, make a backup of your current propman.ini file by renaming it to
"propman.ini.original" or something like that ...)

There is ONE exception ... the USAF and NOAA have discontinued
the distribution of a file called "HFRP.txt" from which PropMan 2000
parsed the SSN data. This does not cause internet updates to fail, and
the SSN data is available from the following URL:

http://www.nwra-az.com/spawx/env_latest.html

Look in the row labeled NWRA SSNe: and pick the right-most value
(the data for the current day) and manually enter that into the SSN
box in your PropMan path dialog box and that will work fine.

I am in touch with the engineer in charge at Rockwell-Collins and they
appear to be working on considering a re-write of the PropMan 2000

parser to get the SSN data from the URL above ... I have suggested an
alternative approach that would not require changes to the existing
PropMan 2000 program and am awaiting a reply.

73,
--
Carl R. Stevenson - wk3c
Grid Square FN20fm
http://home.ptd.net/~wk3c

NCI-1052
Executive Director, No Code International
Fellow, The Radio Club of America
Senior Member, IEEE
Member, IEEE Standards Association
Chair, IEEE 802.18 Radio Regulatory Technical Advisory Group
Member, Wi-Fi Alliance Spectrum Committee
Co-Chair, Wi-Fi Alliance Legislative Committee
Member, QCWA (31424)
Member, ARRL
Member, TAPR
Member, The SETI League

Join No Code International! Hams for the 21st Century.
Help assure the survival and prosperity of ham radio.
<http://www.nocode.org>

959. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 01:53:08 UTC
From: dplatt@radagast.org
Message-ID: <vgs644b25v3644@corp.supernews.com>
Source record: 112905

>Dave,
>
>Thank you once again.

You're most welcome. The real thanks go, of course, to the folks who write those various wonderful educational pages. I've learned a very great deal over the past year or so.

>I'm going to run a maximum of 100W with my Icom 725 and assume (hope) that
>the power level is low enough to avoid problems.

Ummph. You may have problems there.

Anecdotal evidence suggests that in a lot of residential situations, running more than about 25 watts HF is fairly likely to create a situation known as "fundamental overload" in nearby consumer-grade TV tuners and FM radios. The strong RF signal saturates the tuner electronics, forcing them into nonlinear behavior. It doesn't help even if your RF signal is perfectly "clean" and has no harmonic content (an impossible ideal) - even a pure signal will result in these TVs and other such devices misbehaving (herringbone displays, etc.).

Adding a high-pass filter at each affected TV set's RF input, and adding choke filters to the power cord and A/V cables, can help a lot.

The same is true for telephones. I know that when I key up a 20-meter PSK31 signal at about 20 watts, my wife can hear it on her telephone (I really need to add some ferrites) and my antenna's outdoors up at about 25'.

With an in-the-attic antenna you may need to keep power down to 5-10 watts to avoid interference.

That's the bad news. The good news is that cutting power from 100 watts to 10 is only 10 dB, which isn't even one S-unit on a typical amateur receiver. Under most circumstances it won't make a big difference in how audible your signal is. There's one particularly skilled operator in my area who regularly breaks CW pileups to South Pacific islands, running only a couple of watts, from an HF mobile rig in his car. [Maybe if I play around with this stuff for a few decades I might pick up a fraction of that skill... I should be so lucky!]

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will

boycott any company which has the gall to send me such ads!

960. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 02:47:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0e276b_6@corp.newsgroups.com>
Source record: 112906

kd1@sympatico.ca wrote:
> I am still left quite confused by this. In the experiment proposed (a
> slight variation on Cecil's), at a voltage maximum the current IS a constant 0
> (or similarly, at a current maximum, the voltage IS a constant 0). These 0
> volts and currents can be measured.

But they are zero only because of superposition. The forward current
is NOT zero and the reflected current is NOT zero. The fact that the
NET current is zero just means that all the energy moved into the
electric field at that point but it still exists.

> If we accept that instantaneous power is P = V x I, then at any point on
> the line where the voltage or current is a constant 0, the power must be a
> constant 0.

Nope, for standing waves, if the H-field is zero, all the energy is in the
E-field. If the E-field is zero, all the energy is in the H-field. The field
that is zero is undergoing destructive interference. The other field is
always undergoing an equal magnitude of constructive interference.

> From the definition of power, it would seem that where ever the power is
> a constant 0, the energy flowing must be a constant 0.

Nope, if the current is zero, the voltage is at its maximum value. You
cannot have a maximum voltage with zero energy.

> So I do not understand how energy can get through a point in a circuit
> where the voltage or current is always 0, ...

That's one of the problems with being seduced by the steady-state model. :-)
Look at the component forward and reflected waves and all will become clear.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

961. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 02:54:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0e2913_6@corp.newsgroups.com>
Source record: 112907

kd1@sympatico.ca wrote:
> It is a bit early to move to the complexity of directional couplers.
> I am still stuck on how energy can flow through a point on the circuit
> where the current or voltage is always 0.

There are two voltages and two currents. Sometimes they are 180 degrees
out of phase and their sum is zero. But those waves don't know each
other exists. Someone forgot to tell them that they aren't supposed
to carry any energy so they just keep on carrying energy.

> Using instantaneous Power = Vinst x Iinst, the power at such a point
> must always be 0, leading to the conclusion that no energy is flowing.

No *NET* energy is flowing but the forward energy and reflected energy
just keep on flowing, carrying an equal amount of energy in each direction.
In a transmission line with reflections, there are always forward and reflected
transactions. Please don't be seduced by the steady-state religion.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

962. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 03:01:37 UTC
From: MikeN <mnewman@clear.net.nz>
Message-ID: <s2asgvgja5l39jljjh56ije314igpc7fi3@4ax.com>
Source record: 112908

Thanks Tom

What 1:1 balun construction would you recommend.

MikeN ZL1BNB
On 10 Jul 2003 12:04:58 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>MikeN <mnewman@clear.net.nz> wrote in message
news:<b64qgv876u17b3ilo48jsmuo06jq41g0jf@4ax.com>...
>> Hi all.
>>
>> I've got a 70 cm Yagi which is to be matched to a 50ohm feedline,
>> feeding a 70cm repeater (5MHz split).
>>
>> The Yagi has an impedance of 12.7+j0.8 (so 4NEC2 tells me).
>
>...
>
>I've simply used a folded-dipole (equal diameters for the two
>sections) driven element in similar cases. That should give you very
>close to 50 ohms. It's balanced, so use a 1:1 balun to get to 50 ohm
>coaxial.
>
>Cheers,
>Tom

963. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 03:15:28 UTC
From: MikeN <mnewman@clear.net.nz>
Message-ID: <v4asgvgq8s430j2v7vadkgktpu0hm7et4f@4ax.com>
Source record: 112909

Thanks Sjoerd.

Two questions arise.

I'd thought earlier of using a 1/4 wave transformer, using paralleled
50 ohm coax to give me 25 ohms, which transforms the 12.7ohm antenna
to to 49, say 50 ohms, but isn't the DK7ZB match still an unbalanced
feed to a balanced radiator?

Won't this perturb the directivity?

Thanks

MikeN ZL1BNB

On Thu, 10 Jul 2003 22:15:57 +0200, "Sjoerd"
<sjoerd.nederveenDITWEG@home.nl> wrote:

>You might also try the so called DK7ZB-match, easy to build and my 2m
>antenna works fine with this match
>
>see: http://www.qsl.net/dk7zb/dk7zb-match.htm
>
>Good luck!
>
>Sjoerd PE2SVN
>The Netherlands
>
>"MikeN" <mnewman@clear.net.nz> schreef in bericht
>news:b64qgv876u17b3ilo48jsmuo06jq41g0jf@4ax.com...
>> Hi all.
>>
>> I've got a 70 cm Yagi which is to be matched to a 50ohm feedline,
>> feeding a 70cm repeater (5MHz split).
>>
>> The Yagi has an impedance of 12.7+j0.8 (so 4NEC2 tells me).
>>
>> What are appropriate matching systems to give me the best matching so
>> that the Tx-Rx duplexer peforms up to its bandpass and notch
>> specifications.
>>
>> Thanks
>>
>> MikeN
>

964. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 03:31:53 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hhtu2ny.pminews@netnews.comcast.net>
Source record: 112910
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Thu, 10 Jul 2003 07:08:25 GMT, Zoran Brlecic wrote:

>FAA does not use SW, afaik, so they couldn't care less.

FAA contracts their HF comms to ARINC.

>Ship to shore? What ship to what shore? They use satellites.

Tell that to a good friend of mine who is chief tech for Globe
Wireless (licensee of maritime public coast stations KPH and KFS)
who is responsible for maintaining 23 5 KW HF marine transmitters in
the San Framcisco area. Yes, HF - not for CW, not for SSB, but for
SITOR, the commercial version of AMTOR/FEC, tied into the Internet
for e-mail.

Satellites are "great" for occasional use until one gets the bill.
Globe Wireless' HF circuits carry e-mail traffic 24/7 according to him.

But I agree -- BPL is a danger to HF communications. No doubt about
it.`

--
73 de K2ASP - Phil Kane

From a Clearing in the Silicon Forest
Beaverton (Washington County) Oregon

965. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 03:42:12 UTC
From: Brenda Ann <brendad@shinbiro.com>
Message-ID: <bel9i9nld1@news1.kornet.net>
Source record: 112911
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

"Phil Kane" <Phil.Kane@nov.shmovz.ka.pop> wrote in message
news:cuvyxnansvbet.hhtu2ny.pminews@netnews.comcast.net...
> On Thu, 10 Jul 2003 07:08:25 GMT, Zoran Brlecic wrote:
>
> >FAA does not use SW, afaik, so they couldn't care less.
>
> FAA contracts their HF comms to ARINC.
>
> >Ship to shore? What ship to what shore? They use satellites.
>
> Tell that to a good friend of mine who is chief tech for Globe
> Wireless (licensee of maritime public coast stations KPH and KFS)
> who is responsible for maintaining 23 5 KW HF marine transmitters in
> the San Framcisco area. Yes, HF - not for CW, not for SSB, but for
> SITOR, the commercial version of AMTOR/FEC, tied into the Internet
> for e-mail.
>
> Satellites are "great" for occasional use until one gets the bill.
> Globe Wireless' HF circuits carry e-mail traffic 24/7 according to him.
>
> But I agree -- BPL is a danger to HF communications. No doubt about
> it.`
>
> --
> 73 de K2ASP - Phil Kane
>
> From a Clearing in the Silicon Forest
> Beaverton (Washington County) Oregon

I still hear maritime telephone service on 8 MHz USB.

Also in-flight comms over oceans are done with HF.

966. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 04:18:26 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <o7esgvckb77o8mn3k93gdv9qeumnd9ruep@4ax.com>
Source record: 112953

On Wed, 09 Jul 2003 22:11:47 GMT, "Paul Vanasse" <pvanasse@cox.net>
wrote:

>
>"Zoran Brlecic" <...WA7AA...@get.lost> wrote in message
>news:3F0BAC2C.2040401@get.lost...
>> A measly $25 - $100 can help prevent your $5000 equipment from becoming
>> an expensive coffee cup warmer.
>>
>>
>> 73 .... WA7AA
>
>Uhhh, this one is even better than Christian Science. What about all the
>government, military, ship to shore, and navigational use of the HF
>spectrum? Do you think that the FCC is actually going to allow malicious
>interference to disrupt these services?
>
>Whether the ARRL is involved or not, and if the statement concerning noise
>is true, it will never happen.

Given FCC head commissioner Michael Powell's basic orientation -- he
used to be a lawyer/lobbiest for large media company's, and he
recently has turned the whole radio industry over to the Clear Channel
folks -- where do you think he might come down in this controversy? I
suspect he'd be much more aligned with the BPL'ers than with a bunch
of crummy hams polluting nice neighborhoods with their antennae.

Bob
k5qwg

>
>Save your BPL money and take your girl friend out for a Prime Rib dinner and
>a night on the town......You'll get a hell of a lot more bang for your buck.
>

967. Re: Best vertical 20m design?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 04:25:55 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <q1fsgv07dciduibs5otajk9uj524i8gpl9@4ax.com>
Source record: 112954

On Thu, 10 Jul 2003 15:23:05 GMT, "numeric" <numeric@worldnet.att.net>
wrote:

>Thanks to all those who replied; the suggestions have been helpful. Looks
>like its going to hard to beat the vertical dipole.
>

See http://www.cebik.com/v20.html

Bob
k5qwg

968. TA-33 Beam question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 05:08:04 UTC
From: GS <greatsurplus@hotmail.com>
Message-ID: <6f61b2074b4a14c7f773cbf6144bac25@news.meganetnews.com>
Source record: 112912

Hello all,

Funny how things work. I have been trying to sell my Mosley
TA-33 beam and AR-33 CDE rotator. I bought them in 97
fully intending to put them up, but never got to it. Been sitting
in the backyard since then, on the roof of my shed, disassembled.
The rotator of course was in the house.

But after a few days of no local interest in it, I think I've decided
I want to keep it! I got it all out on the front lawn today, and
layed out all the pieces to match the assembly instructions,
and wow! It looked really cool and now I think I want to keep
it - I've never had a beam, so now I'm thinking I'd like to put it
up and see what it's like to work 20 with a directional antenna.

But all I have is the assembly part of the manual - how difficult
is it to tune? Can I prop it on a ladder on my lawn and tune
it 'on earth' using my MFJ antenna tuning meter?

And since I don't plan to install a tower on this particular whim,
can I get away with putting it on a short tripod bolted to the
roof on the second floor? Or is that a no-no both for structural
reasons as well as proximity to the composition shingles?

Any advice would be appreciated!

Dave WB7AWK

969. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 05:17:07 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hhu8f57.pminews@netnews.comcast.net>
Source record: 112913
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Thu, 10 Jul 2003 18:42:17 -0500, H. Adam Stevens wrote:

>"> I spent 28 years at the FCC...."
>You poor thing. Why?

After ten years in the civilian side of the military electronics
field, where yearly project cancellations and ensuing layoffs were
the way of life, I wanted a steady job so I could feed my family.

Anyhow I was good at violating peoples' privacy, catching crooks,
and prosecuting them.... <ggg>

>It took 3 years in broadcasting to run me back to college.

Hey, I finished my doctorate while I was with the Commission....
<ggg>

--
73 de K2ASP - Phil Kane
FCC San Francisco
District Director (retired)

970. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 05:17:08 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hhu8le8.pminews@netnews.comcast.net>
Source record: 112914
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 00:42:54 GMT, Dave Shrader wrote:

>The BPL grid includes power distribution on medium power lines right
>down to the 240 volt feed that comes right into your house!! Is that
>close enough to create a +60 dB noise level??

My services are underground. Anyone who says that buried cables
can't be heard above ground has never chased cable TV leakage in an
buried system (I have....).

--
73 de K2ASP - Phil Kane

971. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 05:32:49 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hhu9af9.pminews@netnews.comcast.net>
Source record: 112915
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 12:42:12 +0900, Brenda Ann wrote:

>
>I still hear maritime telephone service on 8 MHz USB.

Not by KFS/KPH, though. AT&T closed their SF HF station (KMI) a
couple of years ago so I don't know who is furnishing that service
now. It may be ARINC (Aeronautical Radio, Inc) which is big in HF
SSB. I'll try to find out.
>
>Also in-flight comms over oceans are done with HF.

That's ARINC.

--
73 de K2ASP - Phil Kane

972. Re: TA-33 Beam question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 05:33:46 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F0E4C3A.43CDC285@cwis.net>
Source record: 112916

Dave,
Rather than setting the beam on a ladder to try to
tune it, stand it up so that it's pointed straight up.
The step-ladder thing won't get it even close.
As for using a tripode on your roof, it just depends
on how your house is built. Is it in good structural
shape? Built strong enugh to take the weight and other
stresses that will be present? Beats me! You'll have
to answer that.
'Doc

PS - If you decide to sell, I'll give you $20, you pay
shipping. After all, it's at least 7 years old. All
the electrons have leaked out of it by now...

973. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 05:35:22 UTC
From: dplatt@radagast.org
Message-ID: <vgsj4q2n2dt579@corp.supernews.com>
Source record: 112917

>Thanks Sjoerd.
>
>Two questions arise.
>
>I'd thought earlier of using a 1/4 wave transformer, using paralleled
>50 ohm coax to give me 25 ohms, which transforms the 12.7ohm antenna
>to to 49, say 50 ohms, but isn't the DK7ZB match still an unbalanced
>feed to a balanced radiator?
>
>Won't this perturb the directivity?

The same thought came to my mind when I read the DK7ZB pages this afternoon (it's a neat design idea and is going into my keep-this notebook!) Seems to me there might be a pretty easy way to deal with this.

A 1/4-wavelength coax transformer for 2-meter operation, using typical V=.66C foam-dielectric coax cable is going to be just about a foot long. I'd think that one could wind the pair of coaxes through a modest-sized ferrite toroid core a few times and tie-wrap the ends firmly into place, rather than just running them out along the boom and back. This should create a reasonably effective choke balun... something like a Reisert 1:1 style, but acting as an impedance transformer thanks to the paralleled coaxes. You'd get both the 12.7 : 50 ohm transformation, and the balancing, out of one package.

You'd probably want to wind only part of the impedance transformer around the ferrite, leaving a few inches to make the connection to the feedpoint (thus keeping the balun itself from coupling into the radiating element too badly).

Another possibility: in his book on baluns and ununs, Jerry Sevick discusses this basic sort of application, and suggests that a 1:1 balun of this sort can be used as an isolation transformer by putting it 1/2 wavelength back down the coax from the balanced-antenna feedpoint (a technique which he credits to one of Roy W7EL's articles). It seems to me that this would work equally well for one of these 1/4-wave-impedance-transformers-wrapped-into-a-balun. Mount it back behind the reflector, run 1/2 electrical wavelength of any convenient coax (or maybe open-wire line?) up to the antenna feedpoint, and it'd still perform both the balanced-to-unbalanced conversion, and the proper impedance transformation in that location.

So - does this make sense, or am I being stupid and missing something?

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

974. KLM or M2 KT34XA or KT36?? Please help me ID my new antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 07:08:30 UTC
From: ve7khzr@yahoo.com
Message-ID: <84965f10.0307102308.43f56d8e@posting.google.com>
Source record: 112918

I know there are some real antenna gurus on this group and wanted your help to ID an antenna I just picked up. First off, it's big, real big, well bigger than my MP-33. I know it's either a KLM or M2 KT34XA I think, but what's throwing me off is the boom. I thought, from the last KLM catalog I have, that the boom was split in half, right in the middle. The one I have is split about 1/3 - 2/3 and is heavy wall 1/4" AL pipe, 32' total. The elements are definately KLM as they have the shorting straps, not the machined ones like M2 use. Blue capacitor caps on the trap portion. I suppose someone could have built a new boom??

Anyway, my plan for now was to to try to use it as the KT34A, which was a very popular 4 el. 16' boom, then when we move, add the XA portion which is another 16' and 2 elements but the way this is configured, I will have to get a new 16' boom to use it as the 34. Can it be used like this without changing the element tuning? It's in pretty decent condx.

A few Q's. When did KLM shut down? When did they start using the "blue" caps. I hear there are "new" dimensions available for the element spacing and tuning. Are these posted anywhere or on someones web site? Could this also be an M2 or have they always used machined shorting straps?

I will take some pictures of the unit if it will help ID it.

Thanks folks. Appreciate the help.

Cheers!

Paul
VE7KHz

975. Want manual and/or engineering specs for Tristao MA-550 tubular tower

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 07:17:45 UTC
From: Michael Herron <Hurricane145@worldnet.att.net>
Message-ID: <twtPa.49852$3o3.3305812@bgtnsc05-news.ops.worldnet.att.net>
Source record: 112819

Can anyone send me a copy or lead me to a manual or engineering specs for a Tristao MA-550, 55 foot tubular tower, pretty much the same as a US towers MA-550 if not identical. I have heard that there is a ham in calif that has manuals etc. for many of the older towers but don't know who it is or if it is true or not. I would appreciate any assistance on this thank you. Mike Herron K7MH.

976. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 11:16:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0e9ebd_1@corp.newsgroups.com>
Source record: 112820

Peter Brackett wrote:
> Cecil:
>>It certainly does resolve any problems. All waves contain energy. All
>>waves transfer that energy when they are dissipated or radiated or when
>>they are destroyed by wave cancellation.

> No they don't, and...

Changing the energy in a TEM wave to heat is obviously a transfer of
energy. Radiating TEM energy from an antenna is obviously a transfer
of energy. When TEM wavefronts are destroyed by wave cancellation in
a transmission line, they cease to exist and must therefore transfer
their energy somewhere. There is simply no other possibility.

At an impedance discontinuity match point with reflections, the
destructive interference energy is transferred in phase to the
constructive interference event occurring in the other direction.
Please see the "Mental Exercise" thread cross posted from
sci.physics.electromag

> What *exactly* is your definition of a "wave"?

"traveling wave - The resulting wave when the electric variation
in a circuit takes the form of translation of energy along a
conductor, such energy being always equally divided between
current and potential forms." i.e. P=|V*I| and Z0=V/I
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

977. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 11:27:47 UTC
From: "Martin, VK2UMJ" <vk2umj@REMOVEyahoo.com.au>
Message-ID: <bem6nt$g61$1@austar-news.austar.net.au>
Source record: 112821

"Mikael Mortensen" <mikael@danbbs.dk> wrote in message
news:3f0d6470$0$13242$edfadb0f@dread15.news.tele.dk...
> Hi!
>
> It goes from 25.165 to 29.695 Mhz..
>
> Regards
> Mikael
>
>

If you're not a licensed ham, and by the sound of your post you're not, then it really doesn't matter what antenna you use because you wont be transmitting over that range anyway, will you....

If you are a licensed ham, then you should have the basic technical knowledge to know how to get an antenna to tune to the frequencies you need to use, and I don't really think the 10m band covers 25 to 29 Mhz........

Just my useless bit of advice...

Martin, VK2UMJ

978. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 11:29:45 UTC
From: nightowls627@cs.com
Message-ID: <74f89aaf.0307110329.34722dfb@posting.google.com>
Source record: 112822

Sorry about that! Saw 10M and didn't think about the frequencies.
Bottom line is a dipole works well and is simple to build yourself.

> "Tarmo Tammaru> > I don't think he means 10 m. Said 27-28 MHz.
> >
> >

979. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 12:11:59 UTC
From: Paul Vanasse <pvanasse@cox.net>
Message-ID: <jQxPa.7976$o86.2980@news1.central.cox.net>
Source record: 112823
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Zoran Brlecic" <...WA7AA...@get.lost> wrote in message
news:3F0E112B.2020802@get.lost...
> Paul Vanasse wrote:
>
> > I don't think we need a conclusionary synopsis Zoran, I believe just
about
> > everyone here knows full well how to read.
>
> It is very easy to skip over my message if it annoys you. Just hit a
> down arrow button. I wouldn't agree on the reading skill point, though.
>

So, in other words you're not looking for independent opinions at all (as
per you original posting) because you've already made up your mind that the
BPL is a valid issue and anyone who disagrees with you is a simp. Sorry
Zoran, some people wont throw their hard earned money at an issue just
because you say they should.....

My god, do I actually have to explain this: The Amateur portion of the HF
spectrum is not even 1/6 of the total spectrum. The remainder is controlled
by COMMERCIAL and GOVERNMENT interests that have a hell of a lot more to
lose with BPL's than amateurs ever will. Do actually believe that the ARRL
is going to be the sole group that will rescue the bands from these evil
power companies? Get real Zoran.

If you cant take someone disagreeing with you, try arguing in front of a
mirror.

980. 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 12:18:41 UTC
From: Terry <tsanford@nf.sympatico.ca>
Message-ID: <3F0EAB21.93BBA55D@nf.sympatico.ca>
Source record: 112824

May I insert a practical subject into this news group which frequently discusses SWRs, the speed of electromagnetic propagation and other exotica?
Ever see those adverts where a hefty guy wearing construction Safety Helmet is hanging from one little spot of 'Krazy Glue' from a steel beam?
Last winter I broke a very nice 8 inch (straight glass not an egg shell) insulator into two almost equal pieces. :-(
A 'clean' break in the ribbed section, no lost pieces or chips of glass, the broken two pieces mated perfectly.
So a couple of days ago I 'glued' it with Crazy Glue; one of those cyano-cryolate (sp?); or whatever the proper name is!. Used a generous but not too overflowing amount.
At house temp. it 'seems' to have made a very strong join. And, holding it, so almost, did my fingers when the vapour from the glue seemed to flow away from the join and collect on them! However I've escaped.
Whether I will use it again I'm not sure; probably can't depend on it.
But I thought I might set up a test jig; by hanging from it a plywood platform a few inches above the ground and loading that with concrete blocks/bricks etc.
Any ideas comments what the 'strength' of an unbroken one would be. That is to say what would be a 'normal loading for an insulator of this type. I've seen pictures of wire antennas with incredible loads of, say, ice, on them. And often something will break; but those glass insulators look incredibly strong, unless you drop one as I did.
Regards. Terry.
A few miles from where, in 1901, Marconi received the first Transatlantic wireless telegraph signal.

981. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 12:49:38 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F0EB141.6264ED0A@gte.net>
Source record: 112825

Terry wrote:

> May I insert a practical subject into this news group which
> frequently discusses SWRs, the speed of electromagnetic
> propagation and other exotica?
> Ever see those adverts where a hefty guy wearing construction
> Safety Helmet is hanging from one little spot of 'Krazy Glue'
> from a steel beam?
> Last winter I broke a very nice 8 inch (straight glass not an egg
> shell) insulator into two almost equal pieces. :-(
> A 'clean' break in the ribbed section, no lost pieces or chips of
> glass, the broken two pieces mated perfectly.
> So a couple of days ago I 'glued' it with Crazy Glue; one of
> those cyano-cryolate (sp?); or whatever the proper name is!. Used
> a generous but not too overflowing amount.
> At house temp. it 'seems' to have made a very strong join. And,
> holding it, so almost, did my fingers when the vapour from the
> glue seemed to flow away from the join and collect on them!
> However I've escaped.
> Whether I will use it again I'm not sure; probably can't depend
> on it.
> But I thought I might set up a test jig; by hanging from it a
> plywood platform a few inches above the ground and loading that
> with concrete blocks/bricks etc.
> Any ideas comments what the 'strength' of an unbroken one would
> be. That is to say what would be a 'normal loading for an
> insulator of this type. I've seen pictures of wire antennas with
> incredible loads of, say, ice, on them. And often something will
> break; but those glass insulators look incredibly strong, unless
> you drop one as I did.
> Regards. Terry.
> A few miles from where, in 1901, Marconi received the first
> Transatlantic wireless telegraph signal.

Cyanoacrylates (crazy glue) are near worthless in a humid and/or UV
environment- guaranteed to fail.

The anaerobic cements by Loctite create a bond stronger than the glass.
Pick up some rear view mirror cement with its primer.

Dale W4OP

982. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 13:27:40 UTC
From: Mike Coslo <mjc5@psu.edu>
Message-ID: <3F0EBB4C.7030903@psu.edu>
Source record: 112826
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Just for the record, the top quote was mine, and the other two were Art's.

My own opinioin is that if BPL is adopted, we might as well throw all
interference rules out the window.

- Mike KB3EIA -

Dave Shrader wrote:
> Excerpt from the ARRL Release:
>
> "Studies appended to the League's comments suggest received signal
> levels of BPL broadband noise at typical amateur stations would be
> anywhere from 33.7 dB to 65.4 dB higher than typical ambient noise
> levels in the worst-case situations. "BPL cannot be deployed using
> amateur allocations in the MF, HF and VHF bands without severely high
> interference potential," the ARRL reiterated. "
>
> DD, W1MCE
>
> The ARRL has submitted 120 pages of comments including analysis and
> related data.
>
> The BPL grid includes power distribution on medium power lines right
> down to the 240 volt feed that comes right into your house!! Is that
> close enough to create a +60 dB noise level??
>
> DD, W1MCE
>
>
>
> Mike Coslo wrote:
>
>>
>> Of course not! But if you live in an area criss-crossed by active
>> lines, and have the sigs coming into your house you can expect some
>> pretty strong interference.
>>
> [SNIP]
>
>>
>>
>>> Now I have heard it stated that from 14 thru 30 Mhz the actual
>>> noise level is far below the normal radios thresh hold, so what

>>> will be the TRUE noise level that we would have to compete with?
>>
>>
>> [SNIP]
>
>
>
>>> If we are to use our number strength wisely for the benefit of
>>> the hobby then it would behoove the ARRL to be very specific
>>> with respect to the possible danger so that the label of
>>> obstructionists will not be aplied at a future date.
>>> may have
>>> Regards
>>> Art Unwin KB9MZ....XG
>>
>>
>

983. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 13:34:07 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <j1zPa.35451$H17.10733@sccrnsc02>
Source record: 112827

"Terry" <tsanford@nf.sympatico.ca> wrote in message
news:3F0EAB21.93BBA55D@nf.sympatico.ca...

> Last winter I broke a very nice 8 inch (straight glass not an egg
> shell) insulator into two almost equal pieces. :-(
> A 'clean' break in the ribbed section, no lost pieces or chips of
> glass, the broken two pieces mated perfectly.
[snip]
> Regards. Terry.

Terry -

I would recommend finding a glass blower (either artistic or commercial)
I may be possible to "reheat" both sections - while still retaining their
shape -
and splice the pieces together in a "plastic state"

w9gb

Do not use Reply
Only reply through ARRL forwarding service to W9GB

984. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 13:47:43 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307110547.2db5a230@posting.google.com>
Source record: 112828
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

What reults in broad band receivers
can one expect if a ham fires up a kilowatt
when in close proximity to a power line ?

Art

985. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 14:26:49 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F0EC91F.DD5E367B@att.net>
Source record: 112829
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Phil Kane wrote:

> On Fri, 11 Jul 2003 12:42:12 +0900, Brenda Ann wrote:
>
> >
> >I still hear maritime telephone service on 8 MHz USB.\

In the Sat-com age??? How Luddite can you get???

>
>
> Not by KFS/KPH, though. AT&T closed their SF HF station (KMI) a
> couple of years ago so I don't know who is furnishing that service
> now. It may be ARINC (Aeronautical Radio, Inc) which is big in HF
> SSB. I'll try to find out.
> >
> >Also in-flight comms over oceans are done with HF.
>
> That's ARINC.

Last time I flew to Seattle aboard a 757 I stuck my GPS up to the window and
read out the aircraft speed....526MPH.
Seems like they could use a more upscale comm system aboard planes when such
technology is that common.

986. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:19:09 UTC
From: richardharrison@webtv.net
Message-ID: <19106-3F0ED56D-137@storefull-2314.public.lawson.webtv.net>
Source record: 112836

Keith wrote:
"Those 0 volts and currents can be measured."

The phase of the incident wave at a distance from the generator is the phase that existed at the generator at an earlier time proportional to distance.

Take a point on the signal traveling on a transmission line which is reflected back toward the generator. It encounters the later generated signal traveling toward the reflection point.

Suppose the reflection is from an open circuit. At the open, incident and reflected waves have the same amplitude and phase. Their voltages add arithmetically. Open-circuit reaction reverses the phase of the reflected current, so incident and reflected currents add to zero.

Back from the reflection, phase of the incident wave advances with distance. We see a signal which was generated more recently the farther back toward the generator we look.

Back from the reflection, phase of the reflected wave lags with distance. We see a signal which was generated farther back in time the farther back toward the generator we look.

At those fixed points on the transmission line where the incident and reflected voltages are exactly out-of-phase, they add to zero.

At those fixed points on the transmission line where the incident and reflected voltages are exactly in-phase, they add to a double of the incident voltage.

The forward (incident) and reflected waves retain their distinctions. But it takes a directional coupler to separate them. The pattern of standing waves is manifested by the sum of the forward and reflected waves.

The forward wave consists of a voltage everywhere associated with a current equal to that voltage over Zo.

The nature of the reflected wave is the same, except it travels in the opposite direction.

Best regards, Richard Harrison, KB5WZI

987. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:29:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dqktgvknuabum352m5c816rdgvb563ptcb@4ax.com>
Source record: 112831
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 14:26:49 GMT, Dick Carroll <dickc58@att.net>
wrote:
>> >Also in-flight comms over oceans are done with HF.
>>
>> That's ARINC.
>
> Last time I flew to Seattle aboard a 757 I stuck my GPS up to the window and
>read out the aircraft speed....526MPH.
> Seems like they could use a more upscale comm system aboard planes when such
>technology is that common.

Hi Dick,

It's a matter of economics and regulation more than design, but also
about design.

Electronic gear in the air must meet stringent considerations. These
are based on the simple fact of weight and power consumed. There is a
heat budget to meet, there is a power budget to meet, and there is a
physical volume budget to meet. Equipment must be designed to
co-exist with other equipment (they share the same heat vent, thus the
heat budget). There is also legacy systems to consider and to
interface to. The flight controllers had or have been using tube
equipment (no, not just their screens, some computers).

Much of this is probably already anticipated by state of the art
designs (except for the packaging). Heat and power issues are by and
large far less imposing than older stuff, but packaging still must
conform to other equipment that has no "modern" replacement.

Then back to the economics and regulation. ARINC places stringent
requirements that are by and large stringent in the top loading of
engineering time. That is, it takes a cadre of support personnel to
research and cross-correlate all the various issues demanded to find
its way into a product. When I designed the flight recorder, it was
to MIL-SPEC 883B which is no regulatory slouch. How much do you think
your HF rig would cost against such a standard? $30K would be a good
place to start. Then there is the retro-fit cost to meet the new
system. Abandoning HF for satellite means air and ground systems must
change to follow the trend (it is only a trend after-all) and this ups
the ante such that a large cadre of support people must be
co-ordinated to follow to a long-term schedule of mods and upgrades
(the schedule, in turn, having taken a couple of years to fashion).
Even changing the antenna type to follow the migration from HF to SHF

impacts the air frame and issues of flight safety. This may seem absurd on the basis of civil aviation which can opt into some gear, but commercial aviation must be done across the board.

73's
Richard Clark, KB7QHC

988. Tuner detunes antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:37:57 UTC
From: David Cook <nospam.davepc4@comcast.net>
Message-ID: <pRAPa.33186$OZ2.5556@rwcrnsc54>
Source record: 112832

I recently bought an MFJ-986 tuner and have been using it will good results on a balanced feed antenna, but I just found an odd behavior. I have a 40 and 20 meter dipole that I've used for several years, and 20 meter elements are tuned to 14.125 which gives me a decent SWR on CW and the low end of SSB. I thought I'd hook it to the tuner so I could use the top end of 20 meters and tune the off-resonance SWR down. I found that when I hooked the antenna to the tuner and fed it through the Coax1 Direct, the 1:1 SWR point shifted down about 13.950! I took the tuner out of the circuit and it again tunes at the normal frequency. So I tried it on the Coax 2 connector and found that that one shifted the 1:1 SWR frequency down about 14.050. I called MFJ technical support and they, of course, had no clue. I also fiddled with the tuning knobs, thinking that there might be some interaction inside the box even though the coax was in the direct connect mode, but no interaction found. The 40 meter dipole seems stable, as far as the resonance shifting goes, but I haven't done much testing with it yet. Has anyone seen/heard of anything like this with the MFJ-986 or any similar tuner?

Thanks and 73,
-- Dave, WA0TTN

989. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:38:36 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F0ED9F2.59877C93@att.net>
Source record: 112833
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Paul Vanasse wrote:

> The Amateur portion of the HF
> spectrum is not even 1/6 of the total spectrum. The remainder is controlled
> by COMMERCIAL and GOVERNMENT interests that have a hell of a lot more to
> lose with BPL's than amateurs ever will.Do (u) actually believe that the ARRL

> is going to be the sole group that will rescue the bands from these evil
> power companies?

Not to disagree with your point Paul, but the part that makes me uneasy is the
fact that government may wind up with little or no choice because of the
big $$$$$ politicos who seem to be able to buy their way into most anything
given the right connections to the right....well, you get the point.

But the ARRL sure won't be able to stymie that fact, either, with or without
our
piddling amateur contributions. Only knowledgable, responsiple people in the
right places -with the intestinal fortitude to hang tough and fight the $$$$
flow-
will be able to head off this impending HF disaster. I have no idea if such
individuals in such places even exist today.

990. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:42:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <o3mtgvkv6vrcr6kitm9hmj72qc32jop2ua@4ax.com>
Source record: 112834

On Fri, 11 Jul 2003 09:48:41 -0230, Terry <tsanford@nf.sympatico.ca>
wrote:
>Last winter I broke a very nice 8 inch (straight glass not an egg
>shell) insulator into two almost equal pieces. :-(
>A 'clean' break in the ribbed section, no lost pieces or chips of
>glass, the broken two pieces mated perfectly.
>So a couple of days ago I 'glued' it with Crazy Glue; one of
>those cyano-cryolate (sp?); or whatever the proper name is!. Used
>a generous but not too overflowing amount.

Two problems arise. One is in the amount of handling these pieces met with your examination. Handling being literal to fingers touching what they should not. The oils in skin could easily create a poor bond (regardless of cement chosen). Two is the amount of cement used. You clearly used TOO MUCH.

>At house temp. it 'seems' to have made a very strong join. And,
>holding it, so almost, did my fingers when the vapour from the
>glue seemed to flow away from the join and collect on them!

This "house temp" description reveals the third point of failure. Cement joins invariably fail due to differences in the coefficient of thermal expansion between the cement and the material(s) being cemented. For glass, the variation of outdoor temperature could easily see the materials pop apart sitting on a picnic table, much less in service.

>Regards. Terry.
>A few miles from where, in 1901, Marconi received the first
>Transatlantic wireless telegraph signal.

Hi Terry,

Did Marconi use these 8" monsters? Take this as an opportunity to enjoy a capricious doubling of your insulator stock.

73's
Richard Clark, KB7QHC

991. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:43:03 UTC
From: Mike Coslo <mjc5@psu.edu>
Message-ID: <3F0EDB07.5050300@psu.edu>
Source record: 112835
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Art Unwin KB9MZ wrote:
> What reults in broad band receivers
> can one expect if a ham fires up a kilowatt
> when in close proximity to a power line ?
>
> Art

Not much at all if the network is properly designed. A poorly designed system (BPL) would probably experience several disruptions.

- Mike KB3EIA -

992. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:46:06 UTC
From: richardharrison@webtv.net
Message-ID: <2481-3F0EDBBE-443@storefull-2318.public.lawson.webtv.net>
Source record: 112841

Cecil, W5DXP wrote:
"---energy being always equally divided between current and potential forms---."

Except at opens and shorts, real and virtual, where amps or volts for an instant however brief are brought down to zero, which is a transfer of all energy to either the electric or magnetic field.

Best regards, Richard Harrison, KB5WZI

993. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 15:59:06 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bemmcg$6gv$1@news.service.uci.edu>
Source record: 112837

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f0da817$1_2@corp-news.newsgroups.com...
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >> I have told you time after time, that the load impedance doesn't matter
> >> and the feedline length doesn's matter.
> >
> > It matters in exactly the same way that the index of refraction of the
> > glass substrate matters.
>
> Yes, it does, which is not at all if we already know the
> reflected irradiance which is a given.

Obviously, the load determines the boundary conditions and so it is not
irrelevant. You said that it was, and that's not correct. The load
impedance is what determines the reflectivity. Go ahead and disagree.

> > :-) Yes, very technical. If a math question was posed, I must have
> > missed it.

> What is the superposed sum of the
> two above waves?

Zero.

> What happens to the intrinsic energy pre-
> existing in those waves before they cancel each other?

The answer the intrinsic energy in the waves where the waves exist is stored
in the transmission line, and nothing happens to energy where waves don't
exist. The waves in question don't convey energy from the source to the
load - obviously because they don't propagate from the source to the load.
It ain't rocket science - as you're so fond of saying.

> > Using the values above, calculate the rate of flow of energy equal to
> > V*I. That's how much energy is involved in your dilema here.

> The rate of flow of energy has to be 100 joules/sec since the energy
> in those two waves cannot stand still and cannot be destroyed.

The rate of flow of energy "in" those two waves is not 100 Joules per
second.

> We
> already know that the energy in those two waves joins the forward-
> traveling power wave toward the load.

The energy does travel forward, but not by way of those two waves.

73, Jim AC6XG

994. Re: Tuner detunes antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:01:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0edfbb$1_2@corp-news.newsgroups.com>
Source record: 112838

David Cook wrote:
> I recently bought an MFJ-986 tuner and have been using it will good results
> on a balanced feed antenna, but I just found an odd behavior. I have a 40
> and 20 meter dipole that I've used for several years, and 20 meter elements
> are tuned to 14.125 which gives me a decent SWR on CW and the low end of
> SSB. I thought I'd hook it to the tuner so I could use the top end of 20
> meters and tune the off-resonance SWR down. I found that when I hooked the
> antenna to the tuner and fed it through the Coax1 Direct, the 1:1 SWR point
> shifted down about 13.950! I took the tuner out of the circuit and it again
> tunes at the normal frequency. So I tried it on the Coax 2 connector and
> found that that one shifted the 1:1 SWR frequency down about 14.050. I
> called MFJ technical support and they, of course, had no clue. I also
> fiddled with the tuning knobs, thinking that there might be some interaction
> inside the box even though the coax was in the direct connect mode, but no
> interaction found. The 40 meter dipole seems stable, as far as the resonance
> shifting goes, but I haven't done much testing with it yet. Has anyone
> seen/heard of anything like this with the MFJ-986 or any similar tuner?

I doubt that the MFJ-986 maintains a 50 ohm Z0 through the device. What
you have probably done is introduce a short section of "transmission line"
that doesn't have a Z0 of 50 ohms and thus detuned your system.

I vary the length of my transmission line as a tuning method. You apparently
varied the length of your transmission line as a detuning method. :-)
--
73, Cecil, W5DXP

995. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:13:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3vmtgvc6hdmou63ua68b52ussao20mmekq@4ax.com>
Source record: 112839
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Fri, 11 Jul 2003 12:11:59 GMT, "Paul Vanasse" <pvanasse@cox.net>
wrote:
>My god, do I actually have to explain this: The Amateur portion of the HF
>spectrum is not even 1/6 of the total spectrum. The remainder is controlled
>by COMMERCIAL and GOVERNMENT interests that have a hell of a lot more to
>lose with BPL's than amateurs ever will. Do actually believe that the ARRL
>is going to be the sole group that will rescue the bands from these evil
>power companies? Get real Zoran.
>

Hi Paul,

Given the poor service rendered by the present administration across the board, it takes very little attention to recent FCC events to observe their wholesale indifference to the consequences of their own brand of one-answer-fits-all.

To expect that the other 5/6'ths of those affected will rescue this mis-step is dreaming in technicolor and surround sound. Those who might be affected will simply exercise their right to veto local implementation. Follow the money, there are one or two principals involved and their legislation and regulation has been paid for. The sad fact of the matter is that the current administration employs the balkanization of issues so that no single community has clout against the indifferent neighborhood. The FCC has attempted to consolidate the commercial market through the abandonment of serving community needs. They entirely ignored every comment that rejected this path; the people had to go to Congress to reverse this attitude. Those same aggrieved are wholly unaware of this new plight, and lacking their motivation, it will be a tougher hill for us to climb. I saw little discussion in this regard of consolidation, even though we watch the FCC closely which is to say we were just as indifferent, as a community, to this plight of community service. The simple fact of it is that our ox is being gored (we are not all that concerned about public service as we are about having fun). To put it bluntly, your neighbor will simply shrug off your problem and suggest you go to Radio Shack for one of those filter thingies - you may note the hint of an ironic smile offered.

For those who have NOT read the NOI, the FCC has carefully couched this BPL in the jingo of Homeland Security (sic) and describes this expressly as part of the solution of "the last mile problem" something I have already described in past posts.

Getting real means climbing out of the grave already dug before they throw in the dirt.

73's
Richard Clark, KB7QHC

996. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:17:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hmotgvsl83dqplaapu3kqauqa0lc09l4k2@4ax.com>
Source record: 112840

On Tue, 8 Jul 2003 19:04:54 +0200, "Mikael Mortensen"
<mikael@danbbs.dk> wrote:

>Hi!
>
>What kind of antenna can i use with a tranciever (Albrecht AE 485 S) in the
>27-28Mhz (10 m)?
>
>I tried an 27Mhz mobile antenna, but it can not be adjustet under 3 on the
>SWR-metre.
>
>
>/Mikael
>

Hi Mikael,

What adjustment did you make?

73's
Richard Clark, KB7QHC

997. Re: Feeding a copper pipe J-Pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:22:07 UTC
From: gmz79@aol.comnospam
Message-ID: <20030711122207.23657.00000131@mb-m22.aol.com>
Source record: 112842

Is one preferred over
>the other? Does it matter?
>
>Thanks and 73.
>
>-Bill

Wish I had the answer!
Whatever works the best for you.
KC*VIF

Greg Z
to thine own sound be true

998. Re: Tuner detunes antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:38:16 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <khKdnR8QH-9lepOiRTvUpQ@crocker.com>
Source record: 112843

"David Cook" <nospam.davepc4@comcast.net> wrote in message
news:pRAPa.33186$OZ2.5556@rwcrnsc54...
> I recently bought an MFJ-986 tuner and have been using it will good
results
> on a balanced feed antenna, but I just found an odd behavior. I have a 40
> and 20 meter dipole that I've used for several years, and 20 meter
elements
> are tuned to 14.125 which gives me a decent SWR on CW and the low end of
> SSB. I thought I'd hook it to the tuner so I could use the top end of 20
> meters and tune the off-resonance SWR down. I found that when I hooked the
> antenna to the tuner and fed it through the Coax1 Direct, the 1:1 SWR
point
> shifted down about 13.950! I took the tuner out of the circuit and it
again
> tunes at the normal frequency. So I tried it on the Coax 2 connector and
> found that that one shifted the 1:1 SWR frequency down about 14.050. I
> called MFJ technical support and they, of course, had no clue. I also
> fiddled with the tuning knobs, thinking that there might be some
interaction
> inside the box even though the coax was in the direct connect mode, but no
> interaction found. The 40 meter dipole seems stable, as far as the
resonance
> shifting goes, but I haven't done much testing with it yet. Has anyone
> seen/heard of anything like this with the MFJ-986 or any similar tuner?
>

there are two possible effects that could do this:
1. the 'change the coax length to fix the swr' effect. where adding or
removing a length of coax changes the impedance seen at the swr meter. some
meters seem sensitive to the impedance itself and will indicate a different
swr even though it really hasn't changed. try adding just a short piece of
coax in place of the tuner to see if this is causing your problem.
2. a poorly constructed switch can act as an 'impedance bump'... that is, if
the wires are too long or badly routed in the box they can act like a length
of odd impedance feedline that can transform the input impedance to
something else... usually this is a relatively small change as the lengths
of the wires are fairly short, but it is more obvious on higher frequencies
where the wire length is a longer fraction of a wavelength. i don't know
the construction of the mfj box, but this effect is worst when bare wire is
used to connect the in/out connectors to the switch, the better way (but
harder to construct and more expensive) is to use short pieces of coax to
connect them.

999. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:41:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0ee905$1_2@corp-news.newsgroups.com>
Source record: 112845

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "---energy being always equally divided between current and potential
> forms---."
>
> Except at opens and shorts, real and virtual, where amps or volts for an
> instant however brief are brought down to zero, which is a transfer of
> all energy to either the electric or magnetic field.

That was the definition of a traveling wave in a Z0 environment, Richard,
and opens and shorts are not a Z0 environment. Can you give an example of
a virtual short and explain how it develops?
--
73, Cecil, W5DXP

1000. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:42:32 UTC
From: 6212hgk{invert}@newsguy.com
Message-ID: <3f0ee8b3.5795046@News.CIS.DFN.DE>
Source record: 112844
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 14:26:49 GMT, Dick Carroll <dickc58@att.net> wrote:

>
>
>Phil Kane wrote:
>
>> On Fri, 11 Jul 2003 12:42:12 +0900, Brenda Ann wrote:
>>
>> >
>> >I still hear maritime telephone service on 8 MHz USB.\
>
>In the Sat-com age??? How Luddite can you get???
>
>>
>>
>> Not by KFS/KPH, though. AT&T closed their SF HF station (KMI) a
>> couple of years ago so I don't know who is furnishing that service
>> now. It may be ARINC (Aeronautical Radio, Inc) which is big in HF
>> SSB. I'll try to find out.
>> >
>> >Also in-flight comms over oceans are done with HF.
>>
>> That's ARINC.
>
> Last time I flew to Seattle aboard a 757 I stuck my GPS up to the window and
>read out the aircraft speed....526MPH.
> Seems like they could use a more upscale comm system aboard planes when such
>technology is that common.

They could, yes, with capital outlays. Capitol outlays are Doubleplus
Ungood in the aftermath of the Clinton Depression.

Besides, If it works, Don't Fix It, right?
--
Nobody but a fool goes into a federal counterrorism operation without duct tape - Richard Preston, THE COBRA EVENT.

1001. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 16:45:02 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0ee9ea$1_2@corp-news.newsgroups.com>
Source record: 112846

Jim Kelley wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
>>Yes, it does, which is not at all if we already know the
>>reflected irradiance which is a given.
>
> Obviously, the load determines the boundary conditions and so it is not
> irrelevant. You said that it was, and that's not correct. The load
> impedance is what determines the reflectivity. Go ahead and disagree.

I probably should have used the word "redundant" instead of "irrelevant".
If the reflected power (irradiance) in a Z0-matched system is a given,
then the value of the load is redundant information and is NOT needed
for a solution.

>
>>>:-) Yes, very technical. If a math question was posed, I must have
>>>missed it.
>
>
>>What is the superposed sum of the
>>two above waves?
>
>
> Zero.
>
>
>>What happens to the intrinsic energy pre-
>>existing in those waves before they cancel each other?
>
>
> The answer the intrinsic energy in the waves where the waves exist is stored
> in the transmission line, and nothing happens to energy where waves don't
> exist. The waves in question don't convey energy from the source to the
> load - obviously because they don't propagate from the source to the load.
> It ain't rocket science - as you're so fond of saying.
>
>
>>>Using the values above, calculate the rate of flow of energy equal to
>>>V*I. That's how much energy is involved in your dilema here.
>
>
>>The rate of flow of energy has to be 100 joules/sec since the energy
>>in those two waves cannot stand still and cannot be destroyed.
>

>
> The rate of flow of energy "in" those two waves is not 100 Joules per
> second.
>
>
>>We
>>already know that the energy in those two waves joins the forward-
>>traveling power wave toward the load.
>
>
> The energy does travel forward, but not by way of those two waves.
>
> 73, Jim AC6XG
>
>

1002. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:01:31 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0eedc9$1_2@corp-news.newsgroups.com>
Source record: 112847

Jim Kelley wrote:
>>What happens to the intrinsic energy pre-
>>existing in those waves before they cancel each other?
>
> The answer the intrinsic energy in the waves where the waves exist is stored
> in the transmission line, and nothing happens to energy where waves don't
> exist. The waves in question don't convey energy from the source to the
> load ...

Of course not because they are destroyed at the cancellation point. But
the energy in the canceled waves is indeed conveyed to the load.

>>The rate of flow of energy has to be 100 joules/sec since the energy
>>in those two waves cannot stand still and cannot be destroyed.
>
> The rate of flow of energy "in" those two waves is not 100 Joules per
> second.

Of course it is. We know that 50W of reflected power from a mismatched
load has not been re-reflected and tried to continue to flow toward the
source. We know it never gets past the impedance discontinuity. There's
only one thing that can stop a wave in its tracks without dissipation of
energy. That's another wave traveling in the same direction with equal
amplitude and opposite phase as explained on the Melles-Griot web page.
We are therefore forced to deduce that the other wave exists and indeed
it is predicted by Pfwd(|rho|^2) and the s-parameter term, s11*a1. It
doesn't last very long because it is instantaneously canceled as it
is reflected but we know it has to exist and indeed Pfwd1(|rho|^2)
equals 50W, the exact amount of energy we need to accomplish the
wave cancellation process.

> The energy does travel forward, but not by way of those two waves.

If it doesn't come from the two canceled waves, where does it come from?
Besides the two canceled waves, only Pfwd1(1-|rho|^2) and Pref2(|rho|^2)
exist and there is not enough energy in those two other wave components
to account for the magnitude of Pfwd2. Hecht, in _Optics_ says the
constructive interference energy (flowing toward the load) comes from
the destructive interference event (toward the source). If the canceled
waves contain no energy then there is no destructive interference energy -
without which constructive interference is not possible.
--
73, Cecil, W5DXP

1003. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:04:54 UTC
From: Mike Luther <mike.luther@ziplog.com>
Message-ID: <vgtrhj2uniiu66@corp.supernews.com>
Source record: 112848
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

And the following Richard, is why, when I wrote my own professional answer and filed it timely, that I noted as to the issue of security that we absolutely could not afford this for that among many reasons. I stressed that not only do we have the massive problem for intereference from the proposed service, but that a carefully contrived attack on the service itself from the outside made us terribly vulnerable to security issues if we were to allow this technique.

Richard Clark wrote:

>On Fri, 11 Jul 2003 12:11:59 GMT, "Paul Vanasse" <pvanasse@cox.net>
>wrote:
>
>
>>My god, do I actually have to explain this: The Amateur portion of the HF
>>spectrum is not even 1/6 of the total spectrum. The remainder is controlled
>>by COMMERCIAL and GOVERNMENT interests that have a hell of a lot more to
>>lose with BPL's than amateurs ever will. Do actually believe that the ARRL
>>is going to be the sole group that will rescue the bands from these evil
>>power companies? Get real Zoran.
>>
>>
>>
>
>Hi Paul,
>
>Given the poor service rendered by the present administration across
>the board, it takes very little attention to recent FCC events to
>observe their wholesale indifference to the consequences of their own
>brand of one-answer-fits-all.
>
>To expect that the other 5/6'ths of those affected will rescue this
>mis-step is dreaming in technicolor and surround sound. Those who
>might be affected will simply exercise their right to veto local
>implementation. Follow the money, there are one or two principals
>involved and their legislation and regulation has been paid for. The
>sad fact of the matter is that the current administration employs the
>balkanization of issues so that no single community has clout against
>the indifferent neighborhood. The FCC has attempted to consolidate
>the commercial market through the abandonment of serving community
>needs. They entirely ignored every comment that rejected this path;
>the people had to go to Congress to reverse this attitude. Those same
>aggrieved are wholly unaware of this new plight, and lacking their

>motivation, it will be a tougher hill for us to climb. I saw little
>discussion in this regard of consolidation, even though we watch the
>FCC closely which is to say we were just as indifferent, as a
>community, to this plight of community service. The simple fact of it
>is that our ox is being gored (we are not all that concerned about
>public service as we are about having fun). To put it bluntly, your
>neighbor will simply shrug off your problem and suggest you go to
>Radio Shack for one of those filter thingies - you may note the hint
>of an ironic smile offered.
>
>For those who have NOT read the NOI, the FCC has carefully couched
>this BPL in the jingo of Homeland Security (sic) and describes this
>expressly as part of the solution of "the last mile problem"
>something I have already described in past posts.
>
>Getting real means climbing out of the grave already dug before they
>throw in the dirt.
>
>73's
>Richard Clark, KB7QHC
>
>

--

--> Sleep well; OS2's still awake! ;)

Mike Luther

1004. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:08:49 UTC
From: Mike Luther <mike.luther@ziplog.com>
Message-ID: <vgtrot6suj5p1e@corp.supernews.com>
Source record: 112849
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

The real issue for security is the deliberately contrived attack on the services. Who in the devil wants to risk all the network to terroristic threat from a purposeful intervention into the service. As I pointed out in my personal reply, the purpose of the service is really a point to point data link through a transmission line. To me it is bizzare that anyone would contrive to perform a service needing confidentiality on a transmission line technique that is wide open to disaster.

Mike Coslo wrote:

> Art Unwin KB9MZ wrote:
>
>> What reults in broad band receivers can one expect if a ham fires up
>> a kilowatt when in close proximity to a power line ?
>>
>> Art
>
>
> Not much at all if the network is properly designed. A poorly designed
> system (BPL) would probably experience several disruptions.
>
> - Mike KB3EIA -
>

--

--> Sleep well; OS2's still awake! ;)

Mike Luther

1005. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:11:00 UTC
From: "Gary S." <Idontwantspam@net>
Message-ID: <4mrtgvk5sa8nn9b29j4srlm3s15so9atk4@4ax.com>
Source record: 112850
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 15:29:33 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:

>It's a matter of economics and regulation more than design, but also
>about design.
>
>Electronic gear in the air must meet stringent considerations. These
>are based on the simple fact of weight and power consumed. There is a

One must also consider how to transition from old to new, and that
airports would all have to have BOTH systems operating during a
transition until ALL aircraft around are upgraded to new technology.

Even the US military branches, which all work for the same boss, is
slow to make changes like this.

Another example: the transition to HDTV here in the US.

Happy trails,
Gary (net.yogi.bear)
---
at the 51st percentile of ursine intelligence

Gary D. Schwartz, Needham, MA, USA
Please reply to: garyDOTschwartzATpoboxDOTcom

1006. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:12:08 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F0EEFDB.199EB164@att.net>
Source record: 112851
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Richard Clark wrote:

> On Fri, 11 Jul 2003 14:26:49 GMT, Dick Carroll <dickc58@att.net>
> wrote:
> >> >Also in-flight comms over oceans are done with HF.
> >>
> >> That's ARINC.
> >
> > Last time I flew to Seattle aboard a 757 I stuck my GPS up to the window and
> >read out the aircraft speed....526MPH.
> > Seems like they could use a more upscale comm system aboard planes when such
> >technology is that common.
>
> Hi Dick,
>
> It's a matter of economics and regulation more than design, but also
> about design.
>
> Electronic gear in the air must meet stringent considerations. These
> are based on the simple fact of weight and power consumed. There is a
> heat budget to meet, there is a power budget to meet, and there is a
> physical volume budget to meet. Equipment must be designed to
> co-exist with other equipment (they share the same heat vent, thus the
> heat budget). There is also legacy systems to consider and to
> interface to. The flight controllers had or have been using tube
> equipment (no, not just their screens, some computers).
>
> Much of this is probably already anticipated by state of the art
> designs (except for the packaging). Heat and power issues are by and
> large far less imposing than older stuff, but packaging still must
> conform to other equipment that has no "modern" replacement.
>
> Then back to the economics and regulation. ARINC places stringent
> requirements that are by and large stringent in the top loading of
> engineering time. That is, it takes a cadre of support personnel to
> research and cross-correlate all the various issues demanded to find
> its way into a product. When I designed the flight recorder, it was
> to MIL-SPEC 883B which is no regulatory slouch. How much do you think
> your HF rig would cost against such a standard? $30K would be a good
> place to start. Then there is the retro-fit cost to meet the new
> system. Abandoning HF for satellite means air and ground systems must
> change to follow the trend (it is only a trend after-all) and this ups
> the ante such that a large cadre of support people must be

> co-ordinated to follow to a long-term schedule of mods and upgrades
> (the schedule, in turn, having taken a couple of years to fashion).
> Even changing the antenna type to follow the migration from HF to SHF
> impacts the air frame and issues of flight safety. This may seem
> absurd on the basis of civil aviation which can opt into some gear,
> but commercial aviation must be done across the board.

Tnx for the treatise, Rich, it clears up a few details that were hanging out there.

Clearly the revolution in technology is dependent on *other* factors more than on
the state of the art itself .
Which shouldn't, but as so often it happens, brings us back to
to the problem of "where do we go from here when the map is so ill defined?"

I can't help it, I keep being diverted back to the basics...all it takes for two
real radio operators to communicate is a basic radio transcieving system with very
minimal or even maybe no external support, and the skill to send and receive
radiotelegraphy....
Shucks, many of us recall when they used that system on aircraft!

Dick

1007. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:17:15 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <cvrtgvsem7tg41rpa7eq0nphtf5u6maqk2@4ax.com>
Source record: 112852
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

On Fri, 11 Jul 2003 17:04:54 +0000, Mike Luther
<mike.luther@ziplog.com> wrote:

>And the following Richard, is why, when I wrote my own professional
>answer and filed it timely, that I noted as to the issue of security
>that we absolutely could not afford this for that among many reasons. I
>stressed that not only do we have the massive problem for intereference
>from the proposed service, but that a carefully contrived attack on the
>service itself from the outside made us terribly vulnerable to security
>issues if we were to allow this technique.
>

Hi Mike,

You didn't go far enough. The leakage is prima facia evidence of
security loss. The government is the poorest employer of standard
civil encryption services (government meaning those various agencies
that are not affiliated with black box funding).

What was it - a couple of months back some (friendly ruski?) diplomat
sat in his car outside of a government office downloading their
activity with his snooper attachment?

73's
Richard Clark, KB7QHC

1008. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:32:01 UTC
From: Mikael Mortensen <mikael@danbbs.dk>
Message-ID: <3f0ef47d$0$13267$edfadb0f@dread15.news.tele.dk>
Source record: 112853

Hi!

I used channel 20 on FM. And pushed the antenna down little by little as far
as it could go.
Its with a magnetic foot. -maybe thats the problem.
But it worked on my Danita 640FM (only CB).

Regards
Mikael

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:hmotgvsl83dqplaapu3kqauqa0lc09l4k2@4ax.com...
> On Tue, 8 Jul 2003 19:04:54 +0200, "Mikael Mortensen"
> <mikael@danbbs.dk> wrote:
>
> >Hi!
> >
> >What kind of antenna can i use with a tranciever (Albrecht AE 485 S) in
the
> >27-28Mhz (10 m)?
> >
> >I tried an 27Mhz mobile antenna, but it can not be adjustet under 3 on
the
> >SWR-metre.
> >
> >
> >/Mikael
> >
>
> Hi Mikael,
>
> What adjustment did you make?
>
> 73's
> Richard Clark, KB7QHC

1009. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:36:48 UTC
From: Terry <tsanford@nf.sympatico.ca>
Message-ID: <3F0EF5B0.C91CDF9F@nf.sympatico.ca>
Source record: 112857

> Terry had wrote: in part ......
>
> > So a couple of days ago I 'glued' it with Crazy Glue; one of
> > those cyano-cryolate (sp?); or whatever the proper name is!.
>

Dale Parfitt wrote:

> Cyanoacrylates (crazy glue) are near worthless in a humid and/or UV
> environment- guaranteed to fail.
>
> The anaerobic cements by Loctite create a bond stronger than the glass.
> Pick up some rear view mirror cement with its primer.
>
> Dale W4OP

Thanks for the good advice Dale:
And, gosh, now that you remind me I do seem to recall seeing that information somewhere, previously; and I'd forgotten! And we certainly can be humid a kilometre or so from the foggy North Atlantic! We also get sun too!
My regards. Terry.
PS. I guess I may have to stick my 'glued' insulator out in the sun to get my Krazy Glue to 'go off' i.e. deteriorate?
My next post may be "How to remove Krazy Glue ......?". :-)

1010. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:38:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <erstgvkqdotna0os01adijrvk99po5mne8@4ax.com>
Source record: 112854
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 17:12:08 GMT, Dick Carroll <dickc58@att.net>
wrote:
> I can't help it, I keep being diverted back to the basics...all it takes for two
>real radio operators to communicate is a basic radio transcieving system with very
>minimal or even maybe no external support, and the skill to send and receive
>radiotelegraphy....
> Shucks, many of us recall when they used that system on aircraft!
>
>Dick

Hi Dick,

One need only look at the defunct 500KHz emergency radio operation to observe that two radio operators was abandoned long ago. And it was "modern" technology in the form of a signature tone that moved it the first step away. And that was after the rules were relaxed (or put in place originally) to require 15 minutes monitoring of each hour.

In less than 100 years we went from spark gap to satellite technology from the Titanic to flight 800 - and neither of those two fared very well for it. In the millennium before, it was semaphore and smoke signals.

Clearly technology is taken up quite quickly by comparison. When I was in DC last year this time, my girlfriend was adjusting the rear view mirror and engaged the OnStar system by mistake (the buttons being located on the mount). Two decades before the best you had was CB, a decade before it was disposable cellular phones.

73's
Richard Clark, KB7QHC

1011. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:42:09 UTC
From: Terry <tsanford@nf.sympatico.ca>
Message-ID: <3F0EF6F1.F141F602@nf.sympatico.ca>
Source record: 112855

Terry wrote:

Thanks to all who replied and gave advice. Terry.

1012. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:46:38 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <cnttgvg21pbtgenfreh18oek69i1l0i0vj@4ax.com>
Source record: 112856

On Fri, 11 Jul 2003 19:32:01 +0200, "Mikael Mortensen"
<mikael@danbbs.dk> wrote:

>Hi!
>
>I used channel 20 on FM. And pushed the antenna down little by little as far
>as it could go.
>Its with a magnetic foot. -maybe thats the problem.
>But it worked on my Danita 640FM (only CB).
>
>Regards
> Mikael
>

Hi Mikael,

FM? Has CB changed that much or are you using non type-accepted gear?

The mag-mount could be a problem. One way to test it is to add an
extender cable (using barrel connectors and another 5 or 10 feet of
coax) and see if that changes anything. If so, you have a common mode
issue. You can ignore it as a problem if you simply select the right
length of extension that pulls the SWR down (and never change anything
else).

73's
Richard Clark, KB7QHC

1013. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:51:32 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0EF924.F56E1652@uci.edu>
Source record: 112859

W5DXP wrote:
>
> Jim Kelley wrote:
> > Why should someone believe what you say when there's
> > no evidence you've even worked the problem yourself?
>
> Here's an interesting reply to one of my postings on
> sci.physics.electromag:
>
> > Cecil said:
> >> Seems to me that destructive interference event occurring in the direction
> >> of the source feeds energy to the constructive interference event occurring
> >> in the direction of the load.
>
> The reply was:
> Yes, just so. In fact, the phase change/non-change when the waves are
> reflected/transmitted by low-to-high or high-to-low interfaces ensures
> that this will always happen - if in phase on one side, they must be out
> of phase on the other.
>
> Which is exactly what I say in my article.
> --
> 73, Cecil, W5DXP

Hi Cecil,

Obviously he's describing the phase relationships between reflected and transmitted waves, and the fact that destructive interference occurs on one side of the boundary and destructive interference occurs on the other side of the boundary. I agree, and I've always told you I liked that part of your paper.

73, Jim AC6XG

1014. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 17:54:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7dutgv8vqm7rsjt120ttct6j80d2v3ji36@4ax.com>
Source record: 112858

On Fri, 11 Jul 2003 15:06:48 -0230, Terry <tsanford@nf.sympatico.ca>
wrote:

>My next post may be "How to remove Krazy Glue ......?

Hi Terry,

Try acetone.

73's
Richard Clark, KB7QHC

1015. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:10:56 UTC
From: richardharrison@webtv.net
Message-ID: <18786-3F0EFDB0-124@storefull-2313.public.lawson.webtv.net>
Source record: 112868

Cecil, W5DXP wrote:
"That was the definition of a traveling wave in a Zo enviroment,---."

All this discussion over the insipid subject of flat lines?

A virtual short appears in a line with 100% reflection. The virtual short appears where the sum of incident and reflected waves produces a concurrence of zero volts and maximum current, just as in a true short. The line has zero loss to enable good repetitions of an actual short or open.

Best regards, Richard Harrison, KB5WZI

1016. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:12:46 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0EFE1E.DBFF7101@uci.edu>
Source record: 112862

W5DXP wrote:
>
> Jim Kelley wrote:
> >>What happens to the intrinsic energy pre-
> >>existing in those waves before they cancel each other?
> > >
> > > The answer the intrinsic energy in the waves where the waves exist is stored
> > > in the transmission line, and nothing happens to energy where waves don't
> > > exist. The waves in question don't convey energy from the source to the
> > > load ...
>
> Of course not because they are destroyed at the cancellation point. But
> the energy in the canceled waves is indeed conveyed to the load.

You're making it sound as though the energy gets to the load by some
means other than waves. But it's certainly true the amount of energy
that would have been reflected thus preventing it from reaching the
load, was not reflected and was not prevented from reaching the load.
Seems pretty obvious.

> >>The rate of flow of energy has to be 100 joules/sec since the energy
> >>in those two waves cannot stand still and cannot be destroyed.
> > >
> > > The rate of flow of energy "in" those two waves is not 100 Joules per
> > > second.

> Of course it is.

There is no flow of energy from source to load via those waves, hence
the waves do not represent a _flow_ of energy.

> We know that 50W of reflected power from a mismatched
> load has not been re-reflected and tried to continue to flow toward the
> source. We know it never gets past the impedance discontinuity. There's
> only one thing that can stop a wave in its tracks without dissipation of
> energy. That's another wave traveling in the same direction with equal
> amplitude and opposite phase as explained on the Melles-Griot web page.
> We are therefore forced to deduce that the other wave exists and indeed
> it is predicted by Pfwd(|rho|^2) and the s-parameter term, s11*a1. It
> doesn't last very long because it is instantaneously canceled as it
> is reflected but we know it has to exist and indeed Pfwd1(|rho|^2)
> equals 50W, the exact amount of energy we need to accomplish the
> wave cancellation process.

That's your story, and you're sticking with it. I know. ;-)

> > The energy does travel forward, but not by way of those two waves.

> If it doesn't come from the two canceled waves, where does it come from?

Like we haven't been through this already? The superpostion of V1 and V2 accounts for all the energy that moves from source to load. But I agree that the affects of V3 and V4 can't be ignored. V3 dimishes the amplitude of the forward moving wave, and V4 effectively dimishes the amount of V2 that reflects back from the 1st boundary. But saying that energy flows along all these paths obviously causes problems for your analysis - namely the destruction of energy paradox, and the reversal of energy flow without reflection, and now apparently, without waves.

73, Jim AC6XG

1017. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:13:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0efea6$1_2@corp-news.newsgroups.com>
Source record: 112860

Jim Kelley wrote:
> Obviously he's describing the phase relationships between reflected and
> transmitted waves, and the fact that destructive interference occurs on
> one side of the boundary and destructive interference occurs on the
> other side of the boundary. I agree, and I've always told you I liked
> that part of your paper.

In the earlier example, the destructive interference occurs in the
direction of the source. The constructive interference occurs in
the direction of the load.

So what do you think generates the destructive interference energy?
What is the origin of the destructive interference energy that feeds
the constructive interference event? Exactly what wave components are
involved in the generation of the destructive interference energy?

In other words, how does the reflected power Poynting vector get
turned around at the Z0-match impedance discontinuity?
--
73, Cecil, W5DXP

1018. AlphaDelta DX Ultra Lighting Protection

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:19:11 UTC
From: Michalkun <buranko2000@yahoo.com>
Message-ID: <Xns93B57D31A1C9Bmichalkunyahoocom@128.233.192.251>
Source record: 112861

Does anybody know about the lighting protection in this dipole antenna?
There is something that's replacable but needs to be ordered from
AlphaDelta. I was wondering if anyone knows what kind of thing it is or
how to make themselves.

1019. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:26:03 UTC
From: Terry <tsanford@nf.sympatico.ca>
Message-ID: <3F0F013B.9A2985AE@nf.sympatico.ca>
Source record: 112864

Dave Shrader wrote:
>
> Hey! Is this the new 'strategy' to get around PRB-1??
>
> That is 'Create so much HF noise that the hams will close up shop and
> take those ugly things down.'
>
> Deacon Dave, W1MCE
>
> [SNIP]
> >
> > Given FCC head commissioner Michael Powell's basic orientation -- he
> > used to be a lawyer/lobbiest for large media company's, and he
> > recently has turned the whole radio industry over to the Clear Channel
> > folks -- where do you think he might come down in this controversy? I
> > suspect he'd be much more aligned with the BPL'ers than with a bunch
> > of crummy hams polluting nice neighborhoods with their antennae.
> >
> > Bob
> > k5qwg

Dave; I'm not a ham but my comment could be; "And in the best tradition of amateur (radio) some hams will find an ingenious way/s to continue the original purpose an interest in communicating and technology". Although it might have to be a bird's feather dipped in some dark liquid substance to inscribe on something called papyrus or parchment or .... ? Right? However it does sound serious.

An example of such ingenuity.
I recall a magazine article, about 50 years ago, about a UK amateur who received the 200 kilohertz (well it was kilocycles then!) BBC programme signal. Filtered out all the modulation and used it as a rock stable input to a heterodyne VFO.
He allowed the 'Variable' portion of his VFO to run continuously, unkeyed.
But he 'keyed' the 200 Khz, or a harmonic of it, plus or minus the variable frequency inside the VFO etc., I forget the exact details, as drive input to his transmitter/PA.
Very stable 'VFO' when your frequency source was the main Long Wave BBC transmitter of that time; and he wasn't 'stealing' anything; just receiving the 200 khz. signal like anyone else!
Good luck to all. Gotta read up some more on this BPL thread.

Even as a non-amateur my opinion is that regulatory authorities in all countries have already all fallen down on the job. Pollution (RFI) from day to day devices such as lamp dimmers, microwave ovens, even shavers and food mixers is rife and uncontrolled. So we'll never know that some unfortunate soul died because an ambulance could not communicate when someone, maybe myself, decided at that critical moment to make some a snack using in my 'electronically' timed; toaster. Or something equally frivolous?

Terry.

PS. Again off a bit OT. But talking about interference to radio antennae and radio frequencies, HF et al! I recall meeting an electrical power engineer who was then pushing the idea of a single wire plus ground/earth power system. His idea, since at that time and now, many communities here are adjacent to the sea, was to use a cheaper 'single wire' transmission system and the Atlantic Ocean as the other conductor!
Some 'fried' fish and uncomfortable sea mammals I reckon?
But do they not use such a single wire/ground system, occasionally in some remoter parts of Australia? Maybe someone could comment on the potential (pun intended!) for interference with radio transmission/reception, down under?

1020. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:33:05 UTC
From: Terry <tsanford@nf.sympatico.ca>
Message-ID: <3F0F02E1.25647CC9@nf.sympatico.ca>
Source record: 112865

Richard Clark wrote:
>
> On Fri, 11 Jul 2003 15:06:48 -0230, Terry <tsanford@nf.sympatico.ca>
> wrote:
>
> >My next post may be "How to remove Krazy Glue ......?
>
> Hi Terry,
>
> Try acetone.
>
> 73's
> Richard Clark, KB7QHC

Well me son!
What a nice (and knowledgeable) bunch here?
First I drops it and it breaks!
Then I uses the wrong glue!
And they still gives me good advice.
T'anks. Terry.

1021. Re: Matching 70 cm Yagi to coax feedline

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:33:42 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307111033.68c2bedd@posting.google.com>
Source record: 112863

MikeN <mnewman@clear.net.nz> wrote in message
news:<s2asgvgja5l39jljjh56ije314igpc7fi3@4ax.com>...
> Thanks Tom
>
> What 1:1 balun construction would you recommend.

For low-power work with a 75-ohm system, I've hacked a balun by making a length of twisted-pair that's close to 75 ohms, connecting that to the driven element on one end, wrapping about three turns of it through a small ferrite core, and connecting the other end to the coax. Then I put another couple of ferrite toroids over the outside of the coax, one where the twisted-pair connects and another about a quarter wave down from there. It's a bit tough to make a 50-ohm twisted pair, but it might be reasonable to make a 50-ohm twisted quad, where the wires opposite each other are connected together. But what I was doing I wanted to be broadband, and if I was doing it at a single frequency, I'd look at making a "bazooka" balun, I think, using half-centimeter diameter coax centered inside a quarter wave length of copper or aluminum pipe about one and a half or two cm inside diameter, shorted to the coax outer at the end away from the antenna. You can use a couple of "donuts" cut out of foam packing material (styrofoam) to keep the coax more or less centered in the pipe, but don't use too much insulation because it will change the electrical length. -- There are several other balun structures that could work, too. Maybe others will post things that have worked for them.

Cheers,
Tom

1022. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:43:00 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0F0534.BCB3DA7C@uci.edu>
Source record: 112867

W5DXP wrote:
>
> Jim Kelley wrote:
> > The waves themselves are indeed identical, i.e. you can't measure a
> > difference between them on a transmission line. But one might indeed be
> > transferring energy while the other is not.
>
> How can two waves that are identical possibly be doing different things.
> It doesn't make any sense at all. Waves cannot exist without intrinsic
> energy!!! If any wave is destroyed, it gives up its energy. There is
> simply no other place for the energy to go.

Here's a quote from Born and Wolfe, pg. 48, talking about waves
encountering the interface between dense and less dense media:

"Although there is a field in the second medium, it is easy to see that
no energy flows across the boundary. More precisely it will be shown
that, although the components of the Poynting vector in the direction
normal to the boundary is in general finite, its time average vanishes;
this implies that the energy flows to and fro, but that there is no
lasting flow into the second medium."

> Please reference the cross-posting from sci.physics.electromag. Somebody
> predicted that those guys would tear me apart. On the contrary, they
> tend to agree with me.

I tended to agree with what you said there too. You can be very
agreeable when you want to be. :-)

I notice you didn't mention anything about photons dematerializing and
rematerializing over there. Give that one a try. :-)

> Those reflected waves not only destructively interfere, they are
> destroyed so they MUST give up any intrinsic energy in the waves.
> Nothing else is possible.

If you mean they give up their energy to the two waves traveling in the
other direction, then I agree.

> Can I have a hit
> off whatever you are smokin'? :-)

I've got a pack of Camel lights out in the car. You can have 'em.

> > That would only be true if
> > energy were indeed traveling in the reverse direction to begin with.
> > When we realize it's not, there's nothing left to account for Cecil.

> If reflected energy from a mismatched load is not traveling in the
> reverse direction, pray tell what direction is it traveling in?

P2 is energy that had been traveling in the reflected direction and was re-reflected. That's it. Good thing too, because any more than P2 and P1 and you'd have a perpetual motion machine! :-)

> I
> can see you haven't referenced the reflected power flow vector.

I've seen you reference it, but I have seen you define one - or write it out mathematically.

> > There's no conservation of energy problem to solve.

> There certainly is in your scenario. The reflected energy doesn't ever
> change directions but it somehow joins the forward wave anyway. Can
> you spell B-A-F-F-L-E-G-A-B?

You wrote the bafflegab - whatever that is. I certainly never said reflected energy joins the forward energy. That's your invention.

73, ac6xg

1023. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:47:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0f06a2$1_2@corp-news.newsgroups.com>
Source record: 112866

Jim Kelley wrote:
> You're making it sound as though the energy gets to the load by some
> means other than waves.

No, I'm not. The energy in the canceled waves reverses direction and
joins the forward wave. That's what I said over on sci.physics.electromag
and those guys are amazed that anyone would disagree with that assertion.

>> In other words, the disappearance of two waves during a wave cancellation event
>> can result in reflected energy coherent with those two canceled waves. I don't
>> find that in the literature anywhere. Do you know of a reference?

The reply was:
> I'm curious as to what kind of objections people had. It all makes perfect sense to me.

So the disappearance of two waves during a wave cancellation event and
a subsequent energy reflection makes perfect sense to real physicists.
Not one person on that newsgroup objected to my assertion.

> There is no flow of energy from source to load via those waves, ...

Of course there is. All energy comes from the source. Therefore, the
energy in the reflected power Poynting vector originates from the source
and is reflected by the load. ERGO, that energy has flowed from the
source to the load. *ALL* energy incident upon the load comes from the
source, even the energy rejected by the load as reflected energy. The
above statement is simply a steady-state shortcut mantra that bears no
resemblance to reality.

> That's your story, and you're sticking with it. I know. ;-)

You have not refuted it. Until you provide an iota of proof to
the contrary, I'll be sticking with it. Incidentally, your mantras
are not proof. Try uttering your mantras on sci.physics.electromag
and see what happens.

> Like we haven't been through this already? The superpostion of V1 and
> V2 accounts for all the energy that moves from source to load.

We've been through all this before. There is not enough energy in
|V1|^2/Z02 and |V2|^2/Z02 to support the constructive interference
between those two waves. Therefore, an equal magnitude of destructive
interference must be occurring somewhere else - according to Hecht.
Therefore, the destructive interference energy is generated by the
wave cancellation event between the two rearward-traveling reflected
waves just as described on the Melles-Griot web page and agreed
to by experts over on sci.physics.electromag.

How about you reply to my latest posting on sci.physics.electromag
so we can obtain opinions from some real experts? I predict our
differences would be settled in a matter of days on that newsgroup.
--
73, Cecil, W5DXP

1024. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:54:23 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0F07DF.BA7D4312@uci.edu>
Source record: 112769

W5DXP wrote:
> So what do you think generates the destructive interference energy?
> What is the origin of the destructive interference energy that feeds
> the constructive interference event? Exactly what wave components are
> involved in the generation of the destructive interference energy?

Not parsing 'generating destructive interference energy'. I know the
words individually, but I don't know what they're supposed to mean in
such a concatination. Not familiar with the expression. Sorry.

> In other words, how does the reflected power Poynting vector get
> turned around at the Z0-match impedance discontinuity?

In still other words, until you can answer that you're arguing an
unsupportable theory.

ac6xg

1025. Re: Cecil's Math

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 18:58:44 UTC
From: richardharrison@webtv.net
Message-ID: <19105-3F0F08E4-433@storefull-2314.public.lawson.webtv.net>
Source record: 112771

Keith wrote:
"So how does energy flow through a point in the circuit where the voltage or current is always 0?"

The "0" is the sum of two voltages produced by adding together equal and opposite voltages in two waves which are passing through each other with no effect on each other.

Conductors producing the volts and amps from the waves they carry are actually "bucket brigades". Distributed inductance and capacitance pass along charges in a travel direction, or in both directions. There is no problem as charges moving in opposite directions swell and shrink occupancy at certain spots on the line. They don`t overflow, and charges moving in each direction, like Ole Man River, they "jes keep movin` along".

Best regards, Richard Harrison, KB5WZI

1026. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 19:16:18 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <WY2$Z+KC0wD$EAuD@ifwtech.co.uk>
Source record: 112790

Dale Parfitt wrote:
>
>
>Terry wrote:
>> Last winter I broke a very nice 8 inch (straight glass not an egg
>> shell) insulator into two almost equal pieces. :-(
>> A 'clean' break in the ribbed section, no lost pieces or chips of
>> glass, the broken two pieces mated perfectly.
>> So a couple of days ago I 'glued' it with Crazy Glue
>
>Cyanoacrylates (crazy glue) are near worthless in a humid and/or UV
>environment- guaranteed to fail.
>
>The anaerobic cements by Loctite create a bond stronger than the glass.
>Pick up some rear view mirror cement with its primer.
>
That looks like a better idea, but be careful - there's more than one
kind of rear view mirror cement. A friend in Sweden was sold a pack of
cement that only cures in the UV from sunlight... up near the Arctic
circle... in winter.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1027. test

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 19:17:47 UTC
From: hees34@zonnet.nl
Message-ID: <MPG.19792bc211f64c63989682@news.planet.nl>
Source record: 112770

is this arriving

1028. Re: test

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 19:21:36 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <ben2o3$6qoc3$1@ID-134747.news.uni-berlin.de>
Source record: 112772

not here - don't see a thing

--
73 es cul

wb3fup
a Salty Bear

<hees34@zonnet.nl> wrote in message
news:MPG.19792bc211f64c63989682@news.planet.nl...
> is this arriving

1029. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 19:27:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0f1022_2@corp-news.newsgroups.com>
Source record: 112773

Richard Harrison wrote:
> A virtual short appears in a line with 100% reflection. The virtual
> short appears where the sum of incident and reflected waves produces a
> concurrence of zero volts and maximum current, just as in a true short.

A physical short causes the voltage to go to zero. If a virtual
short causes the voltage to go to zero, what causes the virtual
short?

The virtual short cannot cause itself so ...

Either the virtual short causes the voltage to go to zero in
which case: What causes the virtual short?

Or the voltage going to zero causes the virtual short in which
case: What caused the voltage to go to zero?
--
73, Cecil, W5DXP

1030. lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 19:35:16 UTC
From: hees34@zonnet.nl
Message-ID: <MPG.19792fdd6dac8fb989683@news.planet.nl>
Source record: 112774

Maybe somebody can shed some light on the following matter:

Recently I have installed an 18 GHz Microwave link, consisting of NEC-Pasolink gear and Andrews Microwave Dishes.
Because it was a first for me, I had thought over the process of lining up the dishes. I had heard of and read about the side-lobe vs the main-lobe.
So I figured out the my coworker on the other end of the link should move his dish and I would tell him the reading on my voltmeter. The higher the better and at the peak reading he would fix the dish. Then I would do the same on my end. And then his end a second time and then my end a second time
We would repeat this procedure for the vertical line-up as well.
I had calculated an expected attenuation which could be converted in a voltage reading.

Assume the reading should say 3,5 V. Well I never got anything better than 2.8 / 2.9 volt.

COnsequently I asked NEC for advice and they said that 'you should line up you own end using the voltmeter, and not the opposite end'. With this advice we repeated everything and reached the expected reading of 3.5 volt. The 2.8 volt was a sidelobe of the antenna-beam

What I don't understand is that when I rotate my dish (either horizontally or vertically) I can go from sidelobe to mainlobe to sidelobe. I don't move the dish further left or right, I only rotate it around a vertical or horizontal axis. When I would move the dish further left or right or up or down, than I can visualize going from lobe to lobe. Not by rotating the dish
That is why I used the opposite end to move the beam.

Anybody can explain where I go wrong

Regards, Ad

1031. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 19:47:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0f14c1_2@corp-news.newsgroups.com>
Source record: 112775

Jim Kelley wrote:
> Here's a quote from Born and Wolfe, pg. 48, talking about waves
> encountering the interface between dense and less dense media:
>
> "Although there is a field in the second medium, it is easy to see that
> no energy flows across the boundary.

This is just another one of your *NET* energy statements. We are NOT discussing NET steady-state energy. We are discussing the underlying energy components. I have said that dozens of times. I do NOT choose to discuss NET energy. If you want to discuss NET energy feel free to find someone else with which to discuss that boring subject.

> I notice you didn't mention anything about photons dematerializing and
> rematerializing over there. Give that one a try. :-)

I did, and no one objected. But we don't need quantum physics to explain HF RF waves.

> If you mean they give up their energy to the two waves traveling in the
> other direction, then I agree.

I'm glad you have changed your mind about that one. Upon what technical point do we still disagree? If the rearward-traveling waves give up their energy to the two waves traveling in the forward direction, the energy has changed direction, by definition.

>>If reflected energy from a mismatched load is not traveling in the
>>reverse direction, pray tell what direction is it traveling in?
>
> P2 is energy that had been traveling in the reflected direction and was
> re-reflected. That's it. Good thing too, because any more than P2 and
> P1 and you'd have a perpetual motion machine! :-)

There is not enough energy in P1 and P2 to support Pfwd2. Constructive interference energy must be added into Pfwd2. According to Hecht, that constructive interference energy can only originate from destructive interference. There is no destructive interference energy source except from the wave cancellation between two rearward-traveling reflected waves.

> I certainly never said reflected energy joins the forward energy.

Here's what you said earlier in this very posting.

> If you mean they give up their energy to the two waves traveling in the
> other direction, then I agree.

"They", above, are reflected waves. The two waves traveling in the other direction are forward waves. So you said the reflected waves give up their energy to the forward waves.
--
73, Cecil, W5DXP

1032. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 19:50:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0f1550$1_2@corp-news.newsgroups.com>
Source record: 112776

Jim Kelley wrote:

>
> W5DXP wrote:
>
>>So what do you think generates the destructive interference energy?
>>What is the origin of the destructive interference energy that feeds
>>the constructive interference event? Exactly what wave components are
>>involved in the generation of the destructive interference energy?
>
> Not parsing 'generating destructive interference energy'. I know the
> words individually, but I don't know what they're supposed to mean in
> such a concatination. Not familiar with the expression. Sorry.

:-) Non-response #127. Why am I not surprised?

>>In other words, how does the reflected power Poynting vector get
>>turned around at the Z0-match impedance discontinuity?
>
> In still other words, until you can answer that you're arguing an
> unsupportable theory.

:-) Non-response #128. Why am I not surprised?
--
73, Cecil, W5DXP

1033. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:00:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <an5ugv8hj6k4rh4f7a8uli3pir3tjp4u21@4ax.com>
Source record: 112777

On Fri, 11 Jul 2003 21:35:16 +0200, <hees34@zonnet.nl> wrote:

>Anybody can explain where I go wrong
>
>Regards, Ad

Hi Ad,

Looks like cross-polarization issue. As you rotate, they come into conflict (the polarizations) and then re-emerge from conflict. Actually, it sounds fairly bullet proof with what you got (plenty of signal, the system probably doesn't need more than a volt, as you would measure it).

73's
Richard Clark, KB7QHC

1034. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:06:27 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hhvbgxf.pminews@netnews.comcast.net>
Source record: 112778
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 14:26:49 GMT, Dick Carroll wrote:

>> >I still hear maritime telephone service on 8 MHz USB.\
>
>In the Sat-com age??? How Luddite can you get???

You obvioulsly don't own stock in ARINC or Globe Wireless....

As I pointed out earlier, INMARSAT is great until the bill shows up -
the cost is out in deep space (pardon the pun).

Wanna talk about Luddite methods of communication? How 'bout
per-message traffic handling by CW ????

>> Not by KFS/KPH, though. AT&T closed their SF HF station (KMI) a
>> couple of years ago so I don't know who is furnishing that service
>> now. It may be ARINC (Aeronautical Radio, Inc) which is big in HF
>> SSB. I'll try to find out.

"My guy" says that it could be ARINC filling in the gap that ATT
left, or it could be WLO, the maritime public coast station in
Mobile, AL which also remote-controls KLB, the coast station in
Seattle, WA.

>> >Also in-flight comms over oceans are done with HF.
>>
>> That's ARINC.
>
>Last time I flew to Seattle aboard a 757 I stuck my GPS up to the
>window and read out the aircraft speed....526MPH.

>Seems like they could use a more upscale comm system aboard planes
>when such technology is that common.

GPS and INMARSAT are common on newer aircraft. So is Air-Ground
Phone dial-up service (put your plastic into the slot in front of
your seat). Just wait 'till the bill shows up.

--
73 de K2ASP - Phil Kane

1035. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:07:49 UTC
From: Myron <msteir@charter.net>
Message-ID: <vgu68l56uvrg44@corp.supernews.com>
Source record: 112779

That IS good news and something I'll have to keep in mind. That's the kind of information that gets listed in a chart somewhere about transmitting theory and is easy to forget when so many people seem overly concerned about tweaking antenna efficiencies and lowering SWR by the smallest percentage points.

Myron

. The good news is that cutting power from 100
> watts to 10 is only 10 dB, which isn't even one S-unit on a typical
> amateur receiver. Under most circumstances it won't make a big
> difference in how audible your signal is. There's one particularly
> skilled operator in my area who regularly breaks CW pileups to South
> Pacific islands, running only a couple of watts, from an HF mobile rig
> in his car. [Maybe if I play around with this stuff for a few decades
> I might pick up a fraction of that skill... I should be so lucky!]
>

1036. Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:28:05 UTC
From: Ron <rmrippy@hotmail.com>
Message-ID: <p5FPa.200637$_w.8450930@twister.southeast.rr.com>
Source record: 112780

I'm considering installing an inverted V 40 meter dipole under the eaves of my house. There is room for a longer arm on one side than the other.

1) Would I be better off making each arm as long as possible and adding whatever matching circuit is required?

2) Should I make both sides equal to the shorter arm even if this makes the antenna too short to self resonate?

3) Should I make both sides equal in case there is sufficient length to allow the antenna to self resonate.

Sorry for the complexity of the question.

Thanks for any help.

Ron W4TQT

1037. EH AM Broadcast news

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:28:17 UTC
From: stefano <sgalast@tin.it>
Message-ID: <B5FPa.17905$it4.433216@news1.tin.it>
Source record: 112781

Hello,
for those interested persons, there is a big news on the EH AM antenna
Please visit:
http://www.eh-antenna.com/AM_Broadcast.htm
for more informations

73 Stefano IK5IIR

1038. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:28:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgu7fhe1mh48cc@corp.supernews.com>
Source record: 112782

If you think 10 dB is insignificant, try to explain why to the person who's proud of his 7 element single band Yagi mounted on a 1.3 wavelength boom, which is how much you need to get 10 dB gain over a dipole. Or the person who just bought a kW amplifier to drive with his 100 watt rig.

I've yet to see an S-meter with units greater than about 6 dB. Less than this is much more typical. The S units on my Icom 730 vary from 1.3 to 4.0 dB, depending on where on the scale you are. A 10 dB signal change will move the meter from S-2 to S-7.

This isn't to say you can't work a whole lot of stations with 10 watts, or a 100 watt rig into a 10% efficient antenna -- or even with one watt. But you will notice a difference when you increase or decrease your power 10 dB.

Roy Lewallen, W7EL

Myron wrote:
> That IS good news and something I'll have to keep in mind. That's the kind
> of information that gets listed in a chart somewhere about transmitting
> theory and is easy to forget when so many people seem overly concerned about
> tweaking antenna efficiencies and lowering SWR by the smallest percentage
> points.
>
> Myron
>
> . The good news is that cutting power from 100
>
>>watts to 10 is only 10 dB, which isn't even one S-unit on a typical
>>amateur receiver. Under most circumstances it won't make a big
>>difference in how audible your signal is. There's one particularly
>>skilled operator in my area who regularly breaks CW pileups to South
>>Pacific islands, running only a couple of watts, from an HF mobile rig
>>in his car. [Maybe if I play around with this stuff for a few decades
>>I might pick up a fraction of that skill... I should be so lucky!]
>>
>
>
>

1039. Re: Tuner detunes antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:42:02 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F0F2095.7040801@comcast.net>
Source record: 112783

The additional length of coax and the tuner changing the "RESONANCE" of an antenna indicates that the antenna[s] did not have Zo = 50 +/- j0 ohms. Restated, there was a mismatch! The length of transmission line from the antenna[s] to the rig tuned the apparent resonance to 14.125. BTW resonance is NOT indicated at a VSWR of 1:1. Resonance is when the reactance in the ANTENNA IS ZERO.

So, adding extra components in the system changed the apparent VSWR not the antenna resonance.

BTW, I'm currently using a trap vertical as an interim antenna that has measured resonance[s] between 26 to 37 ohms resistive from 10 to 40 meters. That's a VSWR approaching 2:1. A tuner or extra lengths of coax will tune the ANTENNA SYSTEM to an apparent VSWR of 1:1 [but I know better! My VSWR is still ~2:1 and my antenna resonance is still 26 to 37 ohms resistive]. MFJ 259B Antenna Analyzer used for measurements.

Deacon Dave, W1MCE

David Cook wrote:
> I recently bought an MFJ-986 [SNIP]
I found that when I hooked the
> antenna to the tuner and fed it through the Coax1 Direct, the 1:1 SWR point
> shifted down about 13.950!

OK. There IS a mismatch in the antenna system!

>I took the tuner out of the circuit and it again
> tunes at the normal frequency. So I tried it on the Coax 2 connector and
> found that that one shifted the 1:1 SWR frequency down about 14.050. I
> called MFJ technical support and they, of course, had no clue. I also
> fiddled with the tuning knobs, thinking that there might be some interaction
> inside the box even though the coax was in the direct connect mode, but no
> interaction found. The 40 meter dipole seems stable, as far as the resonance

{[SNIP] It's NOT ANTENNA RESONANCE!

> shifting goes, but I haven't done much testing with it yet. Has anyone
> seen/heard of anything like this with the MFJ-986 or any similar tuner?
>
> Thanks and 73,
> -- Dave, WA0TTN
>
>
>

1040. Re: EH AM Broadcast news

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:56:35 UTC
From: tdonaly@aol.com
Message-ID: <20030711165635.23625.00000227@mb-m24.aol.com>
Source record: 112784

Stefano wrote,
>
>Hello,
>for those interested persons, there is a big news on the EH AM antenna
>Please visit:
>http://www.eh-antenna.com/AM_Broadcast.htm
>for more informations
>
>73 Stefano IK5IIR
>

Never say die, right Stefano?

Tom Donaly, KA6RUH

1041. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 20:57:36 UTC
From: dplatt@radagast.org
Message-ID: <vgu960hvvjjc09@corp.supernews.com>
Source record: 112785

In article <vgu7fhe1mh48cc@corp.supernews.com>,
Roy Lewallen <w7el@eznec.com> wrote:

>If you think 10 dB is insignificant, try to explain why to the person
>who's proud of his 7 element single band Yagi mounted on a 1.3
>wavelength boom, which is how much you need to get 10 dB gain over a
>dipole. Or the person who just bought a kW amplifier to drive with his
>100 watt rig.

#chuckle# Yeah, it's largely a matter of perspective.

>I've yet to see an S-meter with units greater than about 6 dB.

You're right - my recollection was off by a factor of 2:1, dB-wise.
1 S-unit is often held to be 6 dB, twice the voltage, four times the
power. That seems to be one of those Platonic ideals which can only
be approached asymptotically, but never reached in practice.

> Less than
>this is much more typical. The S units on my Icom 730 vary from 1.3 to
>4.0 dB, depending on where on the scale you are. A 10 dB signal change
>will move the meter from S-2 to S-7.

Yeah, there seems to be a _lot_ of inconsistency and variation between
different manufacturers, different rigs, different sorts of S-meter
scaling circuit, and (I suspect) different portions of the dial on any
given example of any of the above.

That Icom 730 reading sounds as if it's got something close to a
linear calibration rather than a log calibration!

>This isn't to say you can't work a whole lot of stations with 10 watts,
>or a 100 watt rig into a 10% efficient antenna -- or even with one watt.
>But you will notice a difference when you increase or decrease your
>power 10 dB.

I bow to your superior expertise! :-)

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1042. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 21:22:48 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <IUFPa.42073$C83.3324315@newsread1.prod.itd.earthlink.net>
Source record: 112786

Hi Ron -

Some comments below...

"Ron" <rmrippy@hotmail.com> wrote in message
news:p5FPa.200637$_w.8450930@twister.southeast.rr.com...
> I'm considering installing an inverted V 40 meter dipole under the eaves
of my
> house. There is room for a longer arm on one side than the other.
>
> 1) Would I be better off making each arm as long as possible and adding
whatever
> matching circuit is required?
>
You didn't say what actual dimensions you have available, or whether
the total gets you up to 66' (or so). But it sounds like your shorter side
is less than 33'. No, don't use excessive (for resonance) length, if you
intend to have a resonant monobander.

> 2) Should I make both sides equal to the shorter arm even if this makes
the
> antenna too short to self resonate?

No. If your short side is less than 33', make it as long as you can.
Then trim the long side for lowest SWR at your desired center frequency.
There should be no problem at all with unequal sides, within reason.
In fact, unbalancing the sides physically can sometimes improve the
electrical balance, and/or minimize SWR, if done correctly.
>
> 3) Should I make both sides equal in case there is sufficient length to
allow
> the antenna to self resonate.

That would be the "classical" way to do it; and if you got a good match,
you'd be done.

But if you like fine tuning, try adding a foot to one side, and measure
center freq and SWR. Then put the extra foot over on the other side, and
again measure center freq and SWR. The center freqs should be the same,
or very close. But if one configuration shows lower SWR, that is telling
you that a physical imbalance in that direction will improve your match.

My 40/80 trap dipole works best on 80 when one side is about 3' longer
than the other!

73, Ed W6LOL
>

> Sorry for the complexity of the question.
>
> Thanks for any help.
>
> Ron W4TQT
>
>

1043. Re: EH AM Broadcast news

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 21:25:25 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vguaq8jugnf66f@corp.supernews.com>
Source record: 112787

"The final results are only delayed while we wait on Stu Graham, a professional broadcast consultant, to make the measurements in accordance with FCC requirements."

"One significant virtue of the *STAR* antenna is the ability to trade height vs. radiation along the ground. In other words, more height less power, or conversely less height and more transmitter power for the same radiation level at a distance."

I'll wait for the measurement results, thanks. I'm sure you'll let us know when they're posted.

Roy Lewallen, W7EL

stefano wrote:
> Hello,
> for those interested persons, there is a big news on the EH AM antenna
> Please visit:
> http://www.eh-antenna.com/AM_Broadcast.htm
> for more informations
>
> 73 Stefano IK5IIR
>
>

1044. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 21:41:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgubp7mt7ijn78@corp.supernews.com>
Source record: 112788

There won't be much practical difference in radiation from the antenna itself among the choices. But it's much more difficult to suppress feedline radiation when the sides have different lengths. Since the feedline is likely to be in close proximity to house wiring and appliances, it's probably a good idea to keep feedline radiation to a minimum. This means using a current balun at the feedpoint, and possibly another a quarter wavelength or so farther down the feedline. People using off-center fed dipoles have reported difficulty in suppressing feedline radiation even with fairly decent baluns, but it should be possible. Of course, if the asymmetry isn't great, there shouldn't be much of a problem. The advantage to making the overall length closer to resonance is a higher feedpoint impedance (which you might be able to get close enough to 50 ohms to obviate matching) and a bit greater bandwidth. The trade between this and the potential difficulty in suppressing feedline radiation is up to you to make.

What I'd probably do is make the dipole symmetrical, match it at the feedpoint with lumped components, and feed it with coax via a current balun at the feedpoint. But that's only one of a number of possible, and about equally workable, solutions.

Roy Lewallen, W7EL

Ron wrote:
> I'm considering installing an inverted V 40 meter dipole under the eaves
> of my house. There is room for a longer arm on one side than the other.
>
> 1) Would I be better off making each arm as long as possible and adding
> whatever matching circuit is required?
>
> 2) Should I make both sides equal to the shorter arm even if this makes
> the antenna too short to self resonate?
>
> 3) Should I make both sides equal in case there is sufficient length to
> allow the antenna to self resonate.
>
> Sorry for the complexity of the question.
>
> Thanks for any help.
>
> Ron W4TQT
>

1045. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 21:43:45 UTC
From: derswede@aol.comspam.com
Message-ID: <20030711174345.05990.00000239@mb-m04.aol.com>
Source record: 112789

<< FM? Has CB changed that much or are you using non type-accepted gear? >>

Richard, he's in Denmark. Not sure of the requirements there, but I believe
that FM is allowed in certain segments.

Cheers;
Andrew

1046. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 21:54:33 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F0F320A.70262255@att.net>
Source record: 112791
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Phil Kane wrote:

> On Fri, 11 Jul 2003 14:26:49 GMT, Dick Carroll wrote:
>
> >> >I still hear maritime telephone service on 8 MHz USB.\
> > >
> > >In the Sat-com age??? How Luddite can you get???
> >
> > You obvioulsly don't own stock in ARINC or Globe Wireless....
> >
> > As I pointed out earlier, INMARSAT is great until the bill shows up -
> > the cost is out in deep space (pardon the pun).
> >

It's the same factor that kept the Interstate Police HF Radiotelegraph Net in operation into the early 70's even though wireline teletype had fully matured many decades earlier. The cost of dedicated wire lines, monopolized by one AT&T in those days, was just too high to justify. Plus some states and others hired personnel to do "double duty" with both commercial radiotelegraph operators and radidotelephone operators licenses so that they could handle interstate and
interdepartmental Morse messages, operate the voice dispatch centers, and do low echelon radio maintenance as circumstances demanded. Of course it's all gone now.

> > Wanna talk about Luddite methods of communication? How 'bout
> > per-message traffic handling by CW ????
> >

Evidently you've never observed a veteran, skilled CW message handler at work. Many would have given any voice traffic handling system a real competitive time of it, and some hams still do.

> >> Not by KFS/KPH, though. AT&T closed their SF HF station (KMI) a
> >> couple of years ago so I don't know who is furnishing that service
> >> now. It may be ARINC (Aeronautical Radio, Inc) which is big in HF
> >> SSB. I'll try to find out.
> >
> > "My guy" says that it could be ARINC filling in the gap that ATT
> > left, or it could be WLO, the maritime public coast station in
> > Mobile, AL which also remote-controls KLB, the coast station in
> > Seattle, WA.
> >

> >> >Also in-flight comms over oceans are done with HF.
> >>
> >> That's ARINC.
> >
> >Last time I flew to Seattle aboard a 757 I stuck my GPS up to the
> >window and read out the aircraft speed....526MPH.
>
> >Seems like they could use a more upscale comm system aboard planes
> >when such technology is that common.
>
> GPS and INMARSAT are common on newer aircraft. So is Air-Ground
> Phone dial-up service (put your plastic into the slot in front of
> your seat). Just wait 'till the bill shows up.

In 1972 I worked Bill Leonard, W2SKE, the TV news veteran, on 2 meters simplex when I heard him calling CQ /aeronauticala mobile. He was on a jetliner 30 m inutes out of Dallas at 30K feet headed for New York City, using a rig identical to the one I was using mobile at the time- a Drake TR22. All of a watt and a half on each end. He said he was holding his up to the window of the Boeing 707 (in the days prior to the banning of such operation) Our path didn't last long but we sure had a good noise quiet QSO while it did.
THAT was some pretty simple, inexepensive, unsophisticated but very workable technology. Looks to me that sometimes high-tech can get in the way of getting things done. But it's SACRED, and almost sacreligious to make such a statement.

1047. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 22:01:10 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0F33A6.C00737C8@uci.edu>
Source record: 112792

W5DXP wrote:
>
> Jim Kelley wrote:
> > Here's a quote from Born and Wolfe, pg. 48, talking about waves
> > encountering the interface between dense and less dense media:
> >
> > "Although there is a field in the second medium, it is easy to see that
> > no energy flows across the boundary.
>
> This is just another one of your *NET* energy statements.

Actually it's just a quote from an optics book describing, among other things, how a field can cross a boundary without energy necessarily flowing across it. It happens to be the same thing I've been trying to explain to you.

> > I notice you didn't mention anything about photons dematerializing and
> > rematerializing over there. Give that one a try. :-)
>
> I did, and no one objected. But we don't need quantum physics to
> explain HF RF waves.

I searched the entire thread. Not one mention of photons dematerializing or rematerializing.

> Upon what
> technical point do we still disagree? If the rearward-traveling
> waves give up their energy to the two waves traveling in the
> forward direction, the energy has changed direction, by definition.

Actually you have it backwards. If energy had been reflected, the forward waves would have given up their energy to the reflected waves. The reflected waves only give up their energy in a sense by not taking it in the first place.

> There is not enough energy in P1 and P2 to support Pfwd2. Constructive
> interference energy must be added into Pfwd2.

P1 and P2 are the only terms in the equation, Cecil. Obviously they have enough energy to produce the correct answer. But I know what you are getting at, Cecil, and it is interesting. But the example Joseph Legris gave you (the same one I described previously) should illustrate for you the problem with what you are saying. It's apparent from that example that energy from the lasers goes directly to the constructive interference side without having to come from somewhere else (other than the source). And it's also true that that only occurs when destructive

interference is also occurring elsewhere.

> According to Hecht, that
> constructive interference energy can only originate from destructive
> interference.

What he's saying is that you can't have one without the other.

73, Jim AC6XG

1048. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 22:43:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0f3e76_7@corp.newsgroups.com>
Source record: 112793

Jim Kelley wrote:

> Actually it's just a quote from an optics book describing, among other
> things, how a field can cross a boundary without energy necessarily
> flowing across it. It happens to be the same thing I've been trying to
> explain to you.

But nobody cares about your *NET* energy quotations. This thread is
about the energy components underlying the steady-state solution.
What is it about that statement that you don't understand? If you
want to discuss net energy, please start another thread.

> I searched the entire thread. Not one mention of photons
> dematerializing or rematerializing.

It was in another thread, Jim.

> Actually you have it backwards. If energy had been reflected, the
> forward waves would have given up their energy to the reflected waves.

The forward wave *DOES* give up (Pfwd*|rho|^2) energy to the reflected wave
at a mismatched load. I'm sorry to pull an argumentum ad populum on you
but everybody on this newsgroup knows that except you.

> The reflected waves only give up their energy in a sense by not taking
> it in the first place.

More Bafflegab. Please research the reflected power Poynting vector from
the previously provided reference of Ramo and Whinnery and get back to
us.

> P1 and P2 are the only terms in the equation, Cecil.

Which leads you to believe that P1+P2 > P1+P2? What is it about destructive
interference energy feeding energy to the constructive interference event
that you do not understand?

Assume Wave(1) is associated with P1 and Wave(2) is associated with P2.

P1 + P2 + 2*Sqrt(P1*P2) is the proper equation when Wave(1) and Wave(2)
are in zero phase. On the other side of the impedance discontinuity we
have a similar equation: P3 + P4 - 2*Sqrt(P3*P4). Agree so far?

Pref1 = P3 + P4 - 2*Sqrt(P3*P4) = zero reflected power toward the source.

So P3 + P4 = 2*Sqrt(P3*P4) = 100% destructive interference during wave
cancellation, i.e. Wave(3) and Wave(4) are destroyed. The destructive
interference equals the total of P3+P4 *because* those waves were
destroyed. Wave(3) and Wave(4) give up their combined energy components

as destructive interference energy.

Hecht tells us that the magnitude of the destructive interference must equal the magnitude of the constructive interference. Guess what? He is right! |2*Sqrt(P3*P4)| does indeed equal |2*Sqrt(P1*P2)| and we can simply say that according to Hecht, |2*Sqrt(P1*P2)| comes from |2*Sqrt(P3*P4)|. The destructive interference event supplies the power for the constructive interference event. I'm getting tired of typing the following quote from _Optics_, by Hecht:

"The principle of Conservation of Energy makes it clear (to everyone except Jim) that if there is constructive interference at one point, the 'extra' energy at that location must have come from ... destructive interference somewhere else." I don't know how Hecht could have said it any clearer. The constructive interference energy is supplied from the destructive interference event.

So the valid equation becomes P1+P2+2*Sqrt(P3*P4) = P1+P2+P3+P4, i.e. all the power in the entire Z0-matched system winds up flowing toward the load but we already knew that. How you can argue with that fact is simply unbelievable.

> What he's saying is that you can't have one without the other.

Yes, and the destructive interference event *supplies* energy to the constructive interference event. It certainly cannot be vice versa as you are attempting to imply. Hecht was very careful to say that constructive interference requires a source of energy from a destructive interference event. See above quote.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1049. Beam question - roof mounted??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 23:28:55 UTC
From: GS <greatsurplus@hotmail.com>
Message-ID: <f1747a750d9f3128be76842eed5cd9d9@news.meganetnews.com>
Source record: 112795

How effective will a Mosley TA-33 be mounted on a small tripod on a second story roof? 20 - 25 feet above ground, about 6 feet above the roof? I'm mostly interested in 20 meters.

Thanks

Dave WB7AWK

1050. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 23:30:09 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgui47d33uk2da@corp.supernews.com>
Source record: 112794

About this "reflected power Poynting vector" -- first read this quote from King, Mimno, and Wing's _Transmission Lines, Antennas, and Waveguides_. It begins at p. 220 of the Dover paperback edition:

"Note that, whereas the real part of the _integral_ of the normal component of the complex Poynting vector S over the surface of a great sphere (or any other completely closed surface) correctly and uniquely gives the average power lost by the moving charges on one side and gained by the moving charges on the other side of the surface, the conclusion cannot be drawn that the real part of the complex Poynting vector at some point on the surface is itself a measure of the _fraction_ of the toal power that is transferred across a unit area at that point. There is nothing in the mathematical analysis to justify such a conclusion, and experimental verification is available only for the _total_ power as measured by the complete integral. In fact, it is analytically possible with equal correctness to define a veriety of energy-flow functions that are entirely different from the Poynting vector. Each of these functions gives a _different_ value to the power transferred across a particular unit area, but they all give exactly the same total power when integrated over the same closed surface. It is the integral of the normal component of the Poynting vector over a closed surface that is important, not the Poynting vector itself."

So where do you draw the required surface over which to integrate the Poynting vector and thus obtain the "reflected power"?

Would you please give a simple example, with numbers, showing how this quantity is calculated?

Roy Lewallen, W7EL

W5DXP wrote:
> Jim Kelley wrote:
>
>> Actually it's just a quote from an optics book describing, among other
>> things, how a field can cross a boundary without energy necessarily
>> flowing across it. It happens to be the same thing I've been trying to
>> explain to you.
>
>
> But nobody cares about your *NET* energy quotations. This thread is
> about the energy components underlying the steady-state solution.
> What is it about that statement that you don't understand? If you
> want to discuss net energy, please start another thread.
>
>> I searched the entire thread. Not one mention of photons

>> dematerializing or rematerializing.
>
>
> It was in another thread, Jim.
>
>> Actually you have it backwards. If energy had been reflected, the
>> forward waves would have given up their energy to the reflected waves.
>
>
> The forward wave *DOES* give up (Pfwd*|rho|^2) energy to the reflected wave
> at a mismatched load. I'm sorry to pull an argumentum ad populum on you
> but everybody on this newsgroup knows that except you.
>
>> The reflected waves only give up their energy in a sense by not taking
>> it in the first place.
>
>
> More Bafflegab. Please research the reflected power Poynting vector from
> the previously provided reference of Ramo and Whinnery and get back to
> us.
>
>> P1 and P2 are the only terms in the equation, Cecil.
>
>
> Which leads you to believe that P1+P2 > P1+P2? What is it about destructive
> interference energy feeding energy to the constructive interference event
> that you do not understand?
>
> Assume Wave(1) is associated with P1 and Wave(2) is associated with P2.
>
> P1 + P2 + 2*Sqrt(P1*P2) is the proper equation when Wave(1) and Wave(2)
> are in zero phase. On the other side of the impedance discontinuity we
> have a similar equation: P3 + P4 - 2*Sqrt(P3*P4). Agree so far?
>
> Pref1 = P3 + P4 - 2*Sqrt(P3*P4) = zero reflected power toward the source.
>
> So P3 + P4 = 2*Sqrt(P3*P4) = 100% destructive interference during wave
> cancellation, i.e. Wave(3) and Wave(4) are destroyed. The destructive
> interference equals the total of P3+P4 *because* those waves were
> destroyed. Wave(3) and Wave(4) give up their combined energy components
> as destructive interference energy.
>
> Hecht tells us that the magnitude of the destructive interference must
> equal the magnitude of the constructive interference. Guess what? He is
> right! |2*Sqrt(P3*P4)| does indeed equal |2*Sqrt(P1*P2)| and we can simply
> say that according to Hecht, |2*Sqrt(P1*P2)| comes from |2*Sqrt(P3*P4)|.
> The destructive interference event supplies the power for the constructive
> interference event. I'm getting tired of typing the following quote from
> _Optics_, by Hecht:
>

> "The principle of Conservation of Energy makes it clear (to everyone except
> Jim) that if there is constructive interference at one point, the 'extra'
> energy at that location must have come from ... destructive interference
> somewhere else." I don't know how Hecht could have said it any clearer.
> The constructive interference energy is supplied from the destructive
> interference event.
>
> So the valid equation becomes P1+P2+2*Sqrt(P3*P4) = P1+P2+P3+P4, i.e.
> all the power in the entire Z0-matched system winds up flowing toward
> the load but we already knew that. How you can argue with that fact
> is simply unbelievable.
>
>> What he's saying is that you can't have one without the other.
>
>
> Yes, and the destructive interference event *supplies* energy to the
> constructive interference event. It certainly cannot be vice versa
> as you are attempting to imply. Hecht was very careful to say that
> constructive interference requires a source of energy from a
> destructive interference event. See above quote.

1051. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 23:35:59 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hhvlf3m.pminews@netnews.comcast.net>
Source record: 112796
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 11 Jul 2003 17:38:56 GMT, Richard Clark wrote:

>One need only look at the defunct 500KHz emergency radio operation to
>observe that two radio operators was abandoned long ago.

Only because of economic reasons. The "technology" worked just fine
but the shipping companies figured out a way to save $100,000 per
vessel per year, which is really peanuts compared to the cost of
operating a modern cargo vessel ($5000 per day to tie up at the
dock), by getting rid of the Radio Officer, and that was only in the
last 5 or so years.

>And it was
>"modern" technology in the form of a signature tone that moved it the
>first step away.

Do you mean "auto alarm" sequence? That wasn't a tone. It was
twelve (or more) 4-second dashes (3.8 sec. to 4.2 sec. by _my_
stopwatch) with one second silence between them. I inspected and
tested an awful lot of auto-alarm generators and receivers during
ship radio safety inspections over a period of 30+ years until the
GMDSS system came in and those inspections were privatized.

Standing watch by auto-alarm receiver was permitted only on cargo
vessels which carried one operator who was required to be on duty
eight hours a day. The auto-alarm watch could be used when the
operator was off-duty or on a break.

The four-second-dash auto-alarm signal was sent to alert other
vessels and shore stations that a Distress Call (with the famous
SOS) was following. On shipboard, if watch was being kept by
auto-alarm receiver, reception of the auto-alarm signal would
trigger a loud bell on the bridge, in the radio operator's cabin,
and in the radio room. One could not miss that activation !

The radiotelephone auto-alarm signal was a two-tone signal to
actuate a muted 2182 receiver on the bridge. It was supplanted by a
watch receiver on 2187.5 kHz in a Digital Selective Call system.

>And that was after the rules were relaxed (or put in
>place originally) to require 15 minutes monitoring of each hour.

Not quite.

The original pre-WW-II requirement was two "silent periods" of three minutes each, starting fifteen minutes after the hour and 45 minutes after the hour. During those periods, as well as when not actually sending and receiving traffic on another frequency, the operator on duty was obliged to monitor 500 kHz for distress traffic. After WW-II, a similar requirement was added for radiotelephone distress traffic on 2182 kHz, with the silent periods of three minutes each starting on the hour and half-hour.

Each radio room was required to be equipped with a special clock having the silent periods marked - a red wedge for the telegraphy silent periods and a green wedge for the radiotelephone silent periods, as well as red markings around the periphery of the dial for the four-second auto-alarm dashes.

Such a clock, made by Chelsea in six-inch size in a heavy brass case with an 8-day precision windup movement, would fetch about $800 now if one could be found, but a replica 10 inch diameter wall clock with a quartz movement (and all the right markings) is available on the internet for $15, believe it or not. I have one on the wall of my comm room / ham shack and it's just as advertised at:

<http://www.cafeshops.com/amradio,amradio2,amradio3.4044580>

(I'm not connected with them in any way.)

>In the millennium before, it was semaphore and smoke signals.

In 1965, in celebration of its centenary, the ITU published a wonderful "coffee table" book entitled "From Semaphore to Satellite" which covered the events and technology of its first 100 years including some very interesting pictures. I don't know if it is still available, but I was able to pick up an original edition when I was in Geneva on ITU business in 1967.

>Two decades before the best you had was CB,

Nonsense. I had a 2-meter transceiver in my car in 1958, which worked through a repeater in Los Angeles, crystal controlled AM, of course. Many of my friends who were hams did, too. By the time that the "CB" craze hit, we had 2-meter crystal-controlled FM rigs. My first mobile dial-the-channel synthesized 2-m transceiver (Icom IC-280) was in 1976 and my first 2-meter mobile transceiver with memory channels, variable offsets, CTCSS tones, and all the bells and whistles was in 1986 (and I was a "late bloomer" on that one) when cell-phones were still lunchbox-size and their coverage was spotty.

"Nothing new umder the sun."

--
73 de K2ASP - Phil Kane

From a Clearing in the Silicon Forest
Beaverton (Washington County) Oregon

Retired and loving every minute of it....
Work was getting in the way of my hobbies

1052. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-11 23:45:23 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F0F4C13.91122DA7@uci.edu>
Source record: 112798

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > Actually it's just a quote from an optics book describing, among other
> > things, how a field can cross a boundary without energy necessarily
> > flowing across it. It happens to be the same thing I've been trying to
> > explain to you.
>
> But nobody cares about your *NET* energy quotations.

Nobody said anything about *NET* energy in the quotation.

> The forward wave *DOES* give up (Pfwd*|rho|^2) energy to the reflected wave
> at a mismatched load. I'm sorry to pull an argumentum ad populum on you
> but everybody on this newsgroup knows that except you.

At a single boundary, yes. We are discussing the effects of a pair of
boundaries.

> > P1 and P2 are the only terms in the equation, Cecil.

> Which leads you to believe that P1+P2 > P1+P2?

I don't believe that.

> Assume Wave(1) is associated with P1 and Wave(2) is associated with P2.

> P1 + P2 + 2*Sqrt(P1*P2) is the proper equation when Wave(1) and Wave(2)
> are in zero phase. On the other side of the impedance discontinuity we
> have a similar equation: P3 + P4 - 2*Sqrt(P3*P4). Agree so far?

Having posted those equations for you on this very newsgroup, I think
you know the answer to that.

> The destructive
> interference equals the total of P3+P4 *because* those waves were
> destroyed.
> Wave(3) and Wave(4) give up their combined energy components
> as destructive interference energy.

There exists no mechanism for them to "give up" their energy in the way
you describe.

> "The principle of Conservation of Energy makes it clear (to everyone except
> Jim)

Unless you're prepared to ask "everyone except Jim" what they think, we can assume this is nothing more than a rhetorical statement that contributes nothing to the discussion.

> So the valid equation becomes P1+P2+2*Sqrt(P3*P4) = P1+P2+P3+P4, i.e.
> all the power in the entire Z0-matched system winds up flowing toward
> the load but we already knew that. How you can argue with that fact
> is simply unbelievable.

I've never disputed the solutions produce the same number. I disputed the validity of the approach you took to arrive at the equation.

ac6xg

1053. Re: Beam question - roof mounted??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 00:01:54 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <benj25$h6d$1@slb0.atl.mindspring.net>
Source record: 112797

It will do alright. You will not get the 'long haul low angle' stuff, but
you will do fine. Stick it up there and enjoy what you can do.

Dan/W4NTI

"GS" <greatsurplus@hotmail.com> wrote in message
news:f1747a750d9f3128be76842eed5cd9d9@news.meganetnews.com...
> How effective will a Mosley TA-33 be mounted on a small tripod on
> a second story roof? 20 - 25 feet above ground, about 6 feet
> above the roof? I'm mostly interested in 20 meters.
>
> Thanks
>
> Dave WB7AWK
>
>

1054. Re: TA-33 Beam question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 00:07:48 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <benjd6$i11$1@slb2.atl.mindspring.net>
Source record: 112799

No tuning required on the TA-33. If your into phone use the holes on each element that are for phone (shorter ones). For mainly low end use the longer holes spots.

Make sure the strap goes from the driven element to the cross piece support for the driven element. Basically just follow the instructions. Make sure the spacing is correct and go for it.

Dan/W4NTI

"GS" <greatsurplus@hotmail.com> wrote in message news:6f61b2074b4a14c7f773cbf6144bac25@news.meganetnews.com...
> Hello all,
>
> Funny how things work. I have been trying to sell my Mosley
> TA-33 beam and AR-33 CDE rotator. I bought them in 97
> fully intending to put them up, but never got to it. Been sitting
> in the backyard since then, on the roof of my shed, disassembled.
> The rotator of course was in the house.
>
> But after a few days of no local interest in it, I think I've decided
> I want to keep it! I got it all out on the front lawn today, and
> layed out all the pieces to match the assembly instructions,
> and wow! It looked really cool and now I think I want to keep
> it - I've never had a beam, so now I'm thinking I'd like to put it
> up and see what it's like to work 20 with a directional antenna.
>
> But all I have is the assembly part of the manual - how difficult
> is it to tune? Can I prop it on a ladder on my lawn and tune
> it 'on earth' using my MFJ antenna tuning meter?
>
> And since I don't plan to install a tower on this particular whim,
> can I get away with putting it on a short tripod bolted to the
> roof on the second floor? Or is that a no-no both for structural
> reasons as well as proximity to the composition shingles?
>
> Any advice would be appreciated!
>
> Dave WB7AWK
>
>

1055. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 00:08:20 UTC
From: N4LQ <N4LQ@igLou.com>
Message-ID: <3f0f518b_3@news.iglou.com>
Source record: 112800

Why not take a look at the Carolina Windom from Radio Works. It might meet
your requirements.

--
Steve Ellington N4LQ.
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vgubp7mt7ijn78@corp.supernews.com...
> There won't be much practical difference in radiation from the antenna
> itself among the choices. But it's much more difficult to suppress
> feedline radiation when the sides have different lengths. Since the
> feedline is likely to be in close proximity to house wiring and
> appliances, it's probably a good idea to keep feedline radiation to a
> minimum. This means using a current balun at the feedpoint, and possibly
> another a quarter wavelength or so farther down the feedline. People
> using off-center fed dipoles have reported difficulty in suppressing
> feedline radiation even with fairly decent baluns, but it should be
> possible. Of course, if the asymmetry isn't great, there shouldn't be
> much of a problem. The advantage to making the overall length closer to
> resonance is a higher feedpoint impedance (which you might be able to
> get close enough to 50 ohms to obviate matching) and a bit greater
> bandwidth. The trade between this and the potential difficulty in
> suppressing feedline radiation is up to you to make.
>
> What I'd probably do is make the dipole symmetrical, match it at the
> feedpoint with lumped components, and feed it with coax via a current
> balun at the feedpoint. But that's only one of a number of possible, and
> about equally workable, solutions.
>
> Roy Lewallen, W7EL
>
> Ron wrote:
> > I'm considering installing an inverted V 40 meter dipole under the eaves
> > of my house. There is room for a longer arm on one side than the other.
> >
> > 1) Would I be better off making each arm as long as possible and adding
> > whatever matching circuit is required?
> >
> > 2) Should I make both sides equal to the shorter arm even if this makes
> > the antenna too short to self resonate?
> >
> > 3) Should I make both sides equal in case there is sufficient length to
> > allow the antenna to self resonate.
> >
> > Sorry for the complexity of the question.

> >
> > Thanks for any help.
> >
> > Ron W4TQT
> >
>

1056. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 00:54:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <benm89cel1@hercules.btinternet.com>
Source record: 112801

"N4LQ" wrote
> Why not take a look at the Carolina Windom from Radio Works. It might meet
> your requirements.
==========

Of course it will. Why do nitpicking busy-bodies stir up worries about radiation from feed-lines? It's never wasted.

Feedline radiation may disappear in unknown directions, but, even when a dipole is centre-fed, the radiation pattern in the midst of the usual environmental cluttering uncertainty, and the manner in which the feedline is led away from then antenna, the whole thing is always a matter of guesswork.

As the antenna is non-rotatable it doesn't matter very much what the very uncertain distorted radiation pattern is anyway.

Just erect the antenna in the best possible way you can manage in the limited space available and see what happens. Most likely you will not be disappointed in its performance.

Good DX !

Reg, G4FGQ

1057. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 01:11:52 UTC
From: Ron <rmrippy@hotmail.com>
Message-ID: <sfJPa.264289$jp.7209951@twister.southeast.rr.com>
Source record: 112802

What I did not mention is that is that I live in a condo with antenna restrictions. But I figure if I put the antenna under the eaves of the house, it will be virtually invisible except at the apex where the the feed wires enter the attic. I have purchased a B1-5K balun from Radio Works and plan to use it on the attic side of the wall.

I am now using a Buddipole in the attic and it works, but I am hoping to get better radiation (and less telephone and TV RFI) by using a full length dipole and getting it at least a little further away from attic wiring, heating/AC ducts, etc. Also I am afraid to run more than 100 watts, not only due to RFI concerns, but from a fire safety standpoint as well.

I just bought an Autek antenna analyzer which I think will come in handy. At least with a feed point in the attic, I should be able to make impedance measurements easily.

So I would like to use a Carolina Windom, but my situation will not allow it. We have lots of tall trees in the back yard and I often look at them longingly, but realistically I think I'm just day dreaming, hi. Anyway, thanks for all replies.

Ron

N4LQ wrote:
> Why not take a look at the Carolina Windom from Radio Works. It might meet
> your requirements.
>
>
> --
> Steve Ellington N4LQ.
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vgubp7mt7ijn78@corp.supernews.com...
>
>>There won't be much practical difference in radiation from the antenna
>>itself among the choices. But it's much more difficult to suppress
>>feedline radiation when the sides have different lengths. Since the
>>feedline is likely to be in close proximity to house wiring and
>>appliances, it's probably a good idea to keep feedline radiation to a
>>minimum. This means using a current balun at the feedpoint, and possibly
>>another a quarter wavelength or so farther down the feedline. People
>>using off-center fed dipoles have reported difficulty in suppressing
>>feedline radiation even with fairly decent baluns, but it should be
>>possible. Of course, if the asymmetry isn't great, there shouldn't be
>>much of a problem. The advantage to making the overall length closer to
>>resonance is a higher feedpoint impedance (which you might be able to
>>get close enough to 50 ohms to obviate matching) and a bit greater
>>bandwidth. The trade between this and the potential difficulty in

>>suppressing feedline radiation is up to you to make.
>>
>>What I'd probably do is make the dipole symmetrical, match it at the
>>feedpoint with lumped components, and feed it with coax via a current
>>balun at the feedpoint. But that's only one of a number of possible, and
>>about equally workable, solutions.
>>
>>Roy Lewallen, W7EL
>>
>>Ron wrote:
>>
>>>I'm considering installing an inverted V 40 meter dipole under the eaves
>>>of my house. There is room for a longer arm on one side than the other.
>>>
>>>1) Would I be better off making each arm as long as possible and adding
>>>whatever matching circuit is required?
>>>
>>>2) Should I make both sides equal to the shorter arm even if this makes
>>>the antenna too short to self resonate?
>>>
>>>3) Should I make both sides equal in case there is sufficient length to
>>>allow the antenna to self resonate.
>>>
>>>Sorry for the complexity of the question.
>>>
>>>Thanks for any help.
>>>
>>>Ron W4TQT
>>>
>>
>
>

1058. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 01:15:21 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <o9JPa.2519$_K5.637@fe01.atl2.webusenet.com>
Source record: 112803

Andrew is correct ! In the U.K, ect, Europe uses FM, NOT AM! and has for a number of years! Gives cause to just WHY nobody improts them here , for conversion to 10 METERS! Jim nn7k

"AA" <derswede@aol.comspam.com> wrote in message news:20030711174345.05990.00000239@mb-m04.aol.com...
> << FM? Has CB changed that much or are you using non type-accepted gear?
>>
>
>
> Richard, he's in Denmark. Not sure of the requirements there, but I believe
> that FM is allowed in certain segments.
>
> Cheers;
> Andrew

1059. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 01:18:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vguofv6pp51t1a@corp.supernews.com>
Source record: 112804

Thanks, Reg. I now can proudly add "Busy-body" to my long-held titles of Reg's Old Wife and Nitpicker. I'm honored.

Roy Lewallen, W7EL

Reg Edwards wrote:
> "N4LQ" wrote
>
>>Why not take a look at the Carolina Windom from Radio Works. It might meet
>>your requirements.
>
> ====================================
>
> Of course it will. Why do nitpicking busy-bodies stir up worries about
> radiation from feed-lines? It's never wasted.
> . . .

1060. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 01:29:05 UTC
From: Myron <msteir@charter.net>
Message-ID: <vgup30tk62fq39@corp.supernews.com>
Source record: 112805

Dave,

Can I come back to a point you made earlier? You wrote.....
- Add a choke balun where the coax reaches the tuner (just take 8-10'
of the coax, and wind it into a loop 8-10" in diameter and use
tiewraps to hold it together). This will help maintain balance
between the two sides of the dipole.

There is not enough supplied Coax available to make the choke balun and
still reach my transciever. There are no markings on the cable supplied by
Icom but it looks like they use RG8U. I haven't purchased cable in many
years and seem to remember that insulation and shielding varies by
manufacturer. I'll look for maximum shielding but wonder whether foam
insulation is OK for the choke balun?

Somewhere in the back of my mind I remember seeing something about the cons
of foam insulated coax. Am I getting paranoid?

Myron

1061. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 01:33:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <54pugvoc0knak7ubjhuh577pt1qqrqorqs@4ax.com>
Source record: 112806

On Fri, 11 Jul 2003 18:18:49 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Thanks, Reg. I now can proudly add "Busy-body" to my long-held titles of
>Reg's Old Wife and Nitpicker. I'm honored.
>
>Roy Lewallen, W7EL
>
>Reg Edwards wrote:
>> "N4LQ" wrote
>>
>>>Why not take a look at the Carolina Windom from Radio Works. It might meet
>>>your requirements.
>>
>> ====================================
>>
>> Of course it will. Why do nitpicking busy-bodies stir up worries about
>> radiation from feed-lines? It's never wasted.
>> . . .

Hi Roy,

Nevermind that most who post here that suffer from feed-line radiation
can now rest at ease with their plight knowing that the problem is
their own nitpicking (Punchinello has obviously never kissed a mike
like Cecil - that or his glass of wine insulates/anesthetizes his soft
tissues).

73's
Richard Clark, KB7QHC

1062. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 01:38:35 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jepugv01hhjfd0ch7q7aplskq8up6obfn8@4ax.com>
Source record: 112807

On Fri, 11 Jul 2003 18:15:21 -0700, <Jimnn7k@reno.rmci.net> wrote:

>Andrew is correct ! In the U.K, ect, Europe uses FM, NOT AM! and has for a
>number of years! Gives cause to just WHY nobody improts them here , for
>conversion to 10 METERS! Jim nn7k
>

Hi Jim,

Glad to have been offered that tid-bit of information from der Swede
(AA).

The answer to your question is that the gene pool has shrunk to the
point of equipment operators being the dominate specie.

73's
Richard Clark, KB7QHC

1063. Re: Beam question - roof mounted??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 01:38:35 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <yt2dnfQt_bQ_-5KiXTWJjQ@comcast.com>
Source record: 112808

At my old house I had a TA33JR at 29 feet. Made contacts all over the world
on 20 meter SSB using 100W. Worked even better on 10 &15.

Tam/WB2TT
"GS" <greatsurplus@hotmail.com> wrote in message
news:f1747a750d9f3128be76842eed5cd9d9@news.meganetnews.com...
> How effective will a Mosley TA-33 be mounted on a small tripod on
> a second story roof? 20 - 25 feet above ground, about 6 feet
> above the roof? I'm mostly interested in 20 meters.
>
> Thanks
>
> Dave WB7AWK
>
>

1064. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 02:08:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5rqugv4u363p1jun0oan56va12jobj8d2e@4ax.com>
Source record: 112809

On Sat, 12 Jul 2003 01:11:52 GMT, Ron <rmrippy@hotmail.com> wrote:

>What I did not mention is that is that I live in a condo with antenna
>restrictions. But I figure if I put the antenna under the eaves of the house, it
>will be virtually invisible except at the apex where the the feed wires enter
>the attic. I have purchased a B1-5K balun from Radio Works and plan to use it on
>the attic side of the wall.

Ever thought of using a tuned loop (very small like a gamma match, or
similar) driving a rain gutter? You might be able to hide the
components behind it under the eaves.
>
>I am now using a Buddipole in the attic and it works, but I am hoping to get
>better radiation (and less telephone and TV RFI) by using a full length dipole
>and getting it at least a little further away from attic wiring, heating/AC
>ducts, etc. Also I am afraid to run more than 100 watts, not only due to RFI
>concerns, but from a fire safety standpoint as well.

This, in parts of Britain, is called nit-picking (British nits seem to
be unrelated to photometric nits). Anyway, any coupling from feed
line radiation into nearby susceptible wiring can be suppressed with a
current BalUn. Given the proximity of so many opportunities to
distort the field, you are sure to suffer imbalance (the leading
contributor to Common Mode). If these problems arise from the
radiator's field, distance is the best solution.
>
>I just bought an Autek antenna analyzer which I think will come in handy. At
>least with a feed point in the attic, I should be able to make impedance
>measurements easily.
>
>So I would like to use a Carolina Windom, but my situation will not allow it. We
>have lots of tall trees in the back yard and I often look at them longingly, but
>realistically I think I'm just day dreaming, hi. Anyway, thanks for all replies.
>
>Ron

Hi Ron,

A thin wire with beige coloring could be nearly invisible (the keyword
being "nearly" ... depends on the visual acuity of the antennazis).

73's
Richard Clark, KB7QHC

1065. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 02:11:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0f6f35_3@corp.newsgroups.com>
Source record: 112810

Roy Lewallen wrote:
> So where do you draw the required surface over which to integrate the
> Poynting vector and thus obtain the "reflected power"?

As you know, a one-dimensional transmission line is a lot easier to
work with than the 3D space involved with radiation from antennas.
In fact, all we need for a transmission line Poynting vector is
a plane. Since the field area of the coax is constant and known, we
can treat it as a constant normalized value. It allows us to come
up with a simplified version of what you posted. Quoting from,
"Fields and Waves in Communications Electronics", by Ramo, Whinnery,
and Van Duzer: "... we are often most interested in the ratio of power
in the reflected wave to that in the incident wave, and this ratio is
given by ...

Pz-/Pz+ = |rho|^2"

where Pz- is the reflected power Poynting vector, Pz+ is the forward
power Poynting vector, and rho is the reflection coefficient. Pretty
simple stuff that I learned 45 years ago. Again from the same book:

Pz+ = (E+)x(H+) and Pz- = -(E-)x(H-)
--
73, Cecil http://www.qsl.net/w5dxp

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1066. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 02:18:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0f70ed_3@corp.newsgroups.com>
Source record: 112811

Jim Kelley wrote:

> W5DXP wrote:
>>But nobody cares about your *NET* energy quotations.
>
> Nobody said anything about *NET* energy in the quotation.

But it is obvious that they are referring to *NET* energy. Please
stop trying to sneak *NET* energy stuff into the argument.

>>The forward wave *DOES* give up (Pfwd*|rho|^2) energy to the reflected wave
>>at a mismatched load. I'm sorry to pull an argumentum ad populum on you
>>but everybody on this newsgroup knows that except you.
>
> At a single boundary, yes.

If it exists at a single boundary, then it exists.

>>Which leads you to believe that P1+P2 > P1+P2?
>
> I don't believe that.

If you believe that all the power comes from P1 and P2 in the following
equation, then yes, you do believe that.

P1 + P2 + 2*Sqrt(P1*P2) = Pfwd2

Hint: the 2*Sqrt(P1*P2) power does NOT come from P1 and P2. If it did
you would be violating the conservation of energy principle and creating
free energy. That term is the *INTERFERENCE TERM* which is supplied from
the destructive interference going on on the other side of the impedance
discontinuity. Why do you have such a problem with the concept of
conservation of energy?

>>The destructive
>>interference equals the total of P3+P4 *because* those waves were
>>destroyed.
>>Wave(3) and Wave(4) give up their combined energy components
>>as destructive interference energy.
>
> There exists no mechanism for them to "give up" their energy in the way
> you describe.

The mechanism is conservation of energy involving destructive interference
feeding energy to the constructive interference event. The guys over on
sci.physics.electromag can explain it to you.
--

73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1067. Re: 'Gluing' a broken glass antenna insulator.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 02:59:32 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <77uugvcubck9jt2c553fahbohtdifq5bt4@4ax.com>
Source record: 112830

On Fri, 11 Jul 2003 09:48:41 -0230, Terry <tsanford@nf.sympatico.ca>
wrote:

>May I insert a practical subject into this news group which
>frequently discusses SWRs, the speed of electromagnetic
>propagation and other exotica?
>Ever see those adverts where a hefty guy wearing construction
>Safety Helmet is hanging from one little spot of 'Krazy Glue'
>from a steel beam?

I used to work in advertising. Don't believe everything you see :-)

Otherwise, try the web sites for the Wireman, Surplus Sales of
Nebraska or whatever -- they got lots of insulators; the Surplus
folks, in particular, have lots of pretty glass jobs.

Bob
k5qwg

1068. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 04:10:55 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F0F8A3E.F96FD71E@att.net>
Source record: 112812

Not only that, I always considered RF voltage that bit me on the lip as wasted!

Dick

Roy Lewallen wrote:

> Thanks, Reg. I now can proudly add "Busy-body" to my long-held titles of
> Reg's Old Wife and Nitpicker. I'm honored.
>
> Roy Lewallen, W7EL
>
> Reg Edwards wrote:
> > "N4LQ" wrote
> >
> >>Why not take a look at the Carolina Windom from Radio Works. It might meet
> >>your requirements.
> >
> > ====================================
> >
> > Of course it will. Why do nitpicking busy-bodies stir up worries about
> > radiation from feed-lines? It's never wasted.
> > . . .

1069. Re: Beam question - roof mounted??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 04:20:55 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F0F8C96.929044E6@att.net>
Source record: 112813

GS wrote:

> How effective will a Mosley TA-33 be mounted on a small tripod on
> a second story roof? 20 - 25 feet above ground, about 6 feet
> above the roof? I'm mostly interested in 20 meters.

I don't doubt you'll be pleased with it.

Dick

1070. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 06:38:57 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307112238.758d454b@posting.google.com>
Source record: 112814

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<benm89cel1@hercules.btinternet.com>...
> "N4LQ" wrote
> > Why not take a look at the Carolina Windom from Radio Works. It might meet
> > your requirements.
> ====================================
>
> Of course it will. Why do nitpicking busy-bodies stir up worries about
> radiation from feed-lines? It's never wasted.

It might not live up to it's full potential though. "Stunted RF
syndrome" I'd rather have the rf radiated at 40 ft where the antenna
is, rather than the line which ranges from 40 ft down to ground level.
The ground losses of a radiator laying on the ground shouldn't be
ignored. :-) Also, the ground clutter factor. Yes, RF does have many
Superman qualities, such as traveling faster than a speeding bullet,
and being able to travel through most walls at will. But some walls
are metal or even "gasp" lead, and this would prevent the RF from full
exposure to the ether in that direction. But the most important reason
is it whacks out my radios, puters, and other gadgets and causes them
to malfunction in strange and mysterious ways. Also, I don't drink
much wine anymore, so I'm not "medicated" against possible mike burns.
MK

1071. Re: Beam question - roof mounted??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 06:53:18 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307112253.2bb59896@posting.google.com>
Source record: 112815

"GS" <greatsurplus@hotmail.com> wrote in message
news:<f1747a750d9f3128be76842eed5cd9d9@news.meganetnews.com>...
> How effective will a Mosley TA-33 be mounted on a small tripod on
> a second story roof? 20 - 25 feet above ground, about 6 feet
> above the roof? I'm mostly interested in 20 meters.
>
> Thanks
>
> Dave WB7AWK

Using my beam at field day, they made 700 and some odd?? 20m CW qso's with it up only 30 ft or so. It'll work and still have the ??? gain over a dipole at that same particular height. In some cases, the low beams will have as good or sometimes even better, medium distance signals than the high beams. But like one said, for real long haul dx at low angles, like 20m at night, the higher the better. You will still work dx though even at 20-25 ft. MK

1072. Re: Unequal length dipole arms

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 08:13:02 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <beofue$k8$1@titan.btinternet.com>
Source record: 112816

Mark said,

> I'd rather have the rf radiated at 40 ft where
> the antenna is , rather than the line which
> ranges from 40 ft down to ground level.

==========
Mark, Roy,

Of course you would ! So would everybody else.

But iustead of making a federal case out of it, if the question is read again it will be seen to obtain a longer antenna length and something nearer to resonance, Ron is being forced to compromise.

And if there IS a bit of RF inside the house most likely it will be due to the antenna's near field anyway. There's only one way to find out - suck it and see.

Reg.

1073. Check resonance frequency with GDO

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 08:46:32 UTC
From: Frank <not-for-mail@spammed.domain.virgilio.it>
Message-ID: <blivgvgleqbmro7ta1m1dk77oroontga8q@4ax.com>
Source record: 112817

I was wondering how I can determine
the resonance frequency of an antenna
(diple) by using a grid-dip meter (GDO)

I tried to search for it on Google with
poor results.

Thanks in advance.

1074. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 09:38:04 UTC
From: richardharrison@webtv.net
Message-ID: <20397-3F0FD6FC-156@storefull-2312.public.lawson.webtv.net>
Source record: 112719

Cecil, W5DXP wrote:
"What caused the voltage to go to zero?"

Equal and opposite voltages. Reaction to connecting wires together generates an opposite voltage which adds to zero with the incident voltage. Current doubles at the short.

1/4-wave back from the short, a virtual open circuit appears. Cecil claims this open circuit does not impede current.

1/4-wave short-circuit stubs are used as metallic insulators. They have the characteristics of resonant circuits constructed of a parallel-connected capacitor and coil, a very high impedance at resonance.

From King, Mimno, and Wing, "Transmission Lines, Antennas, and Wave Guides" page 29:

"A short-circuited line, one-quarter wavelength long at the desired output frequency may be connected across the output terminals of a transmitter or across the antenna feeder at any point without placing much load on the transmitter at this fundamental or desired output frequency, since at this frequency such a section has an impedance ideally infinite, actually about 400,000 ohms."

Since I = E/Z, how much current do you think will flow into 400,000 ohms?

King, Mimno, and Wing`s impedance might scale down to only 33,333 ohms on a 50-ohm line, still high, as they may have been considering a 600-ohm line.

All my radar texts say resonant transmission line sections have the same characteristics as resonant lumped circuits and I trust them because the radar circuits using tuned transmission lines to route the signal, work.

Best regards, Richard Harrison, KB5WZI

1075. Re: Check resonance frequency with GDO

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 09:48:04 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f0fd934$0$48909$edfadb0f@dtext02.news.tele.dk>
Source record: 112818

Hello Frank

> I was wondering how I can determine
> the resonance frequency of an antenna
> (diple) by using a grid-dip meter (GDO)
>
> I tried to search for it on Google with
> poor results.

Try http://w1.859.telia.com/~u85920178/use/gdo.htm

Regards Max

1076. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 10:20:10 UTC
From: richardharrison@webtv.net
Message-ID: <26966-3F0FE0DA-469@storefull-2315.public.lawson.webtv.net>
Source record: 112722

Cecil, W5DXP wrote:
"They", above, are reflected waves. The two waves traveling in the other direction are forward waves."

Forward waves? Being, I suppose, a voltage wave and a current wave, as it is impossible to have two voltage waves or two current waves of identical frequency traveling in the same direction on the same line. Two identical frequency waves, voltage or current, form a resultant and merge. They can`t maintain a separate existence and become inseparable in a single waveform.

Best regards, Richard Harrison, KB5WZI

1077. Looking for radio software

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 10:22:58 UTC
From: 128 <jtf66674@hotmal.com>
Message-ID: <_jRPa.7744$ju6.146627@newsfep4-glfd.server.ntli.net>
Source record: 112720

Hello,

A while back I saw a program that could have two grid references entered
together with rough antenna heights and power etc. The program give a side
view of the path and terrain. This was used in the UK and a DOS program.
It also calulated the path loss and put a line between the two sites to show
how the signal would be blocked by hills for example.
Anyone know what it is called or where to obtain it from ?

1078. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 10:53:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f0fe971_3@corp.newsgroups.com>
Source record: 112723

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "What caused the voltage to go to zero?"
>
> Equal and opposite voltages.

What caused the rearward-traveling current to go to zero at the
same time?

The problem is one of cause and effect. You cannot say the virtual
short causes the voltage and current wave conditions and then say
the voltage and current wave conditions causes the virtual short.

> 1/4-wave back from the short, a virtual open circuit appears. Cecil
> claims this open circuit does not impede current.

If the virtual short causes reflections, why doesn't the virtual open
cause reflections?

> 1/4-wave short-circuit stubs are used as metallic insulators.

That's nice, but we are not discussing physical shorts. We are
discussing virtual shorts.
--
73, Cecil http://www.qsl.net/w5dxp

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1079. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 10:55:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vgvq9ld82nl9b@corp.supernews.com>
Source record: 112721

It's actually easy to predict the (resistive) impedance seen looking into a shorted quarter wavelength line, or any odd multiple. The impedance is simply the Z0 of the line divided by the loss in nepers. One neper is about 8.7 dB, so the impedance is about 8.7 * Z0 / dB loss.

All else being equal, the impedance gets higher as frequency increases. That's because the length of a quarter wave stub decreases in inverse proportion to frequency, while loss (up to 1 - 10 GHz or so, where conductor loss dominates) increases only as the square root of frequency. So the impedance of a stub increases as the square root of frequency. For example, a quarter wave stub, made from solid polyethylene dielectric coax (VF = 0.66) at 3.5 MHz is about 46 ft. That length of RG-58 has a loss of about 0.3 dB, so the impedance looking into a quarter wave stub of RG-58 at 3.5 MHz is about 1450 ohms. Quite a far cry from the textbook's example of 400 k ohms or Richard's extrapolation to 33 k ohms! An RG-58 stub at 350 MHz, or 100 times the frequency, would have an input impedance of about 14,500 ohms.

A more typical VHF example would be a quarter wave of RG-8 at two meters. It would be about 13.4 inches long and a loss of about 0.03 dB, for an input Z of about 14,500 ohms.

Incidentally, the formula I'm using is actually on the same page of King et al's text as the 400 k ohm value Richard quotes. They say the 400 k value is for "a reasonably low-loss line" -- to get 400 k ohms with a 600 ohm line, the loss would have to be about 0.013 dB.

The input impedance of an open circuited quarter wavelength line or shorted half wavelength line is Z0 times the loss in nepers, or about Z0 * dB loss / 8.7.

I actually ran into a case where the finite resistance of an open stub became a problem, and it illustrates the hazard of blindly following a "rule of thumb" without checking to see under what conditions it's valid. The "Field Day Special" antenna, similar to a ZL special, can be fed at the center of either element. I connected a one wavelength transmission line to the center of each element, and fed one or the other to switch directions, leaving the other line open circuited. When RG-58 was used, the current diverted into the finite resistance of the open stub disturbed the element current enough to very significantly degrade the front/back ratio. The lines were one wavelength at 14 MHz, or about 46 feet. Loss was a seemingly trivial 0.8 dB, but that means that the input impedance was only about 540 ohms! 400,000 or even 33,000 would be an awfully poor estimate! Changing to 300 ohm twinlead solved the problem. (Although 300 ohm twinlead can easily be as lossy as RG-58 when wet, the higher Z0 resulted in an adequately high stub impedance

even when it was wet.)

Roy Lewallen, W7EL

Richard Harrison wrote:

> . . .
> From King, Mimno, and Wing, "Transmission Lines, Antennas, and Wave
> Guides" page 29:
>
> "A short-circuited line, one-quarter wavelength long at the desired
> output frequency may be connected across the output terminals of a
> transmitter or across the antenna feeder at any point without placing
> much load on the transmitter at this fundamental or desired output
> frequency, since at this frequency such a section has an impedance
> ideally infinite, actually about 400,000 ohms."
>
> Since I = E/Z, how much current do you think will flow into 400,000
> ohms?
>
> King, Mimno, and Wing`s impedance might scale down to only 33,333 ohms
> on a 50-ohm line, still high, as they may have been considering a
> 600-ohm line.
> . . .

1080. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 12:01:11 UTC
From: Paul Vanasse <pvanasse@cox.net>
Message-ID: <bMSPa.14821$o86.13143@news1.central.cox.net>
Source record: 112724
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Dick Carroll" <dickc58@att.net> wrote in message
news:3F0ED9F2.59877C93@att.net...
> But the ARRL sure won't be able to stymie that fact, either, with or
without
> our
> piddling amateur contributions. Only knowledgable, responsiple people in
the
> right places -with the intestinal fortitude to hang tough and fight the
$$$$
> flow-
> will be able to head off this impending HF disaster. I have no idea if
such
> individuals in such places even exist today.

Hello Dick:

I rec'd the following yesterday as you probably did as well;

SB QST @ ARL $ARLB043
ARLB043 ARRL files comments, studies in Broadband Over Power Line
proceeding

ZCZC AG43
QST de W1AW
ARRL Bulletin 43 ARLB043
From ARRL Headquarters
Newington CT July 10, 2003
To all radio amateurs

SB QST ARL ARLB043
ARLB043 ARRL files comments, studies in Broadband Over Power Line
proceeding

Pointing to a potential for interference to and from Amateur Radio,
the ARRL has called on the FCC to "take no steps" to permit
Broadband over Power Line (BPL). The League's 120-page filing, which
includes several lab studies, was in response to the FCC's BPL
Notice of Inquiry in ET Docket 03-104, published May 23.

Comment: OK, this is fine, however where are these studies posted and who
performed them? Is this similar to the only study the ARRL possesses on
CC&R's that was done in 1988 in Boulder CO (which is the 4th most liberal
place in the US). The League is pouring thousands of dollars into that
particular lobbying effort (CC&R's) and resting their laurels on an inept 15

year old study. When I started investigating the CC&R issue, I found out that the only evidence the ARRL had to persuade Congress (other than throwing $$$ at them) was this pathetic study.

ARRL said the Amateur Service should not be "gored with the double-edged sword of an incompatible service" that will at once cause widespread interference and preclude any future changes in the amateur HF allocations.

Comment: OK, this is still on point but wht does the league need my money?

Citing "diligent and exhaustive research," ARRL concluded that BPL must avoid any and all amateur MF, HF and VHF allocations without exception.

Comment: What "diligent and exhaustive research," ? When someone asks you for $$$, dont they usually give you some stated facts relating to the reasons for the request? This is like reaching into a box of unmarked resistors and assuming that the one you pick is the correct value.

"This interference potential, as a matter of both law and fact, disqualifies access BPL as a potential future competitive broadband delivery system," the ARRL said in its comments.

Comment: CASE CLOSED. Its already a matter of law. No money needed.

League studies show received signal levels of BPL broadband noise at typical amateur stations would be anywhere from 33.7 dB to 65.4 dB higher than typical ambient noise levels in worst-case situations.
NNNN
/EX

Comment: Typical amateur station? 33.7 dB to 65.4 dB from what noise floor? WHERES THE BEEF?

73 de Paul

1081. Re: Beam question - roof mounted??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 12:49:46 UTC
From: K7SAM <2smoore@nemontel.net>
Message-ID: <pfecnSsoh_9Bno2iXTWJjw@vnet-inc.com>
Source record: 112725

It is always better to have a beam up than to be thinking of how to put it up. If that is the best setup at the present time go for it. Every day that it is not on the roof is missed contacts. There will always be "nay-sayers" to any setup, make the best of what you have and enjoy.

--
K7SAM
Sam Moore
Transmitting from Navajo, Montana
Center of the known Universe

1082. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 13:00:45 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F10066C.47EA52DF@att.net>
Source record: 112726
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Paul Vanasse wrote:

>
> ARRL said the Amateur Service should not be "gored with the
> double-edged sword of an incompatible service" that will at once
> cause widespread interference and preclude any future changes in the
> amateur HF allocations.
>
> Comment: OK, this is still on point but wh(y) does the league need my money?

IMO they're just following the standard organizational philosophy, that being

"Get the money while you can, while you have a good reason to request it".

Seems all organizations now operate under this plan and thus they always have
funding
available (provided they can keep from squandering it on unnecessaries) during
times when they don't have a hot-button "issue" to scare contributers with..

1083. Re: Cecil's Math a Blunder

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 15:09:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f102578_7@corp.newsgroups.com>
Source record: 112727

Richard Harrison wrote:
> Cecil, W5DXP wrote:
> "They", above, are reflected waves. The two waves traveling in the other
> direction are forward waves."
>
> Forward waves? Being, I suppose, a voltage wave and a current wave, as
> it is impossible to have two voltage waves or two current waves of
> identical frequency traveling in the same direction on the same line.
> Two identical frequency waves, voltage or current, form a resultant and
> merge. They can`t maintain a separate existence and become inseparable
> in a single waveform.

Of course they superpose. In the s-parameter equation, b1=s11*a1+s12*a2,
those two reflected waves superpose to b1. In the s-parameter equation,
b2=s21*a1+s22*a2, those two forward waves superpose to b2. They superpose
at the point where they both appear together for the first time.

But the point is that s11*a1 and s12*a2 are flowing in the direction
of the source when they cancel (interfere destructively). s21*a1 and
s22*a2 are flowing in the direction of the load when they interfere
constructively.
--
73, Cecil http://www.qsl.net/w5dxp

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1084. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 15:13:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f102698_7@corp.newsgroups.com>
Source record: 112728

Roy Lewallen wrote:
> All else being equal, the impedance gets higher as frequency increases.

Double the frequency and you have a shorted 1/2WL stub. Isn't the
impedance of a shorted 1/2WL stub lower than the impedance of a
shorted 1/4WL stub?
--
73, Cecil http://www.qsl.net/w5dxp

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1085. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 15:23:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1028c2_7@corp.newsgroups.com>
Source record: 112729

Jim Kelley wrote:
> I've never disputed the solutions produce the same number. I disputed
> the validity of the approach you took to arrive at the equation.

I guess I owe the group an apology. The guys over on sci.physics.electromag
are inferring things that I never meant to imply. I thought the meaning
of my words was clear but I guess that's not the case. I apologize to
anyone I accused of deliberately misinterpreting what I said.
--
73, Cecil http://www.qsl.net/w5dxp

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1086. Re: Looking for radio software

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 15:39:20 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bepa38$7gv$1@hercules.btinternet.com>
Source record: 112730

> A while back I saw a program that could have two grid references entered
> together with rough antenna heights and power etc. The program give a
side
> view of the path and terrain. This was used in the UK and a DOS program.
> It also calulated the path loss and put a line between the two sites to
show
> how the signal would be blocked by hills for example.
> Anyone know what it is called or where to obtain it from ?

==========
I am not aware of any single program which will satisfy your stringent "specification".

From the following website you can obtain several programs something along the lines you are looking for. But there are no grid references. Ground conditions, if entered in a program, are described in terms of types of terrain, or soil resistivity and permittivity.

They are all self-contained DOS programs. Each program can be downloaded in a few seconds and can be run imediately. Computed results are available on an easy-to-use 'What-if?' basis.

GRNDWAV3. Groundwave propagation, field strength, Tx to Rx input from ELF to HF, includes diffraction over the radio horizon, path length up to several thousand kilometres.

DIFFRAC1, DIFRAC2. Propagation predictions, from Tx to Rx, over obstructions such as buildings or mountain edges, and over two successive obstructions.

LINOSITE. Elementary ball-park prediction of line-of-sight propagation for given antenna characteristics.

There may be other programs of interest, such as design and behaviour of transmission lines to better than ordinarily required engineering standards and may be used to check more simple programs. See brief descriptions of program applications on website download page.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========.

1087. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 16:03:31 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <3F103153.D384C697@bloomer.net>
Source record: 112731

Which ham band is that in?

:O

Scott
N0EDV

hees34@zonnet.nl wrote:
>
> Maybe somebody can shed some light on the following matter:
>
> Recently I have installed an 18 GHz Microwave link, consisting of NEC-
> Pasolink gear and Andrews Microwave Dishes.
> Because it was a first for me, I had thought over the process of lining
> up the dishes. I had heard of and read about the side-lobe vs the main-
> lobe.
> So I figured out the my coworker on the other end of the link should move
> his dish and I would tell him the reading on my voltmeter. The higher the
> better and at the peak reading he would fix the dish. Then I would do the
> same on my end. And then his end a second time and then my end a second
> time
> We would repeat this procedure for the vertical line-up as well.
> I had calculated an expected attenuation which could be converted in a
> voltage reading.
>
> Assume the reading should say 3,5 V. Well I never got anything better
> than 2.8 / 2.9 volt.
>
> COnsequently I asked NEC for advice and they said that 'you should line
> up you own end using the voltmeter, and not the opposite end'. With this
> advice we repeated everything and reached the expected reading of 3.5
> volt. The 2.8 volt was a sidelobe of the antenna-beam
>
> What I don't understand is that when I rotate my dish (either
> horizontally or vertically) I can go from sidelobe to mainlobe to
> sidelobe. I don't move the dish further left or right, I only rotate it
> around a vertical or horizontal axis. When I would move the dish further
> left or right or up or down, than I can visualize going from lobe to
> lobe. Not by rotating the dish
> That is why I used the opposite end to move the beam.
>
> Anybody can explain where I go wrong
>
> Regards, Ad

--

Scott
http://corbenflyer.tripod.com
http://groups.yahoo.com/group/ParasolAirplanes
Building RV-4
Gotta Fly or Gonna Die!

1088. Re: Check resonance frequency with GDO

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 16:18:30 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F10344D.5010306@comcast.net>
Source record: 112732

Here is the relevant text from that web site.

""PRUNING" ANTENNAS
The unit is shirt-pocket sized so you can use it up the mast. To check a vertical 1/4 wave (for example) disconnect the feeder, and short the antenna with a bit of wire about 5-10cm long. Twist the wire to form a single turn loop and check this loop with the GDO as above. If the ANT is too short the DIP will be higher than the frequency you want."

W1MCE

Max wrote:
> Hello Frank
>
>
>>I was wondering how I can determine
>>the resonance frequency of an antenna
>>(diple) by using a grid-dip meter (GDO)
>>
>>I tried to search for it on Google with
>>poor results.
>
>
> Try http://w1.859.telia.com/~u85920178/use/gdo.htm
>
> Regards Max
>
>

1089. What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 16:19:15 UTC
From: Dave Mundell <hnldc10@worldnet.att.net>
Message-ID: <7yWPa.51631$3o3.3448699@bgtnsc05-news.ops.worldnet.att.net>
Source record: 112733

This is probably not the newgroup I need to be on, but perhaps someone could point me to one better suited for my question.

I want to buy a portable AM radio that will receive a distant station that is close (in frequency) to a nearby station. The radio in my car does this just fine, but not any of the portable radios I've tried. I. The guy at Radio Shack told me I needed a radio with a digital tuner, so I bought one. Didn't work so I took it back. The display was digital; I don't know if anything else was. I had similar results at Circuit City and Best Buy. The clerks at these places appear to be clueless.

Appreciate any help.

Dave

1090. Re: Looking for radio software

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 16:47:54 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <+p$lF0B6uDE$EAgk@ifwtech.co.uk>
Source record: 112736

128 wrote:
>Hello,
>
>A while back I saw a program that could have two grid references entered
>together with rough antenna heights and power etc. The program give a side
>view of the path and terrain. This was used in the UK and a DOS program.
>It also calulated the path loss and put a line between the two sites to show
>how the signal would be blocked by hills for example.
>Anyone know what it is called or where to obtain it from ?

It was written by G4JNT, and it contained a real UK terrain database. It
hasn't been supported for ages, but one of the UK microwavers may still
have a copy.

There are much more accurate VHF/UHF propagation programs around now,
with more detailed UK terrain databases and also better-verified
propagation models, but AFAIK they are all proprietary.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1091. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 16:49:31 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <v_WPa.43202$sY2.18887@rwcrnsc51.ops.asp.att.net>
Source record: 112734

They use FM CB outside the US.

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:cnttgvg21pbtgenfreh18oek69i1l0i0vj@4ax.com...
>>
> FM? Has CB changed that much or are you using non type-accepted gear?
>
> The mag-mount could be a problem. One way to test it is to add an
> extender cable (using barrel connectors and another 5 or 10 feet of
> coax) and see if that changes anything. If so, you have a common mode
> issue. You can ignore it as a problem if you simply select the right
> length of extension that pulls the SWR down (and never change anything
> else).
>
> 73's
> Richard Clark, KB7QHC

1092. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 16:58:29 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <leicnZBREJaqo42iRTvUqA@crocker.com>
Source record: 112735

"Dave Mundell" <hnldc10@worldnet.att.net> wrote in message
news:7yWPa.51631$3o3.3448699@bgtnsc05-news.ops.worldnet.att.net...
> This is probably not the newgroup I need to be on, but perhaps someone
could
> point me to one better suited for my question.
>
> I want to buy a portable AM radio that will receive a distant station that
> is close (in frequency) to a nearby station. The radio in my car does this
> just fine, but not any of the portable radios I've tried. I. The guy at
> Radio Shack told me I needed a radio with a digital tuner, so I bought
one.
> Didn't work so I took it back. The display was digital; I don't know if
> anything else was. I had similar results at Circuit City and Best Buy. The
> clerks at these places appear to be clueless.
>
> Appreciate any help.
>
> Dave

there are two major specifications for a receiver that you should look at.
first is 'sensitivity' this is a measure of how weak of a signal the
receiver can detect. this is usually stated by specifying the signal level
in micro-volts at the antenna terminals needed to produce a signal with a
given signal to noise ratio. as an example, the ft-1000mp in the .5-1.8MHz
range in AM mode needs 16 micro-volts to generate a 10db signal to noise
(s/n) ratio according to its specs.

the other other big one is 'selectivity'. this is a measure of how far away
from the desired frequency the receiver can reject interference from another
station. This is normally specified in kHz away from the center frequency
to reduce the interfering signal by a given number of db. again, for the
ft-1000mp in AM mode it is 4khz for -6db, and 14khz for -60db... so a signal
14 khz from the indicated receiver frequency is reduced by 60 db.

there are some others that are used to classify higher end receivers. one
of those is 'Dynamic Range', this is a measure of the smallest to largest
signal the receiver can handle without adverse effects. usually stated in
db, the ft-1000mp is rated at 108db.

as you found out, a digital display doesn't mean a good receiver. in fact
many 'digital' displays are just cheap frequency counters that hide a plain
old analog receiver behind it. truely digitally tuned radios will normally
have a set of memories that can store frequency and mode information for
instant recall... but they are not always better receivers.

another important thing is the antenna that either comes with the receiver or you connect to it. a cheap built in ferrite rod antenna will supply much less signal to the receiver than an external dipole or vertical. you can also get external preselectors and preamplifiers that can help your reception of weak signals.

1093. Snap-on choke hurts shielded loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 17:14:37 UTC
From: Loopfan <bgreer1@earthlink.net>
Message-ID: <1mXPa.43439$C83.3440878@newsread1.prod.itd.earthlink.net>
Source record: 112737

I performed an interesting shielded loop experiment today with a snap-on ferrite rfi-choke:

1) When the choke is placed anywhere on the coax feedline the choke has no affect whatsoever.

2) When the choke is snapped anywhere around the loop-element coax, it really attenuates the loop signal, and also detunes it. I had to readjust my tuner's capacitor quite a bit. It also seemed to flatten out the nice sharp Q. It did not affect the directivity however. Placement of the choke anywhere on the loop element seemed to produce the same amount of attenuation - from right over the gap to anywhere else on the loop.

Unless I misunderstand how ferrite-chokes work, this does seem to physically point out that the shield is the actual antenna. (This is what I've been told all along here.) Nobody in their right mind would place an RFI choke on their transmission line in an effort to reduce common-mode radiation if it also severely attenuated the wanted signal right?

Am I on the right track? The correct theory is nice to know, but it is also great to see it proven physically....

73
Brian

1094. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 17:45:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f104a3a$1_8@corp.newsgroups.com>
Source record: 112738

Dave Mundell wrote:
> I want to buy a portable AM radio that will receive a distant station that
> is close (in frequency) to a nearby station. The radio in my car does this
> just fine, but not any of the portable radios I've tried. I. The guy at
> Radio Shack told me I needed a radio with a digital tuner, so I bought one.
> Didn't work so I took it back. The display was digital; I don't know if
> anything else was. I had similar results at Circuit City and Best Buy. The
> clerks at these places appear to be clueless.

I use my communications receiver for that purpose. I listen to far away
talk radio shows and often switch from AM to SSB filtering to decrease
the interference problems. Switching between USB and LSB sometimes helps.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1095. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 17:51:18 UTC
From: richardharrison@webtv.net
Message-ID: <20397-3F104A96-172@storefull-2312.public.lawson.webtv.net>
Source record: 112739

Cecil, W5DXP wrote:
"What caused the rearward traveling current to go to zero?"

The rearward-traveling current did not change phase on reflection from a load of too-few ohms. Only the volts reversed phase on reflection. The amps never changed nor do they need to change phase for re-reflection.

The re-reflected volts and the re-reflected amps need to be in the same phase as are the new volts and amps to merge seamlessly with the new energy in the return assault on the load.

The volts do need a phase reversal for reversal of wave travel when the current is not reversed.

Best regards, Richard Harrison, KB5WZI

1096. 13B2 for 70CM?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 20:06:46 UTC
From: aokd5fxt@aol.com
Message-ID: <20030712160646.29311.00000224@mb-m15.aol.com>
Source record: 112740

What abt using my 13B2 for us on 440? I don't have an analyzer for that band nor a swr meter. What are the thoughts on this? I have a friend in Houston who does it and verifies it to be ok. Responses and thoughts appreciated.

1097. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 20:19:16 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vh0ragjiv0ur0b@corp.supernews.com>
Source record: 112741

You can find good deals ($1.00 to $20.00) on good used car radios at garage sales. People buy radios with CD players and dump the cassette or no cassette versions. Get one, perhaps like the one in your car which you know works and buy a 12 volt supply, speaker, and a long piece of wire for an antenna and your in good shape. I've done this several times and what I like is that I have pushbuttons for my favorite AM and FM stations. Great sound too if you get good speakers, you can find those at sales also.
73
hank wd5jfr
"Dave Mundell" <hnldc10@worldnet.att.net> wrote in message
news:7yWPa.51631$3o3.3448699@bgtnsc05-news.ops.worldnet.att.net...
> This is probably not the newgroup I need to be on, but perhaps someone could
> point me to one better suited for my question.
>
> I want to buy a portable AM radio that will receive a distant station that
> is close (in frequency) to a nearby station. The radio in my car does this
> just fine, but not any of the portable radios I've tried. I. The guy at
> Radio Shack told me I needed a radio with a digital tuner, so I bought one.
> Didn't work so I took it back. The display was digital; I don't know if
> anything else was. I had similar results at Circuit City and Best Buy. The
> clerks at these places appear to be clueless.
>
> Appreciate any help.
>
> Dave
>
>

1098. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 20:27:20 UTC
From: Paul Vanasse <pvanasse@cox.net>
Message-ID: <Ia_Pa.17239$o86.773@news1.central.cox.net>
Source record: 112742
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

"Dick Carroll" <dickc58@att.net> wrote in message
news:3F10066C.47EA52DF@att.net...

> IMO they're just following the standard organizational philosophy, that
being
>
> "Get the money while you can, while you have a good reason to request it".
>
> Seems all organizations now operate under this plan and thus they always
have
> funding
> available (provided they can keep from squandering it on unnecessaries)
during
> times when they don't have a hot-button "issue" to scare contributers
with..
>

Ditto on this one Richard.

Years ago I actually used to believe it when my priest told us that if we
gave big $$$ to any of the churches causes, it would guarantee me a seat in
heaven.....

1099. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 20:28:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f10704c$1_8@corp.newsgroups.com>
Source record: 112743

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "What caused the rearward traveling current to go to zero?"
>
> The rearward-traveling current did not change phase on reflection from a
> load of too-few ohms.

True, there is a re-reflection event exactly as you describe. But the
reflection coefficient for that re-reflection event is not 1.0 so not
all of the reflected power gets re-reflected. What happens to the rest
of it? How do you explain the discrepancy between the physical reflection
coefficient less than 1.0 and the apparent 100% re-reflection of reflected
energy at a Z0-match point?
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Guess who said that.

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1100. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 20:31:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f107109$1_8@corp.newsgroups.com>
Source record: 112744
Cross-posted to:
rec.radio.amateur.dx,rec.radio.swap,rec.radio.amateur.equipment,rec.radio.amateur.antenna,rec.radio.amateur.policy

Paul Vanasse wrote:
> Years ago I actually used to believe it when my priest told us that if we
> gave big $$$ to any of the churches causes, it would guarantee me a seat in
> heaven.....

If heaven is so perfect, why don't people want to go sooner? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1101. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 20:45:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh0srfsefefu28@corp.supernews.com>
Source record: 112745

I'm not sure if that's meant to be humorous, or if you really did misinterpret what I meant. In case it's the latter, I'll amplify.

If a quarter wavelength shorted stub at frequency f1 has impedance R1, then a quarter wavelength shorted stub at frequency f2 will have an impedance of R1 * sqrt(f2 / f1), if it's made of the same type of transmission line, and the frequency is in the range where conductor loss dominates (below about 1 - 10 GHz for typical coax).

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> All else being equal, the impedance gets higher as frequency increases.
>
>
> Double the frequency and you have a shorted 1/2WL stub. Isn't the
> impedance of a shorted 1/2WL stub lower than the impedance of a
> shorted 1/4WL stub?

1102. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 21:03:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f10788b$1_8@corp.newsgroups.com>
Source record: 112746

Roy Lewallen wrote:
> I'm not sure if that's meant to be humorous, or if you really did
> misinterpret what I meant. In case it's the latter, I'll amplify.

Whoops, I really did misinterpret what you meant. When you said, "All
else being equal," I inferred that you were including the physical
length of the stub. Changing the length of the stub didn't seem to
match the condition, "All else being equal,". Sorry.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1103. Re: Snap-on choke hurts shielded loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 21:12:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh0ue4ceabc831@corp.supernews.com>
Source record: 112747

Yes, you're on the right track.

The reason the ferrite choke on the antenna flattened out the nice Q is that the impedance of many ferrites is fairly resistive (lossy) at HF. This is fine, and even desirable, for making broadband transformers and baluns (unless high power is involved). So when you slip that ferrite core over the antenna, it's just like you've added a series or parallel RL circuit in series with the antenna at that point. If you're curious about how much R and X you're getting, you can easily measure it if you have an antenna analyzer. If you use a relatively high frequency ferrite like one of the Fair-Rite 60 series, it'll look more like a low loss inductor, so it would detune the antenna but not broaden it much.

There are three distinct currents flowing in and on a coax cable. Currents on the outside of the inner conductor and the inside of the shield are always equal and opposite, providing the shield is effective. (Typical coax shields begins failing at low -- audio-ish --, not high, frequencies.) A third current can flow on the outside of the shield. The ability to radiate or receive a signal depends on the vector sum of these currents. The vector sum of the two inner currents is always zero, making the vector sum of the three simply equal to the current on the outside. A coax cable with no current on the outside will neither radiate nor receive a signal (except, of course, from the relatively small leakage due to shield imperfections). A ferrite core on the outside of a coax transmission line presents an impedance to the current on the outside of the cable, thereby reducing it. The currents on the inside remain equal and opposite, and aren't affected by the core.

In the case of a shielded loop, the current on the outside of the antenna coax shield is necessarily and intentionally equal to the current on the inside of the shield -- if you forced the outside current to zero (by closing the gap, for example), the antenna wouldn't radiate or receive. Putting the ferrite core on the antenna coax reduces that current, hence reducing the antenna's ability to receive or radiate.

Roy Lewallen, W7EL

Loopfan wrote:
> I performed an interesting shielded loop experiment today with a snap-on
> ferrite rfi-choke:
>
> 1) When the choke is placed anywhere on the coax feedline the choke has
> no affect whatsoever.
>
> 2) When the choke is snapped anywhere around the loop-element coax, it
> really attenuates the loop signal, and also detunes it. I had to

> readjust my tuner's capacitor quite a bit. It also seemed to flatten
> out the nice sharp Q. It did not affect the directivity however.
> Placement of the choke anywhere on the loop element seemed to produce
> the same amount of attenuation - from right over the gap to anywhere
> else on the loop.
>
> Unless I misunderstand how ferrite-chokes work, this does seem to
> physically point out that the shield is the actual antenna. (This is
> what I've been told all along here.) Nobody in their right mind would
> place an RFI choke on their transmission line in an effort to reduce
> common-mode radiation if it also severely attenuated the wanted signal
> right?
>
> Am I on the right track? The correct theory is nice to know, but it is
> also great to see it proven physically....
>
> 73
> Brian
>

1104. Re: Grounding an auto antenna tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 21:13:44 UTC
From: dplatt@radagast.org
Message-ID: <vh0ug8t69i8c5b@corp.supernews.com>
Source record: 112748

>Can I come back to a point you made earlier? You wrote.......

>- Add a choke balun where the coax reaches the tuner (just take 8-10'
> of the coax, and wind it into a loop 8-10" in diameter and use
> tiewraps to hold it together). This will help maintain balance
> between the two sides of the dipole.
>
>There is not enough supplied Coax available to make the choke balun and
>still reach my transciever. There are no markings on the cable supplied by
>Icom but it looks like they use RG8U. I haven't purchased cable in many
>years and seem to remember that insulation and shielding varies by
>manufacturer. I'll look for maximum shielding but wonder whether foam
>insulation is OK for the choke balun?

Sure, it should be fine. As with any coax, you should check the power
rating (lest you arc the cable or overheat it in use, but you
shouldn't have this problem with RG8 at reasonable power levels).
And, for the lengths we're talking about here, and at HF frequencies,
I suspect that RG8 may be overkill - you could use RG8X "mini" coax
and the losses would be quite tolerable.

>Somewhere in the back of my mind I remember seeing something about the cons
>of foam insulated coax. Am I getting paranoid?

Well, I believe that foam-insulated coax may be a bit more prone to
wick up water if you don't seal the connectors properly and the rain
starts to fall ;-)

For indoor applications this shouldn't matter. Just buy a 10-15'
piece of RG8 with PL-259 connectors on it, use a barrel adapter to
connect this to your existing run of coax, roll up the choke balun,
and you should be fine.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1105. ATN Log periodic

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 21:16:49 UTC
From: TS <tstone12002@yahoo.com.au>
Message-ID: <5V_Pa.2175$wU5.221@news-server.bigpond.net.au>
Source record: 112749
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc

Hi all

Was wondering if there is anyone out there who can help? I have just purchased a 7 element ATN 18-30-7 log periodic that covers 18-30Mhz. I believe there is another ATN aerial with the same boom length of 6 metres that covers 14-30Mhz. I was hoping someone with one of these beasts could advise the element lengths etc so i can convert mine to cover 20metres. I assume i will need to rearrange the elements, drill alternate mounting holes and change some element lengths and make some crossover straps for phasing harnesses but thats just a formality. My aerial comes with a diagram of the element lengths etc so was hoping someone could scan and send. I could start from scratch and try and design a unit but this would save me a heap of time. It appears that ATN is long gone. Any help would be greatly appreciated. I have quite a collection of amateur radio related service manuals in pdf and or jpg format so maybe i can return the favour.

email for reference is tstone12002@yahoo.com.au

Thanks in advance.
Cheers
Tony
VK2TS

1106. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 21:27:41 UTC
From: tdonaly@aol.com
Message-ID: <20030712172741.03053.00000261@mb-m27.aol.com>
Source record: 112750

Cecil wrote,
>
>Paul Vanasse wrote:
>> Years ago I actually used to believe it when my priest told us that if we
>> gave big $$$ to any of the churches causes, it would guarantee me a seat in
>> heaven.....
>
>If heaven is so perfect, why don't people want to go sooner? :-)
>--
>73, Cecil http://www.qsl.net/w5dxp
>

Unfortunately, some of them do, Cecil.
73,
Tom Donaly, KA6RUH

1107. Re: ATN Log periodic

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 21:28:55 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f107d75$0$48911$edfadb0f@dtext02.news.tele.dk>
Source record: 112751
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc

Hello Tony

> from scratch and try and design a unit but this would save me a heap of
> time. It appears that ATN is long gone. Any help would be greatly
> appreciated. I have quite a collection of amateur radio related service
> manuals in pdf and or jpg format so maybe i can return the favour.

You might get some help trying this

http://www.fortunecity.com/skyscraper/jolt/345/LogCalc.html

Regards Max

1108. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 22:26:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1n21hv86aa1alshrma39p92c2q7462qmkd@4ax.com>
Source record: 112752

On Sat, 12 Jul 2003 16:49:31 GMT, "CW" <clinton.magers@comcast.net>
wrote:
>They use FM CB outside the US.
So I've been told.

1109. new software PSK/KENWOOD/SSTV/more.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 22:36:47 UTC
From: c <no@spam.com>
Message-ID: <3f109066$0$45386$1b62eedf@news.wanadoo.nl>
Source record: 112753
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Hello All,

I have new software on my website!
There is also screenshots to see before download.
NEW: TS-2000 service manual.

Just look at: http://www.qsl.net/pd0rkc

73's PD0RKC

PSK

WinPSK v2.13 s
n MIXWIN 2.07 s
LOGGER 7.09 s
LOGGER-UPDATE 8.07 s

SSTV

n CHROMAPIX V1.5.10 s
MMSSTV 1.08 s
n MSCAN V3.20 s
n MIXWIN 2.07 s
EZSSTV v3.0 m
DL4SAW GSHPC V2.3 s
JVFAX v.7.1 m
n W95SSTV 1.10 s
n RADIOCOM 4.0

RTTY

HAMCOM v3.1 m
n MIXWIN 2.07 s
MMTTY 1.65 s

MORSE DECODER

n CWGET v1.36 s
MORSE TRAINER
n NUMORSE 1.09

PACKET

AGWE 2002.308 s
TPK v1.83 m
n WINPACK 6.80 s
TSTHOST V2.21B m

APRS

n UIVIEW2.39 s
RTTY/CW/PACKET
HAMSOPE 1.51 s

BUZZER DECODER

POCSAC v2.5 s

ANTENNA

DL6WU

SATELLITE

n NOVA 2.1q
SATSCAPE 2.00

INTERNET QSO

ECHOLINK 1.5.832

DB CALCULATIONS

minidBcalculator 1.3.2

EME/SCATTER

wsjt300

DTMF TONES

dtmfdail s

KENWOOD

TS-2000 service manual
TH-F7/TH-F6 MCP 0.00

LOGBOOK

vqlog 2.3b

LOCATOR

DHT 1.1

AIRCRAFT BEACONS

WACARS 0.7 s

Do you know some nice software witch is not in
this list?
Please let me know!!!!

1110. new: kenwood reset, and connector info!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 22:46:37 UTC
From: c <no@spam.com>
Message-ID: <3f10906f$0$45386$1b62eedf@news.wanadoo.nl>
Source record: 112754
Cross-posted to: alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Hello All,

I have many kenwood information.

Reset codes voor almost any kenwood transceiver.
Also many connector information.

You can find this information on:
http://www.qsl.net/pd0rkc

73's Cor

1111. 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 23:03:59 UTC
From: Jason Dugas <kb5urq@hotmail.com>
Message-ID: <vh14vkqraphk05@corp.supernews.com>
Source record: 112755

Hello all,

I have a 6m transverter on the way this week to use just in time for the CQWW contest this weekend... one problem NO ANTENNA!!

So I picked up a very old Yagi, built in 1969, but still in great condition. Its currently cut for the 40 MHz band, so I should be able to trim the elements down and change the spacing for a 3-element 6m antenna, right?

At any rate, the information I have been able to find so far (from various Yagi calculators found online such as that found at http://www.csgnetwork.com/antennae3ycalc.html) give the following figures:

Calculated Driven Side Element Length 4'6 19/32"
Calculated Total Driven Length 9'1 6/32"
Calculated Reflector Length 9'7 5/8"
Calculated Element Spacing 3'7 7/32"
Calculated Director Length 8'6 23/32"

Here are my questions:
1. Can I do this? Cut the elements, change the spacing.
2. What does "driven side element" length refer to? Is this the "matching dipole" (gamma match) part of the driven element?

Are there any unexpected snags/pitfalls I should look out for?

Thanks,

Jason

1112. Re: new: kenwood reset, and connector info!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-12 23:49:49 UTC
From: Peter Völpel <qro1750@compuserve.de>
Message-ID: <3F109E9D.12BADDA8@compuserve.de>
Source record: 112756
Cross-posted to: alt.ham-radio.mods,alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna

```
c schrieb:
>
> Hello All,
>
> I have many kenwood information.
>
> Reset codes voor almost any kenwood transceiver.
> Also many connector information.
>
> You can find this information on:
> http://www.qsl.net/pd0rkc
>
> 73's Cor
```

1113. Re: ATN Log periodic

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 00:08:08 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3F10A263.80504@comcast.net>
Source record: 112757
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc

Well I use a Tennadyne T8 for 13.5 to 30 MHz. It is a 6 meter [18 feet] boom. I am not familiar with the ATN 18-30-7 LP.

But, LP design is based upon a specific ratio for adjacent lengths and element spacing. So, just 'fiddling' with adding elements and adjusting spacing gets to be serious business. You will have to re-space ALL elements on the boom, and increase the length of ALL the elements to achieve the desired ratios.

The ARRL Antenna Handbook has an excellent section on LPs. Buy or borrow a copy and read up on LPs. It's quite a project!

Deacon Dave, W1MCE
+ + +
TS wrote:
> Hi all
>
> Was wondering if there is anyone out there who can help? I have just
> purchased a 7 element ATN 18-30-7 log periodic that covers 18-30Mhz. I
> believe there is another ATN aerial with the same boom length of 6 metres
> that covers 14-30Mhz. I was hoping someone with one of these beasts could
> advise the element lengths etc so i can convert mine to cover 20metres. I
> assume i will need to rearrange the elements, drill alternate mounting holes
> and change some element lengths and make some crossover straps for phasing
> harnesses but thats just a formality. My aerial comes with a diagram of the
> element lengths etc so was hoping someone could scan and send. I could start
> from scratch and try and design a unit but this would save me a heap of
> time. It appears that ATN is long gone. Any help would be greatly
> appreciated. I have quite a collection of amateur radio related service
> manuals in pdf and or jpg format so maybe i can return the favour.
>
> email for reference is tstone12002@yahoo.com.au
>
> Thanks in advance.
> Cheers
> Tony
> VK2TS
>
>
>

1114. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 00:20:33 UTC
From: donut <none@none.com>
Message-ID: <Xns93B6B00154091donut@216.102.43.227>
Source record: 112760

"Dave Mundell" <hnldc10@worldnet.att.net> wrote in
news:7yWPa.51631$3o3.3448699@bgtnsc05-news.ops.worldnet.att.net:

> This is probably not the newgroup I need to be on, but perhaps someone
> could point me to one better suited for my question.
>
> I want to buy a portable AM radio that will receive a distant station
> that is close (in frequency) to a nearby station. The radio in my car
> does this just fine, but not any of the portable radios I've tried. I.
> The guy at Radio Shack told me I needed a radio with a digital tuner,
> so I bought one. Didn't work so I took it back. The display was
> digital; I don't know if anything else was. I had similar results at
> Circuit City and Best Buy. The clerks at these places appear to be
> clueless.
>
> Appreciate any help.
>
> Dave
>
>

Simple answer - try to find a GE Superradio.

1115. Re: Snap-on choke hurts shielded loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 00:22:51 UTC
From: donut <none@none.com>
Message-ID: <Xns93B6B0655AD0Edonut@216.102.43.227>
Source record: 112759

Loopfan <bgreer1@earthlink.net> wrote in
news:1mXPa.43439$C83.3440878@newsread1.prod.itd.earthlink.net:

> Unless I misunderstand how ferrite-chokes work, this does seem to
> physically point out that the shield is the actual antenna.

How can the shield be the antenna when it's connected to RF ground?

1116. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 00:25:17 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <NF1Qa.44293$GL4.12054@rwcrnsc53>
Source record: 112758

"Jason Dugas" <kb5urq@hotmail.com> wrote in message
news:vh14vkqraphk05@corp.supernews.com...
> Hello all,
>
> I have a 6m transverter on the way this week to use just in time for the
> CQWW contest this weekend... one problem NO ANTENNA!!
>
> So I picked up a very old Yagi, built in 1969, but still in great
condition.
> Its currently cut for the 40 MHz band, so I should be able to trim the
> elements down and change the spacing for a 3-element 6m antenna, right?
>
Jason -

Do you know who made the original Yagi? Is it aluminum tuning or solid rod?

The fastest method is to shorten the reflector, director and driven
elements, BUT
maintain the element spacing. Later - you can look at changing the element
spacing - if desired.

w9gb
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

1117. Re: Snap-on choke hurts shielded loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 00:49:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh1b5nk5khn14d@corp.supernews.com>
Source record: 112761

How can a shunt fed tower be an antenna when it's connected to RF ground? How about the elements of a "plumber's delight" Yagi? Or a folded monopole?

Roy Lewallen, W7EL

donut wrote:
> Loopfan <bgreer1@earthlink.net> wrote in
> news:1mXPa.43439$C83.3440878@newsread1.prod.itd.earthlink.net:
>
>
>>Unless I misunderstand how ferrite-chokes work, this does seem to
>>physically point out that the shield is the actual antenna.
>
>
>
> How can the shield be the antenna when it's connected to RF ground?

1118. Re: ATN Log periodic

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 00:57:00 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vh1bfk4a6n967e@corp.supernews.com>
Source record: 112762
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc

Dear Tony (VK2TS):
Nice to see a real antenna question from an actual radio amateur...
It seems to me that two of your choices are:
1. Distributing seven elements on the same boom using the same attachment points. All except the front (smallest) element could be lengthened by a constant ratio so that the rear (longest) element is self resonant at about 12 MHz. An estimate for the ratio by which elements are lengthened may be found by dividing 18 by 14.
Seven elements to cover the octave you are interested in on a six meter boom is OK, but a longer boom and a few more elements can provide less variation in VSWR with frequency and more gain.
2. It sounds as if the boom you have is of one piece. [One alternate scheme for the boom of a LPDA is to construct the boom in two pieces so that the boom is also the transposing transmission line.] I say this because you mention "crossover straps for phasing."
Thus an alternative is to leave what you have alone and extend the boom. Place additional elements along the extension spaced with the same ratio presently used and having lengths that progress with the same ratio presently used. This might involve the least amount of work and certainly would produce a better antenna. The extension of the boom might be a size larger than the present boom so as better to support the longer elements and so as to facilitate "splicing" to the present boom.

Extending is what I would do.
73, Mac N8TT
--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"TS" <tstone12002@yahoo.com.au> wrote in message
news:5V_Pa.2175$wU5.221@news-server.bigpond.net.au...
> Hi all
>
> Was wondering if there is anyone out there who can help? I have just
> purchased a 7 element ATN 18-30-7 log periodic that covers 18-30Mhz. I
> believe there is another ATN aerial with the same boom length of 6
metres
> that covers 14-30Mhz. I was hoping someone with one of these beasts
could
> advise the element lengths etc so i can convert mine to cover
20metres. I
> assume i will need to rearrange the elements, drill alternate mounting
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> and change some element lengths and make some crossover straps for

phasing
> harnesses but thats just a formality. My aerial comes with a diagram
of the
> element lengths etc so was hoping someone could scan and send. I could
start
> from scratch and try and design a unit but this would save me a heap
of
> time. It appears that ATN is long gone. Any help would be greatly
> appreciated. I have quite a collection of amateur radio related
service
> manuals in pdf and or jpg format so maybe i can return the favour.
>
> email for reference is tstone12002@yahoo.com.au
>
> Thanks in advance.
> Cheers
> Tony
> VK2TS
>
>
>

1119. Re: 13B2 for 70CM?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 01:08:47 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <zi2Qa.44402$OZ2.7396@rwcrnsc54>
Source record: 112763

"AO KD5FXT" <aokd5fxt@aol.com> wrote in message
news:20030712160646.29311.00000224@mb-m15.aol.com...
> What abt using my 13B2 for us on 440? I don't have an analyzer for that
band
> nor a swr meter. What are the thoughts on this? I have a friend in
Houston
> who does it and verifies it to be ok. Responses and thoughts appreciated.

Seem like a waste of a good Cushcraft 13B2 (13 element yagi) 2 meter antenna
($ 150 MSRP)
for 440 MHz antenna. http://www.chq-inc.com/cush/13B2.html

What are you trying do on 70 cm ? (440MHz) SSB/CW DX, FM repeaters, ATV,
satellite work

1. When you move from 2 meters to 70 cm -- the coax you use from you
operating position to the antenna
becomes much more important than at HF or low VHF frequencies.

For example, for 100 feet of coax the attenuation in dB [from Cable X-perts
charts]
http://www.cablexperts.com/cfdocs/cat.cfm?ItemGroup=3&itmsub=0&bskt=0&USA_ship=1&c=0

RG-213/U at 150 MHz - 2.8 dB; at 450 MHz - 5.2 dB
LMR-400 at 150 MHz - 1.5 dB; at 450 MHz - 2.7 dB

2. Some designs to consider !

K5OE 70 cm yagi designs (in this case for AO-40)
http://members.aol.com/k5oe/P3D_ant/P3D_yagi.htm

VK3KHB 8 element design for ATV usage
[Uses 1/8" (~3 - 5 mm) solid rod for elements and round or square aluminum
tube (~ 10 mm)
http://www.gak.net.au/vk3khb/atv/antdesign.htm

WiMo products [Germany] - great for ideas
http://www.wimo.com/verteiler-e.htm?s1_e.htm

KK5UFO designs
http://www.homestead.com/kk5ufo/VHFbluprint.html

XE1MEX design (for 2m and 70cm)
http://xe1mex.gq.nu/antenas/yagi.html

Martin DK7ZB very nice designs
http://www.qsl.net/dk7zb/start1.htm

Derek, G4CQM
http://www.g4cqm.btinternet.co.uk/antennadesigner/yagis.htm

That's a start !!

w9gb
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

1120. Re: 13B2 for 70CM?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 01:10:56 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <Ak2Qa.45073$sY2.20381@rwcrnsc51.ops.asp.att.net>
Source record: 112764

I forgot Kent Britain, WA5VJB
Cheap Yagi antennas for VHF / UHF

http://www.clarc.org/Articles/uhf.htm

Element spacing and lengths provided on web site

w9gb
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

1121. Re: 13B2 for 70CM?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 01:31:57 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <inKdnYTor7QOK42iU-KYuQ@comcast.com>
Source record: 112765

If you do this. Don't assume the main lobe will be straight ahead. I have used a 7 el Cushcraft on 432, and found its best direction was about 30 degrees to one side. It had a gamma match.

Tam/WB2TT
"AO KD5FXT" <aokd5fxt@aol.com> wrote in message news:20030712160646.29311.00000224@mb-m15.aol.com...
> What abt using my 13B2 for us on 440? I don't have an analyzer for that band
> nor a swr meter. What are the thoughts on this? I have a friend in Houston
> who does it and verifies it to be ok. Responses and thoughts appreciated.

1122. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 01:44:41 UTC
From: richardharrison@webtv.net
Message-ID: <19106-3F10B989-196@storefull-2314.public.lawson.webtv.net>
Source record: 112767

Cecil, W5DXP wrote:
"But the reflection coefficient for that re-reflection event is not 1.0 so not all of the reflected power gets re-reflected."

100% re-reflection was a given. It is my assumption and I`m sticking with it..

Cecil introduced the idea of total re-reflection when he posed a problem of 1/2-wave of high impedance line imbeded in a 50-ohm system. The idea was that no reflection was presented to the transmitter by the 1/2-wave because it presents 50 ohms to the transmitter.

Where the transmitter meets the 1/2-wave, re-reflection within the 1/2-wave is complete. That`s possible regardless of the impedance the transmitter presents as a practical matter because the transmitter makes the reflection happen. I`m tired of explaining something cecil refuses to accept.

Best regards, Richard Harrison, KB5WZI

1123. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 01:52:13 UTC
From: Gary Schafer <gaschafer@comcast.net>
Message-ID: <bne1hvkrsi6gesqil7hpt94q8ampmumlln@4ax.com>
Source record: 112766

On Fri, 11 Jul 2003 21:35:16 +0200, <hees34@zonnet.nl> wrote:

>Maybe somebody can shed some light on the following matter:
>
>Recently I have installed an 18 GHz Microwave link, consisting of NEC-
>Pasolink gear and Andrews Microwave Dishes.
>Because it was a first for me, I had thought over the process of lining
>up the dishes. I had heard of and read about the side-lobe vs the main-
>lobe.
>So I figured out the my coworker on the other end of the link should move
>his dish and I would tell him the reading on my voltmeter. The higher the
>better and at the peak reading he would fix the dish. Then I would do the
>same on my end. And then his end a second time and then my end a second
>time
>We would repeat this procedure for the vertical line-up as well.
>I had calculated an expected attenuation which could be converted in a
>voltage reading.
>
>Assume the reading should say 3,5 V. Well I never got anything better
>than 2.8 / 2.9 volt.
>
>COnsequently I asked NEC for advice and they said that 'you should line
>up you own end using the voltmeter, and not the opposite end'. With this
>advice we repeated everything and reached the expected reading of 3.5
>volt. The 2.8 volt was a sidelobe of the antenna-beam
>
>What I don't understand is that when I rotate my dish (either
>horizontally or vertically) I can go from sidelobe to mainlobe to
>sidelobe. I don't move the dish further left or right, I only rotate it
>around a vertical or horizontal axis. When I would move the dish further
>left or right or up or down, than I can visualize going from lobe to
>lobe. Not by rotating the dish
>That is why I used the opposite end to move the beam.
>
>Anybody can explain where I go wrong
>
>Regards, Ad

When aligning the antennas you must swing each all the way left and
all the way right to where you are well past the beam width and any
lobes. Of course you note the signal strength as you do this. That is
the only way to be sure that you are not on a side lobe. Just moving
it a little each side of a peak or even moving it until you loose the
signal is not sufficient. You could hit a null between the main and a
side lobe and think that you have gone far enough but you still could

peak on a side lobe.
By swinging way past the lobes, each way, and noting the signal
strength as you go will assure that you find the main lobe.
Do the same in the vertical plane also.

73
Gary K4FMX

1124. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 03:17:24 UTC
From: richardharrison@webtv.net
Message-ID: <20396-3F10CF44-633@storefull-2312.public.lawson.webtv.net>
Source record: 112669

I apologize for the lower-case "C" used to initiate the last "Cecil" in my most recent posting. My finger must have been tired and weak when I hit the shift-key. No offense was intended.

It`s fixed phase and high transmitter volts which thwart energy return to the transmitter according to my profs over 50 years ago in circumstances posed in the problem I was considering. It seems reasonable when the stand-off happens at an impedance discontinuity.

Best regards, Richard Harrison, KB5WZI

1125. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 03:43:05 UTC
From: Jason Dugas <kb5urq@hotmail.com>
Message-ID: <vh1lasifj0gl66@corp.supernews.com>
Source record: 112768

The elements are "solid rod" I believe. What are the consequences of not changing the spacing, while cutting the elements to the right lengths? Loss of directivity would be my guess, but I'd still have a good radiator with relatively low SWR?

Thanks,

Jason
"G.Beat" <now9spamgb@spam.comcast.net> wrote in message
news:NF1Qa.44293$GL4.12054@rwcrnsc53...
>
> "Jason Dugas" <kb5urq@hotmail.com> wrote in message
> news:vh14vkqraphk05@corp.supernews.com...
> > Hello all,
> >
> > I have a 6m transverter on the way this week to use just in time for
the
> > CQWW contest this weekend... one problem NO ANTENNA!!
> >
> > So I picked up a very old Yagi, built in 1969, but still in great
> condition.
> > Its currently cut for the 40 MHz band, so I should be able to trim the
> > elements down and change the spacing for a 3-element 6m antenna, right?
> >
> Jason -
>
> Do you know who made the original Yagi? Is it aluminum tuning or solid
rod?
>
> The fastest method is to shorten the reflector, director and driven
> elements, BUT
> maintain the element spacing. Later - you can look at changing the
element
> spacing - if desired.
>
> w9gb
> --
> DO NOT use Reply.
> Only reply through ARRL forwarding service to W9GB
>
>

1126. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 03:56:09 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <tL4Qa.45016$OZ2.7985@rwcrnsc54>
Source record: 112670

"Jason Dugas" <kb5urq@hotmail.com> wrote in message
news:vh1lasifj0gl66@corp.supernews.com...
> The elements are "solid rod" I believe. What are the consequences of not
> changing the spacing, while cutting the elements to the right lengths?
Loss
> of directivity would be my guess, but I'd still have a good radiator with
> relatively low SWR?
>

Jason -

With solid rod elements - you are in a "measure at LEAST twice and cut once"
situation.

Most likely the directive lobe would not be optimized.
You can use antenna modeling software to see the specific results, BUT this
gets you on the air quickly.

w9gb
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

1127. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 04:36:01 UTC
From: richardharrison@webtv.net
Message-ID: <19105-3F10E1B1-588@storefull-2314.public.lawson.webtv.net>
Source record: 112671

Ad wrote:
"Anybody can explain where I go wrong?"

Too much worry, too little preparation.

You survey the path, ensuring freedom from obstruction and adequate clearance for Fresnel zone and anomalous propagation based on reliability demanded. Figure the azimuths for the dishes, lay them out with an instrument and put a stake in the ground on the path where it is visible from the antenna mount.

If the path isn`t trivially short, set the dish feed elevations with a bubble level to the horizontal.

Set the dish azimuth toward the stake driven in the path direction.

Turn the radios on. Apply an audio tone directly on the transmit baseband at both ends. Set the tone level almost to the maximum composite signal baseband lervel. Listen for the received tone in the order-wire speaker at each end. It should already be there. Now it iis just a matter of refining the antenna adjustments at both ends. On FM radios, limiter current is the usual indicator of signal strength. On other radios use whatever signal strength indicator there is. My practice has been to give the tower guy a repeater meter so he can optimize from his own observations while the ground operator advises.

One path end is adjusted at a time so it`s known who is making the path changes.

Sometimes it`s necessary to hunt for a tone by slowly sweeping the azimuth, but it`s rare.

You can believe it or not, but I`ve done path alignments countless times and the method described has always worked for me. It makes no difference which end is aligned first if you detect a signal to start with.because antennas and path propagation are completely reciprocal in all but the rarest cases.

Best regards, Richard Harrison, KB5WZI

1128. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 05:02:26 UTC
From: richardharrison@webtv.net
Message-ID: <20397-3F10E7E2-203@storefull-2312.public.lawson.webtv.net>
Source record: 112672

Gary, K4FMK wrote:
"Do the same in the vertical plane also."

Never had a minor lobe identification problem.

Never improved over the bubble-level set of vertical elevation angle on long paths either, but I always tried.

I had always calculated my path gains and losses, and my best received carrier power was very nearly always within a db of my calculations. If not, I had a problem. Fortunately, that was very rare.

Best regards, Richard Harrison, KB5WZI

1129. Re: new software PSK/KENWOOD/SSTV/more.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 05:57:18 UTC
From: Airy R Bean <SPAM@trap>
Message-ID: <3f10fdad$1_2@mk-nntp-1.news.uk.worldonline.com>
Source record: 112673
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Old Mother Cauldron-Flowchart seems to be missing.

c <no@spam.com> wrote in message
news:3f109066$0$45386$1b62eedf@news.wanadoo.nl...
> Do you know some nice software witch is not in
> this list?
> Please let me know!!!!

1130. Re: 13B2 for 70CM?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 07:34:28 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <oaQQ5vAEuQE$EAQg@ifwtech.co.uk>
Source record: 112674

G.Beat wrote:
>"AO KD5FXT" <aokd5fxt@aol.com> wrote in message
>news:20030712160646.29311.00000224@mb-m15.aol.com...
>> What abt using my 13B2 for us on 440? I don't have an analyzer for that
>band
>> nor a swr meter. What are the thoughts on this? I have a friend in
>Houston
>> who does it and verifies it to be ok. Responses and thoughts appreciated.
>
>Seem like a waste of a good Cushcraft 13B2 (13 element yagi) 2 meter antenna
>($ 150 MSRP)
>for 440 MHz antenna. http://www.chq-inc.com/cush/13B2.html
>
>What are you trying do on 70 cm ? (440MHz) SSB/CW DX, FM repeaters, ATV,
>satellite work
>
>1. When you move from 2 meters to 70 cm -- the coax you use from you
>operating position to the antenna
>becomes much more important than at HF or low VHF frequencies.
>
>For example, for 100 feet of coax the attenuation in dB [from Cable X-perts
>charts]
>http://www.cablexperts.com/cfdocs/cat.cfm?ItemGroup=3&itmsub=0&bskt=0&US
>A_ship=1&c=0
>
>RG-213/U at 150 MHz - 2.8 dB; at 450 MHz - 5.2 dB
>LMR-400 at 150 MHz - 1.5 dB; at 450 MHz - 2.7 dB
>
>2. Some designs to consider !
>
>K5OE 70 cm yagi designs (in this case for AO-40)
>http://members.aol.com/k5oe/P3D_ant/P3D_yagi.htm
>
>VK3KHB 8 element design for ATV usage
>[Uses 1/8" (~3 - 5 mm) solid rod for elements and round or square aluminum
>tube (~ 10 mm)
>http://www.gak.net.au/vk3khb/atv/antdesign.htm
>
>WiMo products [Germany] - great for ideas
>http://www.wimo.com/verteiler-e.htm?s1_e.htm
>
>KK5UFO designs
>http://www.homestead.com/kk5ufo/VHFbluprint.html
>

>XE1MEX design (for 2m and 70cm)
>http://xe1mex.gq.nu/antenas/yagi.html
>
>Martin DK7ZB very nice designs
>http://www.qsl.net/dk7zb/start1.htm
>
>Derek, G4CQM
>http://www.g4cqm.btinternet.co.uk/antennadesigner/yagis.htm
>
>That's a start !!
>
>w9gb

Also the 'VHF/UHF Long Yagi Workshop' on my site.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1131. Re: ATN Log periodic

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 08:10:52 UTC
From: TS <tstone12002@yahoo.com.au>
Message-ID: <gu8Qa.2752$wU5.1011@news-server.bigpond.net.au>
Source record: 112675
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc

Hi Mac

The lengthening of the boom and the further scaling of larger elements does sound like a damn good idea ! Thanks for the ideas,,,,much appreciated.

Cheers and 73's
Tony VK2TS

"J. McLaughlin" <JCM@Power-Net.Net> wrote in message
news:vh1bfk4a6n967e@corp.supernews.com...
> Dear Tony (VK2TS):
> Nice to see a real antenna question from an actual radio amateur...
> It seems to me that two of your choices are:
> 1. Distributing seven elements on the same boom using the same
> attachment points. All except the front (smallest) element could be
> lengthened by a constant ratio so that the rear (longest) element is
> self resonant at about 12 MHz. An estimate for the ratio by which
> elements are lengthened may be found by dividing 18 by 14.
> Seven elements to cover the octave you are interested in on a six
> meter boom is OK, but a longer boom and a few more elements can provide
> less variation in VSWR with frequency and more gain.
> 2. It sounds as if the boom you have is of one piece. [One alternate
> scheme for the boom of a LPDA is to construct the boom in two pieces so
> that the boom is also the transposing transmission line.] I say this
> because you mention "crossover straps for phasing."
> Thus an alternative is to leave what you have alone and extend the
> boom. Place additional elements along the extension spaced with the
> same ratio presently used and having lengths that progress with the same
> ratio presently used. This might involve the least amount of work and
> certainly would produce a better antenna. The extension of the boom
> might be a size larger than the present boom so as better to support the
> longer elements and so as to facilitate "splicing" to the present boom.
>
> Extending is what I would do.
> 73, Mac N8TT
> --
> J. Mc Laughlin - Michigan USA
> Home: JCM@Power-Net.Net
>
> "TS" <tstone12002@yahoo.com.au> wrote in message
> news:5V_Pa.2175$wU5.221@news-server.bigpond.net.au...
> > Hi all
> >
> > Was wondering if there is anyone out there who can help? I have just

> > purchased a 7 element ATN 18-30-7 log periodic that covers 18-30Mhz. I
> > believe there is another ATN aerial with the same boom length of 6
> metres
> > that covers 14-30Mhz. I was hoping someone with one of these beasts
> could
> > advise the element lengths etc so i can convert mine to cover
> 20metres. I
> > assume i will need to rearrange the elements, drill alternate mounting
> holes
> > and change some element lengths and make some crossover straps for
> phasing
> > harnesses but thats just a formality. My aerial comes with a diagram
> of the
> > element lengths etc so was hoping someone could scan and send. I could
> start
> > from scratch and try and design a unit but this would save me a heap
> of
> > time. It appears that ATN is long gone. Any help would be greatly
> > appreciated. I have quite a collection of amateur radio related
> service
> > manuals in pdf and or jpg format so maybe i can return the favour.
> >
> > email for reference is tstone12002@yahoo.com.au
> >
> > Thanks in advance.
> > Cheers
> > Tony
> > VK2TS
> >
> >
> >
>

1132. Re: 13B2 for 70CM?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 08:59:34 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <Wb9Qa.46087$OZ2.8420@rwcrnsc54>
Source record: 112676

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:oaQQ5vAEuQE$EAQg@ifwtech.co.uk...
> G.Beat wrote:
> >"AO KD5FXT" <aokd5fxt@aol.com> wrote in message
> >news:20030712160646.29311.00000224@mb-m15.aol.com...
> >2. Some designs to consider !
> >
> >K5OE 70 cm yagi designs (in this case for AO-40)
> >http://members.aol.com/k5oe/P3D_ant/P3D_yagi.htm

[snip]

> >
> >That's a start !!
> >
> >w9gb
>
> Also the 'VHF/UHF Long Yagi Workshop' on my site.
>
> --
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
> http://www.ifwtech.co.uk/g3sek

Sorry Ian ! I did not have your site readily bookmarked !!
[That's been addressed now !]

Cheers

Greg
w9gb
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

1133. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 10:21:10 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <873cha7mnd.fld@barrow.com>
Source record: 112677

richardharrison@webtv.net (Richard Harrison) wrote:
>Gary, K4FMK wrote:
>"Do the same in the vertical plane also."
>
>Never had a minor lobe identification problem.
>
>Never improved over the bubble-level set of vertical elevation angle on
>long paths either, but I always tried.
>
>I had always calculated my path gains and losses, and my best received
>carrier power was very nearly always within a db of my calculations. If
>not, I had a problem. Fortunately, that was very rare.
>
>Best regards, Richard Harrison, KB5WZI

Did you actually do very many?

The reason I ask is that there are other factors, and you
can't calculate them, and in some cases you can't even
adjust for them.

The best example that I know of was a TV microwave repeater that
was put in north of Tucson for a link between Tucson and Phoenix
back in the 1960's. This thing was located 50 miles from town,
at 8500 foot on a mountain top. They had a 50 foot tower
installed on a concrete base that cost $50,000 (think about that
in today's money!). And when all was said and done, they turned
it on, and it worked great!

But somebody had the smart idea to see what happens if they
slide the dish down the tower to see if the signal would
improve. It did!

So they positioned it vertically on the tower for best signal
strength. About 7 feet off the ground... :-)

(And darned if a few years later a build up of rhime ice on the
43 feet of tower above the dish didn't fall down and bend that
dish into a pile of ruble too.)

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1134. Inverted "V" with angle=60&#65533;

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 11:37:10 UTC
From: Frank <laspinafranziski@virgilio.it>
Message-ID: <pvg2hvs02kht5lmj3a65v8nkv92loqha0c@4ax.com>
Source record: 112678

I'm searching the formula for
a inverted V diple; the angle
is 60ï¿½.

I have formulas for angle of
90 and 120ï¿½

I was wondering if at such
angle the bandwith decreases.

Thanks in advance

--
togli la spina x risponder mi !!!

1135. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 12:33:36 UTC
From: Alex V Flinsch <avflinsch@att.net>
Message-ID: <pan.2003.07.13.12.43.01.468461@att.net>
Source record: 112679

On or about Sat, 12 Jul 2003 18:03:59 -0500, "Jason Dugas"
<kb5urq@hotmail.com> wrote about the following in article
<vh14vkqraphk05@corp.supernews.com>:

> Hello all,
>
> I have a 6m transverter on the way this week to use just in time for the
> CQWW contest this weekend... one problem NO ANTENNA!!
>
> So I picked up a very old Yagi, built in 1969, but still in great condition.
> Its currently cut for the 40 MHz band, so I should be able to trim the
> elements down and change the spacing for a 3-element 6m antenna, right?
>
> At any rate, the information I have been able to find so far (from various
> Yagi calculators found online such as that found at
> http://www.csgnetwork.com/antennae3ycalc.html) give the following figures:
>
> Calculated Driven Side Element Length 4'6 19/32"
> Calculated Total Driven Length 9'1 6/32"
> Calculated Reflector Length 9'7 5/8"
> Calculated Element Spacing 3'7 7/32"
> Calculated Director Length 8'6 23/32"
>
> Here are my questions:
> 1. Can I do this? Cut the elements, change the spacing.

Are you sure that it is cut for 40 MHz, and not 40 meters? What service
uses 40 MHz anyway?

If the yagi is really for 40 MHz, then I would just cut the elements to
length and not worry about the spacing, as there is a fairly wide range of
working spacing values. The only thing that would be changed is your
radiation pattern. If the yagi was originally for 40m, you will need to do
a lot of trimming, and will need to adjust the spacing.

> 2. What does "driven side element" length refer to? Is this the "matching
> dipole" (gamma match) part of the driven element?

No, it refers to the length of each leg of the driven element (which is a
dipole)

--
Alex / KC2IVL
ft100 software for Linux http://www.qsl.net/kc2ivl
"Good judgment comes from experience,
and a lot of that comes from bad judgment"

1136. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 12:59:28 UTC
From: richardharrison@webtv.net
Message-ID: <22550-3F1157B0-16@storefull-2311.public.lawson.webtv.net>
Source record: 112681

Floyd Davidson wrote:
"Did you actually do very many?"

I`ve done single-hops, several-hop systems, and transcontinental systems. I`ve done them on-shore, off-shore, and in a multi-hop loop system on-shore and off-shore. I`ve done several systems with paths sandwiched between tall buildings. I`ve done 960 radio, 2-GHz, and 6-GHz systems. I`ve done space-diversity systems, hot-standby, and unprotected systems. I`ve done solid-state systems, vacuum-tube systems, etc., etc.

I have no reason to say anything which is untrue. Floyd knows of an anomalous hop in the desert. The path suffers reflections, else it would not have great variation of signal with height. I know of many anomalous systems, but I never built one. All of mine worked as designed.

Best regards, Richard Harrison, KB5WZI

1137. Re: Inverted "V" with angle=60&#65533;

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 13:12:57 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <berlsp$662$1@hercules.btinternet.com>
Source record: 112680

> I'm searching the formula for
> a inverted V diple; the angle
> is 60&#65533;.
>
> I was wondering if at such
> angle the bandwith decreases.

==========

What would you like calculate ?

What is your definition of 'bandwidth' ?

Are you concerned only with what the SWR meter is supposed to be measuring ?

Bandwidth depends as much on transmission line and matching arrangements, if there are any, as on the V itself. Changing the apex angle is just as likely to increase as to decrease bandwidth, depending on what it is before any changes are made.

Download from following website in a few seconds program INV_VEE and run immediately. It will estimate most characteristics of a 1/2-wave resonant inverted-V, including input impedance of the dipole and of the input impedance, R+jX, of the transmission line at the transmitter end.

BTW, although it may be possible to minimise SWR on the feedline by varying apex angle, overall result may be a loss in efficiency. Relative to a horizontal dipole the V has a lower radiation resistance and a higher ground loss resistance. The effects interact with each other. The program demonstrates. All dimensions and angle can be varied "What-if ? "

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

1138. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 14:24:42 UTC
From: Mikael Mortensen <mikael@danbbs.dk>
Message-ID: <3f116b98$0$13163$edfadb0f@dread15.news.tele.dk>
Source record: 112682

Hi !

I'm not licensed And I will only use the CB part of the radio.
The problem was, I couldnt adjust my 27Mhz antenna, in the 27Mhz range.

Regards
Mikael

"Martin, VK2UMJ" <vk2umj@REMOVEyahoo.com.au> wrote in message
news:bem6nt$g61$1@austar-news.austar.net.au...
> "Mikael Mortensen" <mikael@danbbs.dk> wrote in message
> news:3f0d6470$0$13242$edfadb0f@dread15.news.tele.dk...
> > Hi!
> >
> > It goes from 25.165 to 29.695 Mhz..
> >
> > Regards
> > Mikael
> >
> >
>
> If you're not a licensed ham, and by the sound of your post you're not,
then
> it really doesn't matter what antenna you use because you wont be
> transmitting over that range anyway, will you....
>
> If you are a licensed ham, then you should have the basic technical
> knowledge to know how to get an antenna to tune to the frequencies you
need
> to use, and I don't really think the 10m band covers 25 to 29 Mhz........
>
> Just my useless bit of advice...
>
> Martin, VK2UMJ
>
>

1139. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 14:30:32 UTC
From: Mikael Mortensen <mikael@danbbs.dk>
Message-ID: <3f116cf6$0$13222$edfadb0f@dread15.news.tele.dk>
Source record: 112683

Hi!

Well i guess you already know that Denmark uses FM. :-)

I will try your advice.

Regards
Mikael

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:cnttgvg21pbtgenfreh18oek69i1l0i0vj@4ax.com...
> On Fri, 11 Jul 2003 19:32:01 +0200, "Mikael Mortensen"
> <mikael@danbbs.dk> wrote:
>
> >Hi!
> >
> >I used channel 20 on FM. And pushed the antenna down little by little as
far
> >as it could go.
> >Its with a magnetic foot. -maybe thats the problem.
> >But it worked on my Danita 640FM (only CB).
> >
> >Regards
> > Mikael
> >
>
> Hi Mikael,
>
> FM? Has CB changed that much or are you using non type-accepted gear?
>
> The mag-mount could be a problem. One way to test it is to add an
> extender cable (using barrel connectors and another 5 or 10 feet of
> coax) and see if that changes anything. If so, you have a common mode
> issue. You can ignore it as a problem if you simply select the right
> length of extension that pulls the SWR down (and never change anything
> else).
>
> 73's
> Richard Clark, KB7QHC

1140. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 14:35:42 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <27eQa.52052$Ph3.4177@sccrnsc04>
Source record: 112684

"Alex V Flinsch" <avflinsch@att.net> wrote in message
news:pan.2003.07.13.12.43.01.468461@att.net...
> On or about Sat, 12 Jul 2003 18:03:59 -0500, "Jason Dugas"
> <kb5urq@hotmail.com> wrote about the following in article
> <vh14vkqraphk05@corp.supernews.com>:
>
> > Hello all,
> >
> > I have a 6m transverter on the way this week to use just in time for
the
> > CQWW contest this weekend... one problem NO ANTENNA!!
> >
> > So I picked up a very old Yagi, built in 1969, but still in great
condition.
> > Its currently cut for the 40 MHz band, so I should be able to trim the
> > elements down and change the spacing for a 3-element 6m antenna, right?
> >
> > At any rate, the information I have been able to find so far (from
various
> > Yagi calculators found online such as that found at
> > http://www.csgnetwork.com/antennae3ycalc.html) give the following
figures:
> >
> > Calculated Driven Side Element Length 4'6 19/32"
> > Calculated Total Driven Length 9'1 6/32"
> > Calculated Reflector Length 9'7 5/8"
> > Calculated Element Spacing 3'7 7/32"
> > Calculated Director Length 8'6 23/32"
> >
> > Here are my questions:
> > 1. Can I do this? Cut the elements, change the spacing.
>
> Are you sure that it is cut for 40 MHz, and not 40 meters? What service
> uses 40 MHz anyway?

Alex -

40 MHz is within the "Land Mobile" allocation (low band VHF - within 30 to
50 MHz),
which has existed at least since the 1940s (post World War 2).

Here is the NTIA - U.S. Frequency Allocation Chart
http://www.ntia.doc.gov/osmhome/allochrt.html

My father had a commercial radio system at 46 MHz from 1957 to 1990.
The Illinois State Police used 42.xx MHz for their District office stations
for over 50 years
and many of their mobiles (long whip antennas) well into the 1980s and 1990s

Greg
w9gb

1141. Re: Inverted "V" with angle=60

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 14:44:16 UTC
From: Jim Pennino <jimp@specsol.com>
Message-ID: <berr80$8kc$2@mail.specsol.com>
Source record: 112685

Frank <laspinafranziski@virgilio.it> wrote:
> I'm searching the formula for
> a inverted V diple; the angle
> is 60.

> I have formulas for angle of
> 90 and 120

> I was wondering if at such
> angle the bandwith decreases.

> Thanks in advance

> --
> togli la spina x risponder mi !!!

Download the demo of eznec from http://www.eznec.com/ and make the
angle whatever you want.

--
Jim Pennino

1142. 6m J pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 14:55:13 UTC
From: Barry <g7ute@btopenworld.com>
Message-ID: <berrshlqv1@titan.btinternet.com>
Source record: 112686

Does any one have a design/diagram for a 6m J-pole co-linear?

If not please suggest publication for details.

1143. Re: 6m J pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 15:14:42 UTC
From: Barry <g7ute@btopenworld.com>
Message-ID: <bert12ita1@hercules.btinternet.com>
Source record: 112688

Thanks for link.
B

1144. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 15:40:12 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87smpa5tb7.fld@barrow.com>
Source record: 112689

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"Did you actually do very many?"
>
>I`ve done single-hops, several-hop systems, and transcontinental
>systems. I`ve done them on-shore, off-shore, and in a multi-hop loop
>system on-shore and off-shore. I`ve done several systems with paths
>sandwiched between tall buildings. I`ve done 960 radio, 2-GHz, and 6-GHz
>systems. I`ve done space-diversity systems, hot-standby, and unprotected
>systems. I`ve done solid-state systems, vacuum-tube systems, etc., etc.
>
>I have no reason to say anything which is untrue. Floyd knows of an
>anomalous hop in the desert. The path suffers reflections, else it would
>not have great variation of signal with height. I know of many anomalous
>systems, but I never built one. All of mine worked as designed.

As I pointed out, that was the most _interesting_ example that I
know of.

However, you've just stated something that I can't quite get my
arms around. "All of mine worked as designed." is stated as if
the "anomalous systems" that have a path which "suffers
reflections" are somehow not common, or not well designed, or
not normal.

Yet you mentioned "on shore" and "off shore" each twice above,
and I'm having a real difficult time thinking you've ever
designed a microwave shot across tidal waters without having
"reflections" which could not specifically be calculated. And
there is simply no way that it "worked as designed" unless you
mean you just allowed for a large enough fudge factor to account
for signal swings from day to day. The original claim that they
all came in within 1 dB is just hilarious.

My bet is that you have hung around and do know how these paths
function over time, and I'll bet you just exaggerated a little,
that's all.

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1145. Re: ATN Log periodic

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 15:42:36 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vh2vcbaqbno4aa@corp.supernews.com>
Source record: 112690
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc

Dear Tony: You are welcome.
What might, or might not as I have only minimal information, prove to be the easy way to scale the new elements is to realize that the tips of the new elements will be close to being in line with the tips of the "old" elements. This is close enough particularly if, to maintain the principle of each element being designed to fail with the same amount of wind/ice pressure, the majority of the ends of the new elements are of the same diameter as those of the "old" elements. In other words, if the original antenna was designed to the above principle, the new elements will look like the longest "old" element with added buts that are larger. Having the additional boom be the next size larger than the old boom facilitates this and the splicing of the booms. Consider a "plastic" rope strut to stiffen the boom.
Ice may well not be a major consideration for you as it is here. However, a few years of wind induced vibration has a tendency to damage the places where the longer elements are attached to the boom. Internal and/or external boom/element sleeves in those areas can extend the lifetime significantly.
Keep us all posted on your progress. Several of us will be interested in the specifics of the original antenna.
73, Mac N8TT
--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"TS" <tstone12002@yahoo.com.au> wrote in message
news:gu8Qa.2752$wU5.1011@news-server.bigpond.net.au...
> Hi Mac
>
> The lengthening of the boom and the further scaling of larger elements
does
> sound like a damn good idea ! Thanks for the ideas,,,,much
appreciated.
>
> Cheers and 73's
> Tony VK2TS
>
> "J. McLaughlin" <JCM@Power-Net.Net> wrote in message
> news:vh1bfk4a6n967e@corp.supernews.com...
> > Dear Tony (VK2TS):
> > Nice to see a real antenna question from an actual radio
amateur...
> > It seems to me that two of your choices are:

> > 1. Distributing seven elements on the same boom using the same
> > attachment points. All except the front (smallest) element could be
> > lengthened by a constant ratio so that the rear (longest) element is
> > self resonant at about 12 MHz. An estimate for the ratio by which
> > elements are lengthened may be found by dividing 18 by 14.
> > Seven elements to cover the octave you are interested in on a
six
> > meter boom is OK, but a longer boom and a few more elements can
provide
> > less variation in VSWR with frequency and more gain.
> > 2. It sounds as if the boom you have is of one piece. [One
alternate
> > scheme for the boom of a LPDA is to construct the boom in two pieces
so
> > that the boom is also the transposing transmission line.] I say
this
> > because you mention "crossover straps for phasing."
> > Thus an alternative is to leave what you have alone and extend
the
> > boom. Place additional elements along the extension spaced with the
> > same ratio presently used and having lengths that progress with the
same
> > ratio presently used. This might involve the least amount of work
and
> > certainly would produce a better antenna. The extension of the boom
> > might be a size larger than the present boom so as better to support
the
> > longer elements and so as to facilitate "splicing" to the present
boom.
> >
> > Extending is what I would do.
> > 73, Mac N8TT
> > --
> > J. Mc Laughlin - Michigan USA
> > Home: JCM@Power-Net.Net
> >

1146. Great Homebrew Antenna Roundup -- Hundreds To Choose From

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 16:00:48 UTC
From: Guessing <Guessing@connectnet.net>
Message-ID: <RmfQa.2521$Bd5.1462@fed1read01>
Source record: 112691

All at URL: http://ac6v.com/antprojects.htm

160M 80M 40M 20M 17M 15M 12M 10M 6M 2M 440Mhz 220MHz
900MHz GHZ

HF MULTI-BAND & TRI-BANDERS

ANTENNA SOFTWARE PROGRAMS

THEORY

BUILDING TIPS

CALCULATORS

STEALTH TOO

1147. Re: comments on this off center fed antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 16:26:36 UTC
From: fmmck@aol.com
Message-ID: <20030713122636.03232.00000259@mb-m12.aol.com>
Source record: 112692

<< What are the groups thoughts on an off center feed antenna being 41 feet long on one side and 96 feet long on the other side. The feed point is a 4:1 balun and then any length of coax to the tuner. How is it for a comprimise antenna for all the bands 80 meters to 10 meters ? >>

Ralph-

When I started in the mid-50s, a popular antenna was the "Full Windom". It was an off-center fed dipole, fed with 300 Ohm twin lead, and was as popular then as the G5RV is today. Its length was 135 feet, but I do not recall the offset. I think yours is close enough to call it the same antenna! (Note: The original Windom was NOT a dipole, but a wire fed off-center with a single wire. Ground was the other antenna terminal!)

In my case, I fed the 300 Ohm twin lead all the way to the shack. My earliest rigs were link-coupled, so the link was balanced as long as one side wasn't grounded. Later, I advanced to a tuner with a coil that had balanced taps for connection to the antenna. Others used BalUn coils and co-ax, which I couldn't afford at the time.

The wisdom of the day, was that the Windom was all-band but wouldn't work on Twenty Meters. I used mine mainly on Seventyfive and Forty Meters. It may have worked on Twenty, but I don't recall trying it. I believe it also worked on Fifteen Meters, but I didn't have a receiver that worked well there.

73, Fred, K4DII

1148. Sunair Automatic Tuner Info / Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 16:33:24 UTC
From: 3518693@mail.com
Message-ID: <740cebc3.0307130833.583f3ee3@posting.google.com>
Source record: 112693

Hello...

I am looking to install either a dipole, or just a long wire, and need suffestions on a tuner. I am running an amp, 700-800 watts out max. The SGC 235 has a max input of 500 watts (no, I am not lowering the power, sorry). So, Who makes an automatic tuner that handles 1000 watts, and can be mounted outdoors, at the antenna feed-point?

Sunair came to mind, any info on these, where to obtain, how to control it, etc? Any others? Harris?

Thanks

MW

1149. Any VEE Beam design info around ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 16:56:08 UTC
From: DOUGLAS SNOWDEN <SNOWDEN@peoplepc.com>
Message-ID: <vh33p9t588da12@corp.supernews.com>
Source record: 112694

I am looking for something on the web that describes the optimum angles between wires, etc. I am not talking about inveted dipole beams, but a pair of horizontal wires (or sloping wires) that are at a 30 degree or so angle, usually fed with open wire line.

Thanks

Doug N4IJ

1150. Re: 6m J pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 17:18:30 UTC
From: fmmck@aol.com
Message-ID: <20030713131830.03232.00000261@mb-m12.aol.com>
Source record: 112695

<< >Does any one have a design/diagram for a 6m J-pole co-linear?
>
>If not please suggest publication for details.
>
>

http://www.marktwain.net/~aschmitz/antennas/jpolecalc.html >>

Bob-

Where does the Co-Ax connect?

Based on other Two Meter J-Pole designs, I would guess that the Co-Ax connects about two or three inches from the bottom of the "J" matching section, with shield connected to the main element and center conductor connected to the matching arm. For Six Meters, perhaps the connection would be about six inches above the bottom. If you used stainless steel hose clamps to attach the cable, adjustment would be easy.

73, Fred, K4DII

1151. Re: Inverted "V" with angle=60°

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 17:24:17 UTC
From: Frank <laspinafranziski@virgilio.it>
Message-ID: <o253hvsh99hi5ub5ud36mrhh8ii4143oac@4ax.com>
Source record: 112696

On Sun, 13 Jul 2003 13:12:57 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>It will estimate most characteristics of a 1/2-wave resonant
>inverted-V,

Thank you for this great software.
I didn't understand some input:

S: Soil resistivity, ohm-metres
Which item to input if antenna is on
a roof?

H: Height of ends, metres ......
Is it the height from feedpoint
and the roof or from feedpoint
and ground?

Thanks again

--
togli la spina x risponder mi !!!

1152. Re: Sunair Automatic Tuner Info / Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 17:37:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh367jsl6lfab2@corp.supernews.com>
Source record: 112697

Interesting. Just the other day, we were told that 10 dB wasn't enough signal strength difference to worry about, and even ol' "Kurt Sturba" has said that a mere 18 dB isn't that big a deal. Now here we have someone who feels that an extra 1.5 to 2 dB is worth considerable trouble and expense. Just goes to show ya.

Roy Lewallen, W7EL

M Wilson wrote:
> Hello...
>
> I am looking to install either a dipole, or just a long wire, and need
> suffestions on a tuner. I am running an amp, 700-800 watts out max.
> The SGC 235 has a max input of 500 watts (no, I am not lowering the
> power, sorry). So, Who makes an automatic tuner that handles 1000
> watts, and can be mounted outdoors, at the antenna feed-point?
>
> Sunair came to mind, any info on these, where to obtain, how to
> control it, etc? Any others? Harris?
>
> Thanks
>
> MW

1153. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 18:12:05 UTC
From: richardharrison@webtv.net
Message-ID: <22551-3F11A0F5-35@storefull-2311.public.lawson.webtv.net>
Source record: 112702

Floyd Davidson wrote:
"---I`ll bet you just exagerated a little, that`s all."

Too many hours of daylight on Floyd are taking their toll.

Everything you work with is known. precisely, including path attenuation under normal propagation conditions. Normally, you don`t have a path grazing at a highly reflective point. Your path survey discloses path detractions and you adjust for the possibility of distructive interference. You may opt for a high / low antenna placement for the path ends, diversity, more clearance, shorter paths, and brute-force fade margins. The high / low option lets you move the reflection point and the reflection. Long microwave systems must have huge fade margins anyway due to noise buildup from individual path contributions. A receiver not too much below the overload signal point is a very quiet receiver and contributes almost no noise to a system.

When the path design is right, the as-built numbers are almost exactly as calculated, whether you believe it or not.

Best regards, Richard Harrison, KB5WZI

1154. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 18:15:35 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f11a2b0$1_7@corp.newsgroups.com>
Source record: 112698

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "But the reflection coefficient for that re-reflection event is not 1.0
> so not all of the reflected power gets re-reflected."
>
> 100% re-reflection was a given. It is my assumption and I`m sticking
> with it..

And my question is, in the absence of a physical reflection coefficient magnitude of 1.0, what causes 100% re-reflection?

> I`m tired of explaining something cecil refuses to accept.

I accept everything you have explained, Richard, but you have not answered my question. What causes 100% re-reflection? Please be specific. A voltage to current ratio is a result and not the cause of anything.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike ..." Albert Einstein

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1155. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 18:17:15 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f11a313$1_7@corp.newsgroups.com>
Source record: 112699

Richard Harrison wrote:
> It`s fixed phase and high transmitter volts which thwart energy return
> to the transmitter according to my profs over 50 years ago in
> circumstances posed in the problem I was considering. It seems
> reasonable when the stand-off happens at an impedance discontinuity.

Why doesn't the same thing happen 1/2WL back up the transmission line
where the impedance is exactly the same?
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

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1156. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 18:27:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f11a56e_7@corp.newsgroups.com>
Source record: 112700

Jim Kelley wrote:
> I've never disputed the solutions produce the same number. I disputed
> the validity of the approach you took to arrive at the equation.

Here's a question for you, Jim. How much power is transferred from the
mismatched load rearward by Pref2?

source---50 ohm feedline---+---150 ohm feedline---load
Pfwd1=200W --> Pfwd2=133.33W -->
<-- Pref1=100W <-- Pref2=33.33W

If, as you have asserted, Pref2 can transfer zero watts when it measures
33.33W, can it also transfer 100W when it measures 33.33W?
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

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1157. Re: antenna 10m

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 18:39:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4o93hvo08iifh4vf21nq8ga8d717tkakeb@4ax.com>
Source record: 112701

On Sun, 13 Jul 2003 16:30:32 +0200, "Mikael Mortensen"
<mikael@danbbs.dk> wrote:

>Hi!
>
>Well i guess you already know that Denmark uses FM. :-)
>
>I will try your advice.
>
>Regards
> Mikael
>

Hi Mikael,

Let us know how good/bad the advice was.

73's
Richard Clark, KB7QHC

1158. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 19:38:42 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87k7am5i9p.fld@barrow.com>
Source record: 112704

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"---I`ll bet you just exagerated a little, that`s all."
>
>Too many hours of daylight on Floyd are taking their toll.

Look like you need some daylight.

>Everything you work with is known. precisely, including path attenuation
>under normal propagation conditions. Normally, you don`t have a path
>grazing at a highly reflective point. Your path survey discloses path
>detractions and you adjust for the possibility of distructive
>interference. You may opt for a high / low antenna placement for the
>path ends, diversity, more clearance, shorter paths, and brute-force
>fade margins. The high / low option lets you move the reflection point
>and the reflection. Long microwave systems must have huge fade margins
>anyway due to noise buildup from individual path contributions. A
>receiver not too much below the overload signal point is a very quiet
>receiver and contributes almost no noise to a system.
>
>When the path design is right, the as-built numbers are almost exactly
>as calculated, whether you believe it or not.

Lets see, now you are saying that you go out and *measure* the
path, rather than calculate it.

And of course you measure it, *every* *single* *time*, on a day
when you *know* whether it is giving you the best path, the
worst path, or some specific point in between.

Richard you can cut the bullshit out. I've been measuring
microwave paths for 40 years. You don't calculate them to
within 1 dB. You might find out what that is after measuring it
on a regular basis for a year. (I've done *continous* path
measurements of several paths for over a year, and on two for
10 years.)

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1159. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 20:11:26 UTC
From: richardharrison@webtv.net
Message-ID: <23393-3F11BCEE-72@storefull-2315.public.lawson.webtv.net>
Source record: 112707

Cecil, W5DXP wroyte:
"Why doesn`t the same thing happen 1/2WL back up the line where the impedance is exactly the same?"

Uniform distribution of inductance and capacitance 1/2WL back up the line.

John E. Cunningham in "The Complete Broadcast Antenna Handbook" wrote as I recall, an attempt to explain the reflection operation on a transmission line as caused by impedance discontinuities.

If I recall, he said a short on a line vitiates capacitance at that point. It shorts it out. Increased current in the final segment of the line inductance sets off the reflection. The extraordinary volts generated, reverse the wave direction and reverse the phase of the volts. What happens to the current is a turnaround sooner than later, but it still comes and goes in the same phase.

The discontinuity is essential to the turnaround. Lacking a reduction point or growth point in inductance to capacitance ratio, you lack an essential to generate the reversed signal. That`s why the virtual short does not turn the signal around. It has no discontinuity.

Best regards, Richard Harrison, KB5WZI

1160. Re: Inverted "V" with angle=60°

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 20:42:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <besg8e$r8$1@sparta.btinternet.com>
Source record: 112705

```
> S: Soil resistivity, ohm-metres
> Which item to input if antenna is on
> a roof?
-----------------------------------------------

If it's corrugated iron then enter 0, Sea water or Very good.
If it's timber then enter 500 or Very Poor.

-----------------------------------------------

> H: Height of ends, metres ......
> Is it the height from feedpoint
> and the roof or from feedpoint
> and ground?

----------------------------------------

Nothing to do with feedpoint.

The 'ends of the wire' are the ends of the wire.

Height of the ends above ground level is the height of the ends above the
roof - which so far as the antenna is concerned IS the ground.

Raise the height of the ends by 1 metre and the whole triangular shape,
including the apex, increases in height by 1 metre. That way you have
nothing to worry about. The length of the dipole and the apex angle remain
unchanged.

To vary the apex angle, vary the straight-line distance between the dipole
ends and the dipole length will remain unchanged.

Input variables can be swept by up/down keyboard keys between their extreme
values. All can be done in a second or two.

Set the apex angle to 180 degrees and you have the performance of an
ordinary 1/2-wave resonant dipole with its feedline, either coax, ladderline
or open wire.
---
Reg
```

1161. Re: Any VEE Beam design info around ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 20:48:12 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <GSWdnfnO5d4PWIyiU-KYuQ@comcast.com>
Source record: 112706

See Jim Pennino's response to Inverted "V" posting below.

Tam/WB2TT
"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:vh33p9t588da12@corp.supernews.com...
> I am looking for something on the web that describes the optimum
> angles between wires, etc. I am not talking about inveted dipole
> beams, but a pair of horizontal wires (or sloping wires) that are at
> a 30 degree or so angle, usually fed with open wire line.
>
> Thanks
>
> Doug N4IJ
>
>

1162. Re: Any VEE Beam design info around ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 20:48:29 UTC
From: Bob <bcnntp@optusnet.com.au>
Message-ID: <uigseb-9on.ln@p400bob.lse.com.au>
Source record: 112708

Hi Doug

ie like half a rhombic?

I remember the ARRL antenna book has a graph of wire wavelength vs gain/lobe performance. Cant imagine it being to much more difficult than that.

Possibly a websearch on rhombics? Might cover the development/theory.

http://www.mindspring.com/~cummings7/rhombic.html has a link at the end to a Windoze pgm that calculates best wire angles... I didnt try it...

Cheers Bob VK2YQA

> I am looking for something on the web that describes the optimum
> angles between wires, etc. I am not talking about inveted dipole
> beams, but a pair of horizontal wires (or sloping wires) that are at
> a 30 degree or so angle, usually fed with open wire line.
>
> Thanks
>
> Doug N4IJ

1163. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 20:49:24 UTC
From: richardharrison@webtv.net
Message-ID: <21680-3F11C5D4-101@storefull-2316.public.lawson.webtv.net>
Source record: 112709

Floyd Davidson wrote:
"Richard you can cut the bullshit out."

Floyd claims to have measured microwave paths for 40 years. I`ve been doing it since 1960, so that`s about as long.

I`ve made repeated measurements over a number of years on the same repeaters. During normal propagation, which is by far most of the time, path loss like other system losses is very constant.

Of course there are periods of anomalous propagation. It depends on location, season, and time of day. It`s worse when the atmosphere is stagnant.

I`m sure that marginal paths with insufficient clearance and other problems may have propagation which comes and goes. I`ve seen some, but I haven`t built any like that.

Best regards, Richard Harrison, KB5WZI

1164. Re: Inverted "V" with angle=60

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 21:56:39 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <beskin$1rb$1@hercules.btinternet.com>
Source record: 112710

"Jim Pennino" wrote
> Download the demo of eznec from http://www.eznec.com/ and make the
> angle whatever you want.
>
>
I'm gonna be like Brer Rabbit. :o)

Reg

1165. Re: Any VEE Beam design info around ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 22:20:33 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307131420.202810e4@posting.google.com>
Source record: 112711

"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:<vh33p9t588da12@corp.supernews.com>...
> I am looking for something on the web that describes the optimum
> angles between wires, etc. I am not talking about inveted dipole
> beams, but a pair of horizontal wires (or sloping wires) that are at
> a 30 degree or so angle, usually fed with open wire line.
>
> Thanks
>
> Doug N4IJ

Depends on the length of the wires. Usually ranges from about 70-75
degrees for a V beam 2 waves long, down to about 28 degrees or so for
a 12 wave long V beam.
A V beam 8 waves long would be best around 30-35 degrees or so. There
is info on V beams both in the ARRL ant handbooks, and also the Bill
Orr radio handbook has a section. Dunno about the web...MK

1166. Re: comments on this off center fed antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 22:27:42 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307131427.5e7cfa82@posting.google.com>
Source record: 112712

"Ralph Mowery" <rmowery@ctc.net> wrote in message
>
> What I am looking for is a simple antenna without traps that will allow me
> to keep a sched on 80 meters with a friend while I am away form home and
> also have the ability to use other bands without a big loss in efficency and
> be coax fed. I know I could just use a 80 meter dipole but would be taking
> a big loss on 40 meters if I use coax to feed it.
>
> 73 de KU4PT

If you have room, you could slap 40 legs onto the same coax in
parallel. 20m also if you wanted. The good part about doing that is
you get normal dipole performance and pattern on both the bands if at
right angles. No compromising on efficiency.
Even if not at exact right angles, it would work fine. Many of mine
are like stretched "X's", or butterfly wings. MK

1167. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 22:36:58 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307131436.380431f7@posting.google.com>
Source record: 112713

"Jason Dugas" <kb5urq@hotmail.com> wrote in message
news:<vh1lasifj0gl66@corp.supernews.com>...
> The elements are "solid rod" I believe. What are the consequences of not
> changing the spacing, while cutting the elements to the right lengths? Loss
> of directivity would be my guess, but I'd still have a good radiator with
> relatively low SWR?

If it were for 40 mhz, the spacing at 50 mhz should be usable as is I
bet. What I'd do is model the antenna with the current spacing, but
with the new element lengths and see what the pattern looks like.
Being the boom is longer on a 40 mhz beam than the 50 mhz, you have
the potential to have a long boom antenna. If the 40 mhz beam was a
"short" maximum f/b ratio antenna, it might be about right on 6m as a
max gain antenna. My 6m beam is 3 elements and copied after the NBS
yagi. The boom is 8 ft long. It's set up for maximum gain and mediocre
f/b ratio. But many people use a 6 ft boom on a 3 el 6m yagi to have
a better f/b ratio with slightly less gain. The spacing is not overly
critical just to operate with decent gain. But you could respace if
you decide to optimise the antenna for your exact wants. My beam is
exactly copied from the one in the elnec or eznec demo. "NBS yagi"
It's 1/2 copper tubing same as the model. The real world results
closely matched what it modeled. MK

1168. Want Aluminum towers, etc

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 23:39:50 UTC
From: DOUGLAS SNOWDEN <SNOWDEN@peoplepc.com>
Message-ID: <vh3re7g0c0vd2e@corp.supernews.com>
Source record: 112714

Looking for:
a couple of towers, either crankup or foldover.

60 ft or higher. One tower would be used just to hang high wire antennas from, so can be light duty. The ohter would be to put a HF beam on. Needs to be within pickup distance of Richmond, VA

Doug
N4IJ

1169. Re: Tuner detunes antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-13 23:40:36 UTC
From: David Cook <nospam.davepc4@comcast.net>
Message-ID: <T5mQa.54763$H17.18214@sccrnsc02>
Source record: 112715

Thanks for all the responses and suggestions on this one. After fiddling around over the weekend, I still don't have a definite answer, but thought I'd let you all know the status.

I tried various lengths of coax in the line to see if that might have had something to do with it, but with no difference to the SWR minimum frequency (note, I don't say "resonance" anymore :-). I used lengths ranging from about a foot and a half, to eight feet, to a twenty foot section. I also stuck a couple of different SWR meters in the line, and at various places along the lengths of coax. Still no changes from the normal reading. It's only when I put the MFJ tuner in the line that things go wacky.

Anyway, the bottom line is that the tuner will be useful for feeding balanced line or single-wire antennas. But I won't be using on any coax-fed antennas that are already somewhat well-behaved. My best guess at this point is what David Robbins suggested, i.e., the tuner's throwing some wierd impedance bump into the line which results in this peculiar effect.

73, Dave, WA0TTN

"David Cook" <nospam.davepc4@comcast.net> wrote in message
news:pRAPa.33186$OZ2.5556@rwcrnsc54...
> I recently bought an MFJ-986 tuner and have been using it will good
results
> on a balanced feed antenna, but I just found an odd behavior. I have a 40
> and 20 meter dipole that I've used for several years, and 20 meter
elements
> are tuned to 14.125 which gives me a decent SWR on CW and the low end of
> SSB. I thought I'd hook it to the tuner so I could use the top end of 20
> meters and tune the off-resonance SWR down. I found that when I hooked the
> antenna to the tuner and fed it through the Coax1 Direct, the 1:1 SWR
point
> shifted down about 13.950! I took the tuner out of the circuit and it
again
> tunes at the normal frequency. So I tried it on the Coax 2 connector and
> found that that one shifted the 1:1 SWR frequency down about 14.050. I
> called MFJ technical support and they, of course, had no clue. I also
> fiddled with the tuning knobs, thinking that there might be some
interaction
> inside the box even though the coax was in the direct connect mode, but no
> interaction found. The 40 meter dipole seems stable, as far as the
resonance
> shifting goes, but I haven't done much testing with it yet. Has anyone
> seen/heard of anything like this with the MFJ-986 or any similar tuner?
>

> Thanks and 73,
> -- Dave, WA0TTN

1170. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 00:27:54 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <cbCdneSgDqPuZlyiXTWJkg@ctc.net>
Source record: 112716

>
> I have a 6m transverter on the way this week to use just in time for the
> CQWW contest this weekend... one problem NO ANTENNA!!
>
> So I picked up a very old Yagi, built in 1969, but still in great
condition.
> Its currently cut for the 40 MHz band, so I should be able to trim the
> elements down and change the spacing for a 3-element 6m antenna, right?
>

Too late for it now I guess. If you know the frequency of the antenna then
you can devide it by the frequency you want to operate on and change the
lengths and spacings by the same fraction. Then if gamma matched adjust the
gamma for a low swr.

1171. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 01:50:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f120d3e$1_2@corp.newsgroups.com>
Source record: 112717

Richard Harrison wrote:
> If I recall, he said a short on a line vitiates capacitance at that
> point. It shorts it out.

But there is NO actual short. The ratio of voltage to current is not
even zero. The ratio of voltage to current at a Z0-match point is Z0.

> The discontinuity is essential to the turnaround.

Exactly! That's how b1 = s11*a1 + s12*a2 gets to equal zero. s11*a1 and s12*a2
are both reflections from the physical impedance discontinuity. No "virtual
short" required. s11*a1 and s12*a2 are reflections that are equal in magnitude
and opposite in phase.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against
reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1172. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 02:30:53 UTC
From: Jason Dugas <kb5urq@hotmail.com>
Message-ID: <vh45fhl2pj7dd5@corp.supernews.com>
Source record: 112619

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:cbCdneSgDqPuZIyiXTWJkg@ctc.net...
> >
> > I have a 6m transverter on the way this week to use just in time for
the
> > CQWW contest this weekend... one problem NO ANTENNA!!
> >
> > So I picked up a very old Yagi, built in 1969, but still in great
> condition.
> > Its currently cut for the 40 MHz band, so I should be able to trim the
> > elements down and change the spacing for a 3-element 6m antenna, right?
> >
>
> Too late for it now I guess. If you know the frequency of the antenna
then
> you can devide it by the frequency you want to operate on and change the
> lengths and spacings by the same fraction. Then if gamma matched adjust
the
> gamma for a low swr.
>
>

Ralph,
You bring up a very valid point-- SCALING! This is an old trick I forgot
about, but I'm certainly glad you mentioned it.

One question-- this antenna has a gamma match-- how does the gamma match
change with respect to all of the other new dimensions?

1173. Re: 6m Yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 02:52:45 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <YLmcnUOl2Pf6ho-iXTWJkQ@ctc.net>
Source record: 112620

> You bring up a very valid point-- SCALING! This is an old trick I forgot
> about, but I'm certainly glad you mentioned it.
>
> One question-- this antenna has a gamma match-- how does the gamma match
> change with respect to all of the other new dimensions?
>
Not to sound too smart about it, but it beats me. I have only messed with one gamma match and it was on a 6 meter factory beam. I would guess that a good starting point would be to scale the shorting point and then adjust the capacitance for the lowest SWR and move the short again if necessary. The spacing of the gamma rod to the driven element will make a small differance also.

1174. Re: 6m J pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 02:58:54 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <r274hv888ggmeulm5dvmb2b9embckib13t@4ax.com>
Source record: 112687

On Sun, 13 Jul 2003 14:55:13 +0000 (UTC), "Barry"
<g7ute@btopenworld.com> wrote:

>Does any one have a design/diagram for a 6m J-pole co-linear?
>
>If not please suggest publication for details.
>
>

http://www.marktwain.net/~aschmitz/antennas/jpolecalc.html

1175. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 03:41:11 UTC
From: Dave <hnldc10take@thisoutworldnet.att.net>
Message-ID: <rDpQa.53541$3o3.3607146@bgtnsc05-news.ops.worldnet.att.net>
Source record: 112621

All,

Four informative responses, and I was afraid I was on the wrong newsgroup for the question I had. Thanks!

Dave

1176. Re: 6m J pole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 07:04:45 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <uvk4hvkrpm4na3cpsebh30bh488r1qehfl@4ax.com>
Source record: 112703

On 13 Jul 2003 17:18:30 GMT, fmmck@aol.com (Fred McKenzie) wrote:

><< >Does any one have a design/diagram for a 6m J-pole co-linear?
>>
>>If not please suggest publication for details.
>>
>>
>
>http://www.marktwain.net/~aschmitz/antennas/jpolecalc.html >>
>
>Bob-
>
>Where does the Co-Ax connect?

That, I don't know. I've only built a 2 meter "J", from instructions I
found on another page, and attached the coax about 4.5 inches from the
bottom.

Bob
k5qwg

>
>Based on other Two Meter J-Pole designs, I would guess that the Co-Ax connects
>about two or three inches from the bottom of the "J" matching section, with
>shield connected to the main element and center conductor connected to the
>matching arm. For Six Meters, perhaps the connection would be about six inches
>above the bottom. If you used stainless steel hose clamps to attach the cable,
>adjustment would be easy.
>
>73, Fred, K4DII

1177. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 07:58:08 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <8765m55ylr.fld@barrow.com>
Source record: 112622

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"Richard you can cut the bullshit out."
>
>Floyd claims to have measured microwave paths for 40 years. I`ve been
>doing it since 1960, so that`s about as long.
>
>I`ve made repeated measurements over a number of years on the same
>repeaters. During normal propagation, which is by far most of the time,
>path loss like other system losses is very constant.
>
>Of course there are periods of anomalous propagation. It depends on
>location, season, and time of day. It`s worse when the atmosphere is
>stagnant.

So now you say it's constant except for when it's not! Your designs
are within 1 dB except when they aren't.

I *am* impressed.

>I`m sure that marginal paths with insufficient clearance and other
>problems may have propagation which comes and goes. I`ve seen some, but
>I haven`t built any like that.

That's why I asked if you'd built many.

In fact it is quit common, and most paths have anomalies. Most of
course aren't very interesting. But others are. Suggesting your
designs have never collided with such an anomaly just means you
either didn't really do many or you're failing to recall them.

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1178. Feed Point for Delta Loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 12:08:42 UTC
From: Sgordon <noshoes2@yahoo.com>
Message-ID: <e3xQa.9939$Vx2.4290768@newssvr28.news.prodigy.com>
Source record: 112623

I just recently put up a Delta Loop Horizontal about 251 feet feeding it at a corner with ladder line into a 4:1 balun then coax intot eh shack.

Does anyone know if you move the feed point around a bit how it might change the radition pattern?

Any insight would be helpful. I will say so far it loads up great 10-80 meters and has been able to work some great DX barefoot.
--
Sincerely,
Scott Gordon
Phone: 1-888-428-6622
Pre-Recorded Call 1-888-295-2806
Yahoo Chat ID scott1gordon
AOL ID scott1gordon
http://best.justsaycash.com/ Just Say Cash
http://best.toxicfreehomes.com/ Is Your Home A Healthy Home?
http://best.smilestarters.com/ FREE e-Greeting Cards
==========

1179. Re: Sunair Automatic Tuner Info / Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 13:29:22 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vh5c38srf98q0a@corp.supernews.com>
Source record: 112624

A db here;
A db there;
Pretty soon you can tell the difference.
Especially when signals are in the noise and it makes the difference in
communication occurring or not.
Let us know what you find; my only experience with Sunair is in aircraft and
not that much power.
Certainly there must be commercial/military devices.
My preference is a resonant, matched antenna and no tuner.
73
H.
NQ5H

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vh367jsl6lfab2@corp.supernews.com...
> Interesting. Just the other day, we were told that 10 dB wasn't enough
> signal strength difference to worry about, and even ol' "Kurt Sturba"
> has said that a mere 18 dB isn't that big a deal. Now here we have
> someone who feels that an extra 1.5 to 2 dB is worth considerable
> trouble and expense. Just goes to show ya.
>
> Roy Lewallen, W7EL
>
> M Wilson wrote:
> > Hello...
> >
> > I am looking to install either a dipole, or just a long wire, and need
> > suffestions on a tuner. I am running an amp, 700-800 watts out max.
> > The SGC 235 has a max input of 500 watts (no, I am not lowering the
> > power, sorry). So, Who makes an automatic tuner that handles 1000
> > watts, and can be mounted outdoors, at the antenna feed-point?
> >
> > Sunair came to mind, any info on these, where to obtain, how to
> > control it, etc? Any others? Harris?
> >
> > Thanks
> >
> > MW
>

1180. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 13:41:50 UTC
From: richardharrison@webtv.net
Message-ID: <4756-3F12B31E-125@storefull-2317.public.lawson.webtv.net>
Source record: 112626

Floyd Davidson wrote:
"Suggesting your designs have never collided with such an anomaly just means you didn`t do many or you`re failing to recall them."

It means care was taken in path planning. Microwave propagation is very predictable. The only variable is the atmosphere and long statistical records are available which allow a design for a percent reliability, 99.99 out to the limit of your budget.

Of course, on any particular path, there will be fades on some foggy morning, but that doesn`t guarantee failure if you`ve planned for it. The phone company uses alternate routing. I`ve designed similar systems.

What I said was, the as-built hops performed as designed during normal propagation. That`s nearly all of the time. The received carrier power measures remarkably close to the predicted value nearly every time and if it doesn`t when the the alignment is complete, in my experience, it has been always due to a defect in the system, not in its design..

I have never had to go back and "beef up" a hop to obtain reliability, and I`ve put some hops in tough territory. The arithmetic is simple and so are the criteria.

Best regards, Richard Harrison, KB5WZI

1181. RESONANT ANTENNAS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 14:17:26 UTC
From: jder8745@aol.com
Message-ID: <20030714101726.00221.00000328@mb-m03.aol.com>
Source record: 112625

Howdy,

What's all this stuff about resonant antennas? Some great antenna designs do not use a resonant length.

73 de Jack, K9CUN

1182. Re: Flagpole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 14:22:17 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <k3f5hvo2jvptsn2m8orrqm8jmuiupd163f@4ax.com>
Source record: 112718

On Thu, 10 Jul 2003 19:16:40 -0400, "box90d" <box90d@cox.net> wrote:

>Looking for suggestions for flagpole design for Florida Mobile Home Park
>where flagpole OK, antennas not OK. Thought of the Diamond shaped flagpole
>configuration as a (CAP) top-loaded vertical. Anybody tried this? Note, my
>ground is probably terrible, and as a stealth antenna, radial (maybe 2) must
>be installed after dark Looking to run about 100W.
>
>TIA
>
>--tm
>
>WD4AON
>
>WD4AON@cox.net
>

For an inexpensive flagpole setup, see http://force12inc.com/

Bob
k5qwg

1183. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 14:34:01 UTC
From: richardharrison@webtv.net
Message-ID: <15368-3F12BF59-194@storefull-2313.public.lawson.webtv.net>
Source record: 112627

Cecil, W5DXP wrote:
"The ratio of voltage to current at a Zo-match point is Zo."

There is one voltage at a match point produced by the waves arriving from opposite directions.

There is one power, the power delivered by the transmitter, feeding the match point. The same power total flows from the match point to the load. It`s the forward power minus the reflected power.

Though there is but one voltage at the match point, it is clear that the currents in lines connected at the match are not equal because the Zo`s of the connected lines are not equal.

We need the reflected power to reconcile our mismatch. The mismatch is a catalyst that makes a reflection happen.

Say Zo is 150 ohms. 100 watts into Zo is 123.5 volts. 10 watts facing the 100 watts presents 38.7 volts. Power direction is determined by the 123.5 volt source, not by the 38.7 volt reflection, at the match point.

Best regards, Richard Harrison, KB5WZI

1184. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 15:12:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <beuh9f$33u$1@hercules.btinternet.com>
Source record: 112628

> What's all this stuff about resonant antennas? Some great antenna designs
do
> not use a resonant length.
>
>
All antenna 'systems' are resonant because they all present a resistive load
to the transmitter. QED.

1185. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 15:33:31 UTC
From: richardharrison@webtv.net
Message-ID: <21681-3F12CD4B-64@storefull-2316.public.lawson.webtv.net>
Source record: 112629

Floyd Davidson wrote:
"This thing (TV microwave relay station) was located 50 miles from town at 8500 foot up on a mountain top. They had a 50 foot tower (at the TV studios I suppose)----they turned it on and it worked great."

So, if it wasn`t broke, why did they fix it?

Floyd also wrote:
"But somebody had the smart idea to see what happens if they slide the dish down the tower to see if the signal would improve. It did!."

I wasn`t there, so I can only speculate, but I might have not been surprised by those results.

On a 50-mile path with plenty of mid-path clearance, propagation is similar to communications with a satellite. One difference at the Arizona latitude is the vertical angle the dish path makes with the Earth. The low angle the dish on the terrestrial path makes with the Earth, makes it vulnerable to reflections from the Earth. The higher the dish is placed, the more vulnerable it becomes. That`s a reason to go high / low on a reflective path, and not high/high. (Low/low won`t make the trip on most long paths due to Earth curvature).

Best regards, Richard Harrison, KB5WZI

1186. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 16:15:49 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <VGAQa.52646$GL4.13697@rwcrnsc53>
Source record: 112630

There's a world of difference between a resonant antenna and a resonant antenna system!!

BTW, is a Log Periodic Antenna, example Tennadyne T8, resonant across the frequency range of 13.5 MHz to 30 MHz?? No tuning required on any frequency between 13.5 and 30 MHz, and VSWR <1.7:1 across the range!

Deacon Dave, W1MCE
+ + +
Reg Edwards wrote:

>>What's all this stuff about resonant antennas? Some great antenna designs
>
> do
>
>>not use a resonant length.
>>
>>
>
> All antenna 'systems' are resonant because they all present a resistive load
> to the transmitter. QED.
>
>

1187. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 16:31:16 UTC
From: richardharrison@webtv.net
Message-ID: <10595-3F12DAD4-46@storefull-2314.public.lawson.webtv.net>
Source record: 112631

Reg, G4FGQ wrote:
"All antenna "systems" are resonant because they present a resistive load to the transmitter. QED."

Reg is right but there are of course exceptions.

"Standing wave antennas", those like dipoles which have refllections at their ends, are tuned to rid them of reactance which would oppose incoming antenna current.

If the antenna is operated off-resonance, it still works but with less vigor due to diminished current opposed by inherent reactance.

There is a class of "traveling wave antennas" which are terminated, not in an open or a short, but terminated in their Zo`s to eliminate reflection from their terminations. This avoids radiation which would be caused by the reflected energy and change the radiation pattern produced by the forward energy. It also eliminates a change in the antenna drivepoint impedance caused by arrival of reflected energy back at the drivepoint. This reduces drivepoint impedance change as the frequency is changed.. This can make an antenna more acceptable to a radio over a wider frequency range, but it is likely to make the antenna less efficient.

Best regards, Richard Harrison, KB5WZI

1188. Re: Any VEE Beam design info around ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 16:55:03 UTC
From: richardharrison@webtv.net
Message-ID: <10595-3F12E067-50@storefull-2314.public.lawson.webtv.net>
Source record: 112632

Douglas Snowden wrote:
"I am looking for information on the web ---."

A rhombic makes better use of the wire and space. That`s why they are more popular and users spring for the cost of 4 supports instead of 3.

Best regards, Richard Harrison, KB5WZI

1189. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 17:19:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <beuomn$i2v$1@titan.btinternet.com>
Source record: 112633

Very broadband antenna systems, such as log-periodics, are still resonant.
They are a collection of different-frequency resonant elements.

Another way of looking at it, a collection is broadband because as a whole
it has a very low resonant Q.

Resonant circuits have an effective Q or a collection of Q values even when
the impedance-frequency response is flat-topped. (As inside a double-tuned
455 KHz IF transformer can.)

At sufficiently high and sufficiently low frequencies the reactive component
of the input impedance always predominates.

The definition of resonance as being adjusted to present a resistive load to
the transmitter should not infringed.

Of course, it is quite possible to operate a transmitter with a non-resonant
load, ie., the load impedance having a reactive component in addition to the
essential resistive load. But if only for economic reasons this condition is
nearly always avoided.

Reg.

=====================================

"Dave Shrader" > There's a world of difference between a resonant antenna
and a resonant
> antenna system!!
>
> BTW, is a Log Periodic Antenna, example Tennadyne T8, resonant across
> the frequency range of 13.5 MHz to 30 MHz?? No tuning required on any
> frequency between 13.5 and 30 MHz, and VSWR <1.7:1 across the range!
>
> Deacon Dave, W1MCE
> + + +
> Reg Edwards wrote:
>
> >>What's all this stuff about resonant antennas? Some great antenna
designs
> >
> > do
> >
> >>not use a resonant length.
> >>
> >>
> >

> > All antenna 'systems' are resonant because they all present a resistive
load
> > to the transmitter. QED.
> >
> >
>

1190. Re: Snap-on choke hurts shielded loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 17:22:29 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307140922.4d5871bc@posting.google.com>
Source record: 112634

donut <none@none.com> wrote in message news:<Xns93B6B0655AD0Edonut@216.102.43.227>...
> Loopfan <bgreer1@earthlink.net> wrote in
> news:1mXPa.43439$C83.3440878@newsread1.prod.itd.earthlink.net:
>
> > Unless I misunderstand how ferrite-chokes work, this does seem to
> > physically point out that the shield is the actual antenna.
>
>
> How can the shield be the antenna when it's connected to RF ground?

A time-varying (RF) magnetic field generates an EMF in any loop
surrounding it.

(Faraday's Law of Magnetic Induction: there is an EMF proprotional to
the rate of change of the magnetic field enclosed by any closed line.
Ohm's law: the voltage drop in a resistance is proprotional to the
resistance and to the current. Kirchoff's Voltage Law: the sum of
voltage drops around a closed loop is equal to the sum of EMFs in the
same loop. Edwards' Law Quotation Law: Anyone quoting laws is not to
be taken too seriously. Or something like that. So by making the
loop a conductor with a gap, the EMF given by Faraday's law is
delivered almost completely to the gap. Doesn't matter if the loop
conductor is grounded at some point or not. Note also that in the
presence of a time-varying magnetic field, the voltage you measure
between two points depends on the path you take.)

Cheers,
Tom

1191. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 17:42:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f12ec73$1_5@corp.newsgroups.com>
Source record: 112635

Richard Harrison wrote:
> Say Zo is 150 ohms. 100 watts into Zo is 123.5 volts.

I get 122.5 volts. :-)

> 10 watts facing
> the 100 watts presents 38.7 volts. Power direction is determined by the
> 123.5 volt source, not by the 38.7 volt reflection, at the match point.

Essentially all you are saying is that net energy flows from the source
to the load. I agree but it has nothing to do with "facing off". Coherent
voltage waves flowing in opposite directions are unaffected by each other.
Coherent voltage waves flowing in the same direction merge into one wave.
The events that happens at an impedance discontinuity are reflections which
causes coherent waves to flow in the same direction and therefore merge. It
is explained in my part 1 article on my web page.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against
reality, is primitive and childlike ..." Albert Einstein

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1192. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 17:45:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f12ed25_5@corp.newsgroups.com>
Source record: 112636

Reg Edwards wrote:
> All antenna 'systems' are resonant because they all present a resistive load
> to the transmitter. QED.

Actually, when the transmitter circuitry folds back, it means that the
antenna system is not resonant. When I change bands with my screwdriver
and start tuning, my antenna system is certainly not resonant.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against
reality, is primitive and childlike ..." Albert Einstein

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1193. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 18:20:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh5t43irm9fk7d@corp.supernews.com>
Source record: 112637

Richard Harrison wrote:
> . . .
> If the antenna is operated off-resonance, it still works but with less
> vigor due to diminished current opposed by inherent reactance.
> . . .

This is true only if no effort has been made to match the antenna to the transmitter. If it's matched, it will have the same current and "vigor" as a resonant antenna. Assuming negligible loss, if 100 watts is applied to resonant and non-resonant antennas by any means, 100 watts will be radiated from each.

Roy Lewallen, W7EL

1194. Re: RESONANT ANTENNAS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 19:12:13 UTC
From: jgboyles@aol.com
Message-ID: <20030714151213.29346.00000254@mb-m15.aol.com>
Source record: 112639

>What's all this stuff about resonant antennas? Some great antenna designs do
>not use a resonant length.
>
>73 de Jack, K9CUN

Hi Jack,
When you posed this same query back in June of 1999, (myth od the resonant antenna) you got 193 responses. You trying to beat your own record?
That was about the time I happened upon this Newsgroup, I really enjoyed that particular thread. I have gone back and re-read it a couple of times.
73 Gary N4AST

1195. Re: Snap-on choke hurts shielded loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 19:30:26 UTC
From: donut <none@none.com>
Message-ID: <Xns93B87ED02B392donut@216.102.43.227>
Source record: 112640

k7itm@aol.com (Tom Bruhns) wrote in
news:3200347.0307140922.4d5871bc@posting.google.com:

> So by making the
> loop a conductor with a gap, the EMF given by Faraday's law is
> delivered almost completely to the gap. Doesn't matter if the loop
> conductor is grounded at some point or not.

Thank you for your clear and concise answer. The part quoted above is what
was missing from my viewpoint.

As some seem to have concluded, I was not trying to be facetious.

1196. Re: rsgb for £1.05 or $2 for a year open to all

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 19:46:40 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030714154640.14728.00000377@mb-m07.aol.com>
Source record: 112641

Spamming the newsgroups again, eh? Guess another email to your ISP is in order.

1197. Feeding two Yagi's from One Coax.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 20:09:01 UTC
From: billy8156@yahoo.com
Message-ID: <d8c04b3f.0307141209.4633bbdb@posting.google.com>
Source record: 112642

I have 220 MHz and 440 MHz antennas. They are mounted on the same mast, the 440 ontop and about 3' under that is the 220. I would like to feed both antennas with one piece of coax. How can I do this? I'm not interested in SWR as they will not be used to transmit, only for receive. I want to do this with as little loss as possible as the stations I want to receive are located a long distance away.

Bill

1198. Re: Feeding two Yagi's from One Coax.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 20:18:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1310fc_7@corp.newsgroups.com>
Source record: 112643

Billy wrote:
> I have 220 MHz and 440 MHz antennas. They are mounted on the same
> mast, the 440 ontop and about 3' under that is the 220. I would like
> to feed both antennas with one piece of coax. How can I do this?
> I'm not interested in SWR as they will not be used to transmit, only
> for receive. I want to do this with as little loss as possible as the
> stations I want to receive are located a long distance away.

Just parallel them. The 440 should have a high impedance on 220 and the
200 should have a high impedance on 440. The frequencies that you have
to worry about are the 3x frequencies, i.e. 148 x 3 = 444.
--
73, Cecil http://www.qsl.net/w5dxp

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1199. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 20:27:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F131216.7A1BD30C@uci.edu>
Source record: 112645

W5DXP wrote:
>
> Jim Kelley wrote:
> > I've never disputed the solutions produce the same number. I disputed
> > the validity of the approach you took to arrive at the equation.
>
> Here's a question for you, Jim. How much power is transferred from the
> mismatched load rearward by Pref2?

First I have to know where it is being transferred. I don't see two ends of a path. Is there a load resistor hiding in a circulator somewhere? Is the 33.33 watts extra power that I could drive another antenna with, but is otherwise going unused?

Or is it instead, simply a field that is excited by the boundary conditions at the load that is being measured.

> source---50 ohm feedline---+---150 ohm feedline---load
> Pfwd1=200W --> Pfwd2=133.33W -->
> <-- Pref1=100W <-- Pref2=33.33W
>
> If, as you have asserted, Pref2 can transfer zero watts when it measures
> 33.33W, can it also transfer 100W when it measures 33.33W?

The meter measures voltage, assumes a transfer of energy, and displays power based on that assumption.

73, ac6xg

1200. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 20:35:12 UTC
From: richardharrison@webtv.net
Message-ID: <23395-3F131400-18@storefull-2315.public.lawson.webtv.net>
Source record: 112644

Roy, W7EL wrote:
"This is true only if no effort has been made to match the antenna to the transmitter."

It is true with every transmitter which occupies more than zero bandwidth. Reactance is zero at one point in the frequency spectrum. Off-resonance, an antenna system accepts less current than it does exactly on resonance. But, the difference is usually less than 1 db.

I wrote that if the antenna is operated off-resonance (excited by a frequency other than its resonant frequency) it works but with less vigor etc.

If the antenna`s power factor has been externally corrected for some frequency other than its natural resonant frequency, then it is resonanat at a new frequency. Its vigor will not be subdued by inherent reactance at the new resonant frequency.

When I said an antenna operated off-resonance works with less vigor, I tried for a statement true with a solid rod without connections and in free-space, a receiving antenna, and a transmitting antenna, all operated at a frequency other than their resonant frequencies. All are transmitting antennas because they all radiate when excited, no matter how the excitation is delivered.

I think I succeeded in saying it correctly but failed in saying it well if it was misunderstood.

Best regards, Richard Harrison, KB5WZI

1201. Re: Feeding two Yagi's from One Coax.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 21:01:29 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <UJOdnZK779Kzh46iRTvUrg@crocker.com>
Source record: 112646

"Billy" <billy8156@yahoo.com> wrote in message
news:d8c04b3f.0307141209.4633bbdb@posting.google.com...
> I have 220 MHz and 440 MHz antennas. They are mounted on the same
> mast, the 440 ontop and about 3' under that is the 220. I would like
> to feed both antennas with one piece of coax. How can I do this?
> I'm not interested in SWR as they will not be used to transmit, only
> for receive. I want to do this with as little loss as possible as the
> stations I want to receive are located a long distance away.
>
> Bill
the 'proper' way to do this is with duplexers. these are basically bandpass filters that only pass the frequency you want from each antenna onto the single coax and prevent interaction between the two antennas.

the cheap way is to just connect the two of them with a T connector and hope for the best...

the experimenters way is to cut the coax between the two antennas and the T connector to minimize interaction. for this i would start with 1/4 wave at 440mhz feeding the 220 antenna, and 1/4 wave at 220mhz feeding the 440 antenna.... listen to a source on 440 with just that antenna and connect the 220 antenna and see if the signal drops, if it does add another 1/4 wave at 440mhz to the 220 antenna feed and try again, if that doesn't fix it try removing 1/8 wave... then hook the 220 antenna to the receiver and listen to a signal on it, connect the 440 antenna and see if the signal drops too much, if it does add 1/4 wave on 220mhz to it's feed line and try again... etc, etc, etc... if you have access to a network analyzer you can save lots of time. make it fancier by adding stubs and you end up building a duplexer in coax.

1202. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 21:09:16 UTC
From: richardharrison@webtv.net
Message-ID: <23393-3F131BFC-223@storefull-2315.public.lawson.webtv.net>
Source record: 112648

Cecil, W5DXP wrote:
"I get 122.5 volts."

Dang cheap Chinese calculator operator!
Cecil is correct.

Cecil also wrote:
"Coherent voltage waves flowing in opposite directions are unaffected by each other."

I agree, except at an impedance bump which shakes things up. Incoherent voltage waves flowing in opposite directions are also unaffected by each other. :-)

Best regards, Richard Harrison, KB5WZI

1203. Re: Flagpole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 21:17:41 UTC
From: wp20032@aol.com
Message-ID: <20030714171741.29166.00000266@mb-m15.aol.com>
Source record: 112647

>>Looking for suggestions for flagpole design for Florida Mobile Home Park
>>where flagpole OK, antennas not OK. Thought of the Diamond shaped flagpole
>>configuration as a (CAP) top-loaded vertical. Anybody tried this? Note, my
>>ground is probably terrible, and as a stealth antenna, radial (maybe 2) must
>>be installed after dark Looking to run about 100W.
>>
>>TIA
>>
How about a "Gotham" vertical. This was about 20 ft. of vertical radiator, mounted on an insulator (often, the pipe was just placed on top of a coke bottle). A coil connected from the bottom of the radiator to ground (either a simple ground rod, or better with several radials). A tap was used to bring the coil/radiator to resonance. Another tap was used near the ground end of the coil to find about 50 ohms of match for the coax.

The last version of this antenna that I used was constructed from a flagpole bought at Sears.

--Wayne

1204. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 21:31:58 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87y8z03icx.fld@barrow.com>
Source record: 112649

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"This thing (TV microwave relay station) was located 50 miles from town
>at 8500 foot up on a mountain top. They had a 50 foot tower (at the TV
>studios I suppose)----they turned it on and it worked great."
>
>So, if it wasn`t broke, why did they fix it?
>
>Floyd also wrote:
>"But somebody had the smart idea to see what happens if they slide the
>dish down the tower to see if the signal would improve. It did!."
>
>I wasn`t there, so I can only speculate, but I might have not been
>surprised by those results.
>
>On a 50-mile path with plenty of mid-path clearance, propagation is
>similar to communications with a satellite. One difference at the
>Arizona latitude is the vertical angle the dish path makes with the
>Earth. The low angle the dish on the terrestrial path makes with the
>Earth, makes it vulnerable to reflections from the Earth. The higher the
>dish is placed, the more vulnerable it becomes. That`s a reason to go
>high / low on a reflective path, and not high/high. (Low/low won`t make
>the trip on most long paths due to Earth curvature).

A 50 foot tower on top of an 8400' mountain. What are you
talking about high/low etc etc. I wasn't there when the
decision was made to put it on a 50 foot tower, and neither you
nor I have any idea why that was done. Perhaps the topo maps
were wrong, and some obstacle they assumed was there didn't
actually exist. Perhaps the engineer made a mistake. I don't
know and you don't know. But, you don't suppose the engineer
knew exactly what he was doing, eh???

A 40 foot change in elevation suggests there simply were no
obstacles, so one has to wonder what the 50 foot tower was
supposed to accomplish... other than allow a range of adjustment
to find the best point for signal strength. Because this was
not a 50 mile shot, it was much closer to 100 miles and no doubt
they were very interested in optimizing the signal strength.
With no obstacles, not even earth bulge, calculating reflections
isn't so easy... unless you move the antenna vertically to find
the right position.

But, it doesn't emulate "a satellite" shot even in the slightest.
Or, not for real satellite shots at least.

E.g., the look angle for a geosynchronous satellite here is only
10-12 degrees or less depending on where the satellite is. I
don't agree at all that a 50 mile microwave path with no
obstacles is approaching similarity to a satellite shot! Some
satellite links have *less* clearance.

Of course, your exposure to satellites might not be that great.

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1205. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 22:01:59 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bev98n$ge0$1@hercules.btinternet.com>
Source record: 112650

> Actually, when the transmitter circuitry folds back, it means that the
> antenna system is not resonant.
==========

Wrong ! The antenna 'System' IS resonant, by definition, if it has a purely resistive input impedance. If that interfering nuisance of your fold-back circuit springs into action then it means the pure input resistance is something other than 50 ohms. But it is still resonant.

Actually, in YOUR case, the antenna is NEVER resonant. You make sure the antenna is NOT resonant by making the whole system resonant by varying the length of your transmission line.

Reg,

1206. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 22:17:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f132cf0_8@corp.newsgroups.com>
Source record: 112651

Reg Edwards wrote:
>>Actually, when the transmitter circuitry folds back, it means that the
>>antenna system is not resonant.
>
> ==========
>
> Wrong ! The antenna 'System' IS resonant, by definition, if it has a purely
> resistive input impedance. If that interfering nuisance of your fold-back
> circuit springs into action then it means the pure input resistance is
> something other than 50 ohms. But it is still resonant.

Reg, the chances of a foldback being caused by a resistive antenna is
about 1 in 360. Actually less than that because the transmitter will
not fold back between 25 ohms and 100 ohms.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against
reality, is primitive and childlike ..." Albert Einstein

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1207. Re: Conservation of Energy

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 22:19:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f132d44$1_8@corp.newsgroups.com>
Source record: 112652

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "I get 122.5 volts."
>
> Dang cheap Chinese calculator operator!
> Cecil is correct.
>
> Cecil also wrote:
> "Coherent voltage waves flowing in opposite directions are unaffected by
> each other."
>
> I agree, except at an impedance bump which shakes things up.

Yes, and what we are discussing is exactly how an impedance bump
shakes things up.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against
reality, is primitive and childlike ..." Albert Einstein

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1208. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 22:23:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f132e6c_8@corp.newsgroups.com>
Source record: 112653

Jim Kelley wrote:
> First I have to know where it is being transferred.

This is the basic flaw in your argument. The power goes where it goes.
That you need to know something indicates that you believe what you
know dictates reality. Sorry, Jim, you are NOT that powerful. Mother
Nature doesn't care what you know or don't know. Reality is exactly
the same either way and will be exactly the same way after you are
six feet under. Why do you think you are so important that what you
know affects reality?
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

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1209. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 23:12:14 UTC
From: jgboyles@aol.com
Message-ID: <20030714191214.29240.00000336@mb-m15.aol.com>
Source record: 112654

> If that interfering nuisance of your fold-back
>circuit springs into action then it means the pure input resistance is
>something other than 50 ohms.

Hi Reg,
That foldback circuit is an interfering nuisance agreed, but it comes in handy at times. My homebrew mobile antenna is difficult to keep tuned, much less in one piece doing 100 km/hr down the US Interstate system. My HF transceiver folds back if things are not right with the antenna system. The fold back circuits tell me I need to do something with the mobile antenna, before I smoke the final semiconductors in my rig. It doesn't tell me what I need to do, I use other stuff for that. I used a couple of your programs in the design of this beast, Thanks!
73 Gary N4AST

1210. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-14 23:26:09 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F133C11.AA1D3C4D@uci.edu>
Source record: 112655

W5DXP wrote:
>
> Jim Kelley wrote:
> > First I have to know where it is being transferred.
>
> This is the basic flaw in your argument. The power goes where it goes.

So, where does the 33.33 watts in your question go?

73, ac6xg

1211. Re: TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 00:35:03 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <opi6hvk434l22mcn178fu3k8b4rdkvsc6e@4ax.com>
Source record: 112656

On Mon, 7 Jul 2003 12:42:58 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>You do not want a slitter. Trust me. You will get ghosts, plus lose half
>your signal.
>
>Tam/WB2TT
>"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
>news:bec4t1$3dtsc$1@ID-134747.news.dfncis.de...
>> Yes you can combine the antennas with a splitter.
>> That is why they are called splitter/combiners.
>> The bad news is that you get almost one half the
>> energy out of a splitter/combiner that you put in.
>> There is a nearly 3db (50%) insertion loss. If

I'm used combiners with TV antennas in a stacked array. Two antennas
(on TV) is far better than one. Now if there was a 3 db loss in a
combiner, I would gain nothing as stacking gives about 3 db gain (on a
good day, down hill, and with a tail wind)

>> you had two antennas, each pointed in a different
>> direction you might solve your problem. The rotor
>> is probably the most aestically pleasing solution,

It can be a bit of a problem if your antennas are below the top of the
tower, but I used an arm with the rotor mounted out from the side of
the tower by about three feet and get 240 degrees of rotation. It
just so happens all available TV stations are within that 240 degree
arc.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

>.....
>

1212. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 01:16:20 UTC
From: richardharrison@webtv.net
Message-ID: <15369-3F1355E4-74@storefull-2313.public.lawson.webtv.net>
Source record: 112658

Floyd Davidson wrote:
"But, it doesn`t emulate "a satellite" shot in the slightest."

A satellite is a microwave repeater in the sky which is usually not susceptible to earth reflections.

Terrestrial microwave paths are often designed to minimize earth reflection.

Reason is, on a long path, the lengths of the direct ray and the Earth reflected ray are almost the same. Reflection reverses the phase of the reflected ray so that the reflected ray detracts from the direct ray when they combine at the receiver. They arrive out-of-phase, at least at some antenna altitudes.

The phase of the signal undergoes 180-degrees of phase change as we examine the signal either forward or backwards from the plane of the signal. That is to say, the phase of the signal is a function of distance along the path. When a second signal source is created by Earth reflection on the path, the combination of the direct and reflected rays produces strata of stronger and weaker signal intensities as altitude changes. No reflected signal, no significant variation of signal with altitude, given sufficient path clearance. This is a worthwhile design goal.

No matter which end of the TV relay path was varied to produce a significant signal strength change, the attenuation at the higher elevation was probably caused by an Earth reflection. Another reflecting surface near the microwave path could have been the reflector. I`ve seen that in the city canyons I`ve had to squeeze signals through. But on most paths, the Earth is the most likely reflector.

Best regards, Richard Harrison, KB5WZI

1213. Re: TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 02:14:10 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <EsOdnSBRiogS_o6iU-KYgw@comcast.com>
Source record: 112659

Roger,

He is talking about having the two antennas pointed in different directions.
Bad news for ghosts.

Tam/WB2TT

1214. Re: Feed Point for Delta Loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 02:27:55 UTC
From: Niittymaa Family <niittyma@sympatico.ca>
Message-ID: <HEJQa.2263$eP6.347032@news20.bellglobal.com>
Source record: 112660

Scott,

Check out this website that may give you some ideas - W4RNL has a lot of
good information on his website.
I seem to remember the title as HO-HO-HOHPL's
http://www.cebik.com/atl1.html

..... Al, VA3KAI

"Sgordon" <noshoes2@yahoo.com> wrote in message
news:e3xQa.9939$Vx2.4290768@newssvr28.news.prodigy.com...
> I just recently put up a Delta Loop Horizontal about 251 feet feeding it
at
> a corner with ladder line into a 4:1 balun then coax in to the shack.
>
> Does anyone know if you move the feed point around a bit how it might
change
> the radiation pattern?
>
> Any insight would be helpful. I will say so far it loads up great 10-80
> meters and has been able to work some great DX barefoot.
> --
> Sincerely,
> Scott Gordon
> Phone: 1-888-428-6622
> Pre-Recorded Call 1-888-295-2806
> Yahoo Chat ID scott1gordon
> AOL ID scott1gordon
> http://best.justsaycash.com/ Just Say Cash
> http://best.toxicfreehomes.com/ Is Your Home A Healthy Home?
> http://best.smilestarters.com/ FREE e-Greeting Cards
> ==========
>
>

1215. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 03:06:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1370b5_8@corp.newsgroups.com>
Source record: 112661

Jim Kelley wrote:
> So, where does the 33.33 watts in your question go?

The 33.33W is associated with the s-parameter term, a2. So it splits
into s12*a2 and s22*a2. s12*a2 becomes associated with b1 and s22*a2
becomes associated with b2.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1216. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 03:13:24 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87he5o32jv.fld@barrow.com>
Source record: 112662

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"But, it doesn`t emulate "a satellite" shot in the slightest."
>
>A satellite is a microwave repeater in the sky which is usually not
>susceptible to earth reflections.

As noted, the look angle for a geosynchronous satellite here is
about 12 degrees if the satellite is directly south. What makes
you think there would be no earth reflections? In particular
for a satellite that is not directly south, and is, for example,
less than 6 degrees above the horizon?

Think that over in terms of the beamwidth (and side lobes too!)
on a 4 meter dish used for C band. And if you want a real excersize
in what is interesting, think about what that does in relationship
to sun outages...

>Terrestrial microwave paths are often designed to minimize earth
>reflection.

If you have obvious reflection points and/or knife edges
creating Fresnel zones, yes. But when you have two sites
sitting on mountain tops with a valley floor 6000 feet below
them, it may not be something you can calculate accurately.
Instead, with a long path, one has to design a system that can
be configured as needed... Perhaps, for example, by having 50
feet of vertical adjustment available for the antenna location.

>Reason is, on a long path, the lengths of the direct ray and the Earth

What does "on a long path" have to do with it? All that it
requires is that one path be a 1/2 wavelength longer than the
other path. Both can be quite short.

Where do you get off offering these never quite correct lectures
that never quite hit the point?

>The phase of the signal undergoes 180-degrees of phase change as we
>examine the signal either forward or backwards from the plane of the
>signal.

I think you can dispense with the lecture mode Richard, most 12
year olds that have knack for science can see that from looking
at what happens when rocks are tossed into a pond.

>That is to say, the phase of the signal is a function of
>distance along the path.

Actually it is a function of time, not distance. The same
distance could produce vastly different results.

>When a second signal source is created by Earth
>reflection on the path, the combination of the direct and reflected rays
>produces strata of stronger and weaker signal intensities as altitude
>changes. No reflected signal, no significant variation of signal with
>altitude, given sufficient path clearance. This is a worthwhile design
>goal.

Yes it is. Did you think anybody reading this thread did not
yet know that?

>No matter which end of the TV relay path was varied to produce a
>significant signal strength change, the attenuation at the higher
>elevation was probably caused by an Earth reflection. Another reflecting
>surface near the microwave path could have been the reflector. I`ve seen

However, as noted, this was a long path, with *extremely* high
elevations for both antennas. Think about it for awhile.

>that in the city canyons I`ve had to squeeze signals through. But on
>most paths, the Earth is the most likely reflector.

Somehow I suspect that for what was described, we can safely
ignore tall buildings as possible sources of reflections, don't
you think?

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1217. Re: Any VEE Beam design info around ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 03:35:56 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <avudnXC6hu8L646iXTWJhQ@comcast.com>
Source record: 112663

Interesting design on the last page of ARRL's Wire Antenna Classics. It's a coax fed monobander, made according to formula with 90 degrees between legs that are 1.25 WL long. As I recall, the feedpoint impedence is 100 ohms, so the designer connected a second vee in parallel back-to-back to get a 50 ohm feedpoint. One support mast 0.25 WL high. The elements end near ground level. By use of a single dpdt relay at the feedpoint the beam can be steered 90 degrees. It's bidirectional, so f/s is good but f/b is zero. I believe the designer described it as an "inside out rhombic."

It would be interesting to hear from anyone who has direct experience with this design.

Tom, N3IJ

"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message news:vh33p9t588da12@corp.supernews.com...
> I am looking for something on the web that describes the optimum
> angles between wires, etc. I am not talking about inveted dipole
> beams, but a pair of horizontal wires (or sloping wires) that are at
> a 30 degree or so angle, usually fed with open wire line.
>
> Thanks
>
> Doug N4IJ
>
>

1218. Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 03:41:53 UTC
From: Paul@Rasdoc.com
Message-ID: <ljs6hv4inq0ie6a3elhaa79d34l6odjtnc@4ax.com>
Source record: 112664

I would like to build a 908Mhz turnstile.

How does one normally go about testing and adjusting an
antenna at that high of frequency?

For a lower frequency I can hook up a MFJ antenna analizer or an SWR
meter,.

I want to build a 900Mhz antenna with a hemispherical pattern.
It is going on an RC plane, so a normal vertical style antenna will
be problematic as it will have a null straight down.

So I though a turnstile antenna would be perfect.

Any advise on designing such a device?

Paul Kl7JG

1219. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 05:06:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ls27hv0tjmttmh4kr6odgkq78kt7efv7ct@4ax.com>
Source record: 112665

On Mon, 14 Jul 2003 20:41:53 -0700, Paul@Rasdoc.com wrote:

>I would like to build a 908Mhz turnstile.
>
>How does one normally go about testing and adjusting an
>antenna at that high of frequency?
>
>
>For a lower frequency I can hook up a MFJ antenna analizer or an SWR
>meter,.
>
>I want to build a 900Mhz antenna with a hemispherical pattern.
>It is going on an RC plane, so a normal vertical style antenna will
>be problematic as it will have a null straight down.
>
>So I though a turnstile antenna would be perfect.
>
>
>Any advise on designing such a device?
>
>
>Paul Kl7JG
>

Hi Paul,

1. build a 90.8MHz version and scale it down;
2. build an Inverted-F
see:
http://www.qsl.net/kb7qhc/antenna/Inverted%20F/index.htm

73's
Richard Clark, KB7QHC

1220. 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 05:32:12 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307142132.772dc565@posting.google.com>
Source record: 112666

Hello,

I'd like to start a discussion (or light a brush-fire, as the case may be for this NG!), about what a 50 Ohm impedance match really means.

On our trusty Smith Chart, assuming it is normalized to 50 Ohms, the center is considered and labeled as the "real resistive" 50 match point. In fact, the entire middle horizontal line is the "real" part of the impedance.

I'm sure many of you have read the popular description/model of a transmission line as an infinite chain of alternating series inductors with shunt capacitors, with the resulting characteristic impedance as Z=(L/C)**1/2, where the L and C are distributed inductances and capacitances.

So, in theory, if you have achieved a perfect match with your antenna, you will have matched the impedance to the 377 Ohms of free space, you will not have reflections at the matching point, and the energy will radiate in whatever pattern you have designed for.

The funny thing about this, is that you cannot say that the 50 Ohms in the center of the chart is a "resistive" 50 Ohms, as there is very little real resistance in the average antenna. This "resistive" 50 Ohms is really what people call the "radiation" resistance, which is something of a misnomer again, because this is trying to equate the successful impedance matching and subsequent non-reflected EM radiation with a truly real resistance like an ideal dummy load.

Of course, it's well known that a truly real resistive 50 Ohm dummy load should appear exactly like a properly matched antenna to the transmitter.

Why do i ask all this? Well, if you believe that complex impedance measurements (series equivalent) by MFJ antenna analyzers are not completely inaccurate, then it appears that two 1/4 watt 100 Ohm resistors in parallel (lead lengths short) are a much more consistent 50 Ohms over the VHF band than almost all the higher power dummy loads we have tested.

Problem is, the high power dummy loads will vary from 52 to 45 "real" ohms depending on the frequency, with the "real" part of the impedance getting lower with increasing frequency, so it doesn't seem to be a "skin effect". The spread gets much worse when you put a 3' jumper coax in between, and even more worse when you add a power/swr meter. Then the "real" Ohms will be from 65 to 35 ohms, with the max

and mins not correlating with frequency at all, and the stray reactances will be much more too, but just as varied with frequency. So much for "50 ohm" jumper cables! I suppose they are as close as they can get them for a particular price.

My theory is that the "real" part of the impedance is mainly the truly resistive 50 ohms of the dummy load at low frequencies around 10 MHz or so...but as you go up in frequency, the parasitics of the dummy load and the coax jumper cable will cause "radiation" resistance to be mixed in with this truly real 50 ohms, giving us readings all over the map.

What do you folks think?

Dr. Slick

1221. 40 m inverted vee question?????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 06:38:32 UTC
From: capo <Pr1@for.net>
Message-ID: <3F13A168.552A0A16@for.net>
Source record: 112570

My 40 m reson. iv used to be completely horizontal at 30 ft.

I had to bend one end (while leaving the other horizontal) at
about a 45 deg angle to about 10 ft above the ground.

The SWR seems to be higher. 1.5:1 at its lowest. I can't remember
what it was before but I know it wasn't this high.

Will this cause an efficiency problem or any other?????

1222. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 06:49:36 UTC
From: Helmut Wabnig <hXwabnig@aXon.at>
Message-ID: <uq87hv0t63m9kbk5nmrl25s1k919ptcovs@4ax.com>
Source record: 112667

On Mon, 14 Jul 2003 22:01:59 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>> Actually, when the transmitter circuitry folds back, it means that the
>> antenna system is not resonant.
>==================================
>
>Wrong ! The antenna 'System' IS resonant, by definition, if it has a purely
>resistive input impedance. If that interfering nuisance of your fold-back
>circuit springs into action then it means the pure input resistance is
>something other than 50 ohms. But it is still resonant.
>
>Actually, in YOUR case, the antenna is NEVER resonant. You make sure the
>antenna is NOT resonant by making the whole system resonant by varying the
>length of your transmission line.
>---

Hi Troll,
let's talk about measuring antenna impedance.

I have got a MFJ 269 which clearly shows that none
of my antennas is purely resistive, or resonant.

w.

1223. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 06:52:19 UTC
From: Helmut Wabnig <hXwabnig@aXon.at>
Message-ID: <8397hvkqcnetdio6h1hdvvjcic3fa1tgcp@4ax.com>
Source record: 112569

On 14 Jul 2003 22:32:12 -0700, radio913@aol.com (Dr. Slick) wrote:

>.............
> My theory is that the "real" part of the impedance is mainly the
>truly resistive 50 ohms of the dummy load at low frequencies around 10
>MHz or so...but as you go up in frequency, the parasitics of the dummy
>load and the coax jumper cable will cause "radiation" resistance to be
>mixed in with this truly real 50 ohms, giving us readings all over the
>map.
>
>
> What do you folks think?

Where do I get a "good" dummy load?

w.

1224. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 06:54:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <r877hvs1u7qj5l37vpdscdd1lorg4mr8n0@4ax.com>
Source record: 112668

On 14 Jul 2003 22:32:12 -0700, radio913@aol.com (Dr. Slick) wrote:
snip
> So, in theory, if you have achieved a perfect match with your
>antenna, you will have matched the impedance to the 377 Ohms of free
>space, you will not have reflections at the matching point, and the
>energy will radiate in whatever pattern you have designed for.

A strange mix of notions, some valid, others fanciful interpretation.

>
> The funny thing about this, is that you cannot say that the 50
>Ohms in the center of the chart is a "resistive" 50 Ohms, as there is
>very little real resistance in the average antenna.

You might not, others would, and there is nothing "funny" going on in
the first place. As to "real" resistance, that is merely semantics
and does not illuminate just what you want to talk about.

>This "resistive"
>50 Ohms is really what people call the "radiation" resistance, which
>is something of a misnomer again,

It is only a misnomer that you brought to the table. There is, by and
large, no antenna that is by nature 50Ohms in the first place, but
there are many antennas that have been cobbled together to present
50Ohms - not the same thing; but also hardly distinctive either,
except to the semanticist. Radiation resistance is NOT a function of
drive point impedance even if the two share the same value for some
obscure design.

>
snip
>
> Why do i ask all this? Well, if you believe that complex
>impedance measurements (series equivalent) by MFJ antenna analyzers
>are not completely inaccurate, then it appears that two 1/4 watt 100
>Ohm resistors in parallel (lead lengths short) are a much more
>consistent 50 Ohms over the VHF band than almost all the higher power
>dummy loads we have tested.

"We?"

You presume MFJ is not completely inaccurate? That is a wordy long
way around the barn. And this is a function of "if you believe?" Why
not simply state what YOU believe and leave out the tea leaf reading?

>
> Problem is, the high power dummy loads will vary from 52 to 45
>"real" ohms depending on the frequency, with the "real" part of the
>impedance getting lower with increasing frequency, so it doesn't seem
>to be a "skin effect". The spread gets much worse when you put a 3'
>jumper coax in between, and even more worse when you add a power/swr
>meter. Then the "real" Ohms will be from 65 to 35 ohms, with the max
>and mins not correlating with frequency at all, and the stray
>reactances will be much more too, but just as varied with frequency.
>So much for "50 ohm" jumper cables! I suppose they are as close as
>they can get them for a particular price.

You have a lot of supposition going on to this point. Most of it is
more likely due to the difficulty of performing an accurate RF power
measurement in the first place.
>
>
> My theory is that the "real" part of the impedance is mainly the
>truly resistive 50 ohms of the dummy load at low frequencies around 10
>MHz or so...but as you go up in frequency, the parasitics of the dummy
>load and the coax jumper cable will cause "radiation" resistance to be
>mixed in with this truly real 50 ohms, giving us readings all over the
>map.
>
>
> What do you folks think?
>
>
>Dr. Slick

Hi OM,

Theories abound and I have a 50Ohm dummy load that is fairly flat from
DC to 1GHz (confirmed by calibration to be less than 1:1.2 anywhere)
that I bought for $50. True, it is actually 52Ohms (the actual
standard of post WW2 Electronics), but its frequency characteristics
are just fine. More so than your experience in either obtaining
accuracy, or confirming it, or both.

How you make the leap to "radiation" resistance to make up the
difference in your observations is inventive, but not compelling; and
certainly lacks considerable discussion.

So, to respond directly to the subject:
>50 Ohms "Real Resistive" impedance a Misnomer?
Yes, as the nominative you employ.

73's
Richard Clark, KB7QHC

1225. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 07:01:22 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <mi97hvgecbfvrp3oq3ns3kl9k0suhtbdg1@4ax.com>
Source record: 112638

On Sat, 12 Jul 2003 16:19:15 GMT, "Dave Mundell"
<hnldc10@worldnet.att.net> wrote:

>This is probably not the newgroup I need to be on, but perhaps someone could
>point me to one better suited for my question.
>
>I want to buy a portable AM radio that will receive a distant station that
>is close (in frequency) to a nearby station. The radio in my car does this
>just fine, but not any of the portable radios I've tried. I. The guy at
>Radio Shack told me I needed a radio with a digital tuner, so I bought one.
>Didn't work so I took it back. The display was digital; I don't know if
>anything else was. I had similar results at Circuit City and Best Buy. The
>clerks at these places appear to be clueless.
>
>Appreciate any help.
>
>Dave
>

The Select-A-Tenna tuning loop from C.Crane might help. Go to
http://www.ccrane.com/

They also sell the GE Super radio there.

You can also just call them -- they sorta specialize in long distance
AM listening.

Bob
k5qwg

1226. Sommer XP-50 few dimensions ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 08:02:19 UTC
From: Pat <pat2002_NO_SPAM@wp.pl>
Message-ID: <3F13B50B.3C1AB1AF@wp.pl>
Source record: 112571

Hello !
I plan to upgrade my old sommer xp-40 to xp-50 model by myself.
So, I need only to know what is distance between LOG3, LOG2 and LOG1
elements.
If someone knows dimensions, please help.

Pat (Sp4rus)

If you want to contact me, remove _NO_SPAM froma email address

1227. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 08:20:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh7e9rcuoojbf5@corp.supernews.com>
Source record: 112572

Dr. Slick wrote:
> Hello,
>
> I'd like to start a discussion (or light a brush-fire, as the
> case may be for this NG!), about what a 50 Ohm impedance match really
> means.
>
> On our trusty Smith Chart, assuming it is normalized to 50 Ohms,
> the center is considered and labeled as the "real resistive" 50 match
> point. In fact, the entire middle horizontal line is the "real" part
> of the impedance.
>
> I'm sure many of you have read the popular description/model of a
> transmission line as an infinite chain of alternating series inductors
> with shunt capacitors, with the resulting characteristic impedance as
> Z=(L/C)**1/2, where the L and C are distributed inductances and
> capacitances.
>
> So, in theory, if you have achieved a perfect match with your
> antenna, you will have matched the impedance to the 377 Ohms of free
> space, you will not have reflections at the matching point, and the
> energy will radiate in whatever pattern you have designed for.

No, an antenna doesn't "match" the impedance of free space. The input impedance of an antenna is the ratio of V to I. The impedance of free space is the ratio of the E field to the H field of a plane wave. They both happen to have units of ohms, but they're different things and there's no "matching" going on. If you apply 100 watts to an antenna, resonant or not, 100 watts will be radiated, less loss, regardless of the antenna's input impedance.

> The funny thing about this, is that you cannot say that the 50
> Ohms in the center of the chart is a "resistive" 50 Ohms, as there is
> very little real resistance in the average antenna.

Sure you can. You're confusing resistance with resistors. Resistance is a dimension, like length. There are lots of things which have dimensions of resistance but aren't resistors, like transresistance, characteristic resistance of a transmission line, or radiation resistance to name just a few. People who have a shaky understanding of basic electric circuit theory seem to have trouble dealing with this, but it becomes easier to deal with as you learn more about basic electricity. A mechanical example is torque and work, which have the same dimensions (force times distance) but are definitely different things.

This "resistive"
> 50 Ohms is really what people call the "radiation" resistance, which
> is something of a misnomer again, because this is trying to equate the
> successful impedance matching and subsequent non-reflected EM
> radiation with a truly real resistance like an ideal dummy load.

Sorry, that doesn't make a whole lot of sense. Yes, it's called the radiation resistance, but it's not a misnomer at all. (I suppose it would be if you called it a "radiation resistor", but nobody I know of has ever called it that.) If you calculate the power "consumed" by this resistance (that is, the power flow into it), it's the power being radiated. If the radiation and loss resistance of an antenna were zero, no energy would flow into it and consequently none would be radiated. (If the radiation resistance was zero and the loss resistance wasn't, then energy would flow into the antenna but none would be radiated -- it would all be dissipated as heat.)

Your use of "non-reflected EM radiation" seems to imply that the radiation from an antenna is somehow bounced back from space if the antenna feedpoint impedance is reactive. That's one of the rather bizarre and very wrong conclusions you could draw from the mistaken idea that the antenna "matched" the characteristic impedance of free space.

> Of course, it's well known that a truly real resistive 50 Ohm
> dummy load should appear exactly like a properly matched antenna to
> the transmitter.

At one frequency.

> Why do i ask all this? Well, if you believe that complex
> impedance measurements (series equivalent) by MFJ antenna analyzers
> are not completely inaccurate, then it appears that two 1/4 watt 100
> Ohm resistors in parallel (lead lengths short) are a much more
> consistent 50 Ohms over the VHF band than almost all the higher power
> dummy loads we have tested.

No surprise. It's much harder to make something that's physically big have a consistent impedance at high frequencies than for something physically small, simply because stray inductances and capacitances are both larger for large objects. Let that be a lesson.

> Problem is, the high power dummy loads will vary from 52 to 45
> "real" ohms depending on the frequency, with the "real" part of the
> impedance getting lower with increasing frequency, so it doesn't seem
> to be a "skin effect". The spread gets much worse when you put a 3'
> jumper coax in between, and even more worse when you add a power/swr
> meter. Then the "real" Ohms will be from 65 to 35 ohms, with the max
> and mins not correlating with frequency at all, and the stray
> reactances will be much more too, but just as varied with frequency.
> So much for "50 ohm" jumper cables! I suppose they are as close as
> they can get them for a particular price.

It's no trick at all to tranform a real resistance to a different value of real resistance using only purely reactive L and C components. It's

done all the time. An L network, with two components, is the simplest circuit which can pull off this magical trick. Just pick a point on the real axis of that Smith chart of yours and follow reactance lines around -- first XL, then XC, or vice-versa, until you end up back on the real axis again -- at a different resistance value. The amount of XL and XC you transit along the way are in fact the values you'd need to make an L network to do the transformation. As for the transmission line, start at, say, 45 ohms, then go in a circle around the center, reading off R and X values as you go. Those are the values of R and X you can get with a 50 ohm transmission terminated with a 45 + j0 ohm load. Of course, "50 ohm" lines are often quite a ways off -- I've measured them at up to 62 ohms or so. And you're right, you can get better ones if it's worth a lot to you. Oh, also notice that if you start on the real axis anywhere but the center and go around a half circle, representing 90 degrees of lossless transmission line, you end up at a different place on the real axis. Presto! You've pulled off a transformation of a purely real impedance with a lossless transmission line. Cool, huh?

> My theory is that the "real" part of the impedance is mainly the
> truly resistive 50 ohms of the dummy load at low frequencies around 10
> MHz or so...but as you go up in frequency, the parasitics of the dummy
> load and the coax jumper cable will cause "radiation" resistance to be
> mixed in with this truly real 50 ohms, giving us readings all over the
> map.

Although radiation will cause an increase in terminal resistance (remember, it accounts for the radiated power), it's not at all necessary in order to cause the dummy load resistance (real part of the impedance) to vary. The stray L and C can do that all by themselves, without any radiation at all.

>
> What do you folks think?
>

I think you'd benefit a lot from learning how to do some basic operations with a Smith chart. It would broaden your horizons a lot.

Roy Lewallen, W7EL

1228. Re: Sunair Automatic Tuner Info / Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 09:56:51 UTC
From: Bill <n4wc@arrl.net>
Message-ID: <bf0j07$9rm4r$1@ID-175813.news.uni-berlin.de>
Source record: 112573

Roy, Don't forget that W8JI has said that "extra power" improves the signal to noise ratio. He has noted that a 1200w output to 1500w output increase made all the difference in copy vs no-copy. One doesn't hear this side of the argument very often.

Bill Cook

Roy Lewallen wrote:
> Interesting. Just the other day, we were told that 10 dB wasn't enough
> signal strength difference to worry about, and even ol' "Kurt Sturba"
> has said that a mere 18 dB isn't that big a deal. Now here we have
> someone who feels that an extra 1.5 to 2 dB is worth considerable
> trouble and expense. Just goes to show ya.
>
> Roy Lewallen, W7EL
>
> M Wilson wrote:
>
>> Hello...
>>
>> I am looking to install either a dipole, or just a long wire, and need
>> suffestions on a tuner. I am running an amp, 700-800 watts out max.
>> The SGC 235 has a max input of 500 watts (no, I am not lowering the
>> power, sorry). So, Who makes an automatic tuner that handles 1000
>> watts, and can be mounted outdoors, at the antenna feed-point?
>>
>> Sunair came to mind, any info on these, where to obtain, how to
>> control it, etc? Any others? Harris?
>>
>> Thanks
>>
>> MW
>
>

1229. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 11:31:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f13e703$1_2@corp.newsgroups.com>
Source record: 112574

Dr. Slick wrote:
> The funny thing about this, is that you cannot say that the 50
> Ohms in the center of the chart is a "resistive" 50 Ohms, as there is
> very little real resistance in the average antenna.

From the IEEE Dictionary: "resistance (1)(B) The real part of impedance."

Apparently, all the resistance in the average antenna is real. :-)
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1230. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 11:56:58 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F13EAE3.4900CB4@gte.net>
Source record: 112575

Richard Clark wrote:

> On Mon, 14 Jul 2003 20:41:53 -0700, Paul@Rasdoc.com wrote:
>
> >I would like to build a 908Mhz turnstile.
> >
> >How does one normally go about testing and adjusting an
> >antenna at that high of frequency?
> >
> >
> >For a lower frequency I can hook up a MFJ antenna analizer or an SWR
> >meter,.
> >
> >I want to build a 900Mhz antenna with a hemispherical pattern.
> >It is going on an RC plane, so a normal vertical style antenna will
> >be problematic as it will have a null straight down.
> >
> >So I though a turnstile antenna would be perfect.
> >
> >
> >Any advise on designing such a device?
> >
> >
> >Paul Kl7JG
> >
>
> Hi Paul,
>
> 1. build a 90.8MHz version and scale it down;
> 2. build an Inverted-F
> see:
> http://www.qsl.net/kb7qhc/antenna/Inverted%20F/index.htm
>
> 73's
> Richard Clark, KB7QHC

Is it my browser or are the images on that page next to useless? I could
not figure out the antenna's configuration, or read the graph ordinates?
Text was less helpful.
Is there another site that discusses this antenna Richard?

Dale

1231. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 12:14:59 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf0r82pod1@hercules.btinternet.com>
Source record: 112576

Richard, thanks for the reminder.

Yes, the Beverage and other long-wire terminated antennas, although having lots of L and C, exhibit (ideally) no signs of resonance yet have purely constant vs frequency resistive feedpoint impedances.

They are all transmission lines which radiate because the spacing between conductors is an appreciable fraction, or more, of a wavelength, one of the conductors being whatever the local environment consists of.

Their equivalent lumped circuit networks come under a class of 'constant-resistance' networks commonly found in design of filters and equalisers.

The most simple example of a constant-resistance network is a capacitor in series with a resistor, both in parallel with an inductor in series with a resistor. When all 4 components have the same value in ohms (R) then the input resistance is a constant resistance R from DC to infinity.

Reg, G4FGQ

==========

"Richard Harrison" wrote -
> Reg, G4FGQ wrote:
> "All antenna "systems" are resonant because they present a resistive
> load to the transmitter. QED."
>
> Reg is right but there are of course exceptions.
>
> "Standing wave antennas", those like dipoles which have refllections at
> their ends, are tuned to rid them of reactance which would oppose
> incoming antenna current.
>
> If the antenna is operated off-resonance, it still works but with less
> vigor due to diminished current opposed by inherent reactance.
>
> There is a class of "traveling wave antennas" which are terminated, not
> in an open or a short, but terminated in their Zo`s to eliminate
> reflection from their terminations. This avoids radiation which would be
> caused by the reflected energy and change the radiation pattern produced
> by the forward energy. It also eliminates a change in the antenna
> drivepoint impedance caused by arrival of reflected energy back at the
> drivepoint. This reduces drivepoint impedance change as the frequency is
> changed.. This can make an antenna more acceptable to a radio over a
> wider frequency range, but it is likely to make the antenna less

> efficient.
>
> Best regards, Richard Harrison, KB5WZI
>
>

1232. Re: rsgb for £1.05 or $2 for a year open to all

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 12:43:17 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030715084317.12238.00000551@mb-m13.aol.com>
Source record: 112577

>There's good spam and bad spam. I once paid $60 for a one-year radcom
>subscription. If anyone can get it for $2, that's a great deal.

Posting it on rec.radio.amateur is probably appropriate. Posting it on
rec.radio.antenna and all the other newsgroups is not. His ISP has been
notified (again).
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

1233. Re: rsgb for ?1.05 or $2 for a year open to all

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 13:12:29 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <kav7hvsubr6emuuvhb7ord86ba4lfignbt@4ax.com>
Source record: 112657

On 14 Jul 2003 19:46:40 GMT, vhfradiobuff@aol.comspamme (VHFRadioBuff)
wrote:

>Spamming the newsgroups again, eh? Guess another email to your ISP is in order.

There's good spam and bad spam. I once paid $60 for a one-year radcom
subscription. If anyone can get it for $2, that's a great deal.

Bob
k5qwg

1234. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 13:52:50 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307150552.733e8268@posting.google.com>
Source record: 112578

Roy Lewallen <w7el@eznec.com> wrote in message news:<vh7e9rcuoojbf5@corp.supernews.com>...
> >
> > So, in theory, if you have achieved a perfect match with your
> > antenna, you will have matched the impedance to the 377 Ohms of free
> > space, you will not have reflections at the matching point, and the
> > energy will radiate in whatever pattern you have designed for.
>
> No, an antenna doesn't "match" the impedance of free space. The input
> impedance of an antenna is the ratio of V to I. The impedance of free
> space is the ratio of the E field to the H field of a plane wave. They
> both happen to have units of ohms, but they're different things and
> there's no "matching" going on. If you apply 100 watts to an antenna,
> resonant or not, 100 watts will be radiated, less loss, regardless of
> the antenna's input impedance.
>

I disagree on this point. You can think of an antenna as a type
of tranformer, from 50 Ohms to 377 Ohms of free space. A tuned
antenna is "matching" 50 to 377 ohms, and will therefore have no
reflections, ideally.

Have you heard of something called mis-match loss? If the
antenna's input impedance is not matched to the tranmission line (or
the final PA), then the radiated power will be significantly less than
100 watts.

> The funny thing about this, is that you cannot say that the 50
> > Ohms in the center of the chart is a "resistive" 50 Ohms, as there is
> > very little real resistance in the average antenna.
>
> Sure you can. You're confusing resistance with resistors. Resistance is
> a dimension, like length. There are lots of things which have dimensions
> of resistance but aren't resistors, like transresistance, characteristic
> resistance of a transmission line, or radiation resistance to name just
> a few. People who have a shaky understanding of basic electric circuit
> theory seem to have trouble dealing with this, but it becomes easier to
> deal with as you learn more about basic electricity. A mechanical
> example is torque and work, which have the same dimensions (force times
> distance) but are definitely different things.
>

ok, so perhaps the way to think of it is: when an antenna is
matched, the I and V curves will be in phase (no reactance), and the
product of I*V (integrated) will be the power transmitted.

> This "resistive"
> > 50 Ohms is really what people call the "radiation" resistance, which
> > is something of a misnomer again, because this is trying to equate the
> > successful impedance matching and subsequent non-reflected EM
> > radiation with a truly real resistance like an ideal dummy load.
>
> Sorry, that doesn't make a whole lot of sense. Yes, it's called the
> radiation resistance, but it's not a misnomer at all. (I suppose it
> would be if you called it a "radiation resistor", but nobody I know of
> has ever called it that.) If you calculate the power "consumed" by this
> resistance (that is, the power flow into it), it's the power being
> radiated. If the radiation and loss resistance of an antenna were zero,
> no energy would flow into it and consequently none would be radiated.
> (If the radiation resistance was zero and the loss resistance wasn't,
> then energy would flow into the antenna but none would be radiated -- it
> would all be dissipated as heat.)
>

If both the radiation and loss resistance were zero, i would
expect an ideal short, and therefore full -180 degree reflections.

I suppose what this all means is that if you have a matched
antenna, it's V and I curves will be IN PHASE and will have the exact
same RMS values as if you had a truly resistive dummy load instead.
Therefore, you can consider the center of the Smith Chart (or the
entire real (non-reactive) impedance line) as a real resistance like
an ideal dummy load.

Do you agree with this statement Roy?

> Your use of "non-reflected EM radiation" seems to imply that the
> radiation from an antenna is somehow bounced back from space if the
> antenna feedpoint impedance is reactive. That's one of the rather
> bizarre and very wrong conclusions you could draw from the mistaken idea
> that the antenna "matched" the characteristic impedance of free space.
>

I think i'm correct to think of antennas as impedance matching
transformers.

50 Ohms to 377 Ohms.

> > Of course, it's well known that a truly real resistive 50 Ohm
> > dummy load should appear exactly like a properly matched antenna to
> > the transmitter.
>
> At one frequency.
>

Agreed.

> > Why do i ask all this? Well, if you believe that complex
> > impedance measurements (series equivalent) by MFJ antenna analyzers
> > are not completely inaccurate, then it appears that two 1/4 watt 100

> > Ohm resistors in parallel (lead lengths short) are a much more
> > consistent 50 Ohms over the VHF band than almost all the higher power
> > dummy loads we have tested.
>
> No surprise. It's much harder to make something that's physically big
> have a consistent impedance at high frequencies than for something
> physically small, simply because stray inductances and capacitances are
> both larger for large objects. Let that be a lesson.
>

It was. And I fully agree with you on this point.

>
> It's no trick at all to tranform a real resistance to a different value
> of real resistance using only purely reactive L and C components. It's
> done all the time. An L network, with two components, is the simplest
> circuit which can pull off this magical trick. Just pick a point on the
> real axis of that Smith chart of yours and follow reactance lines around
> -- first XL, then XC, or vice-versa, until you end up back on the real
> axis again -- at a different resistance value. The amount of XL and XC
> you transit along the way are in fact the values you'd need to make an L
> network to do the transformation.

I'm familiar with L networks and how you do transformations with
the Smith.

As for the transmission line, start
> at, say, 45 ohms, then go in a circle around the center, reading off R
> and X values as you go. Those are the values of R and X you can get with
> a 50 ohm transmission terminated with a 45 + j0 ohm load. Of course, "50
> ohm" lines are often quite a ways off -- I've measured them at up to 62
> ohms or so. And you're right, you can get better ones if it's worth a
> lot to you. Oh, also notice that if you start on the real axis anywhere
> but the center and go around a half circle, representing 90 degrees of
> lossless transmission line, you end up at a different place on the real
> axis. Presto! You've pulled off a transformation of a purely real
> impedance with a lossless transmission line. Cool, huh?
>

I suspect that there is plenty of series inductance and chunt
capacitance in our dummy loads, so that especially at higher
frequencies, the starting point is anything but a perfect 50 ohms.
Hence the transformation with the 3' coax.

> > My theory is that the "real" part of the impedance is mainly the
> > truly resistive 50 ohms of the dummy load at low frequencies around 10
> > MHz or so...but as you go up in frequency, the parasitics of the dummy
> > load and the coax jumper cable will cause "radiation" resistance to be
> > mixed in with this truly real 50 ohms, giving us readings all over the
> > map.
>
> Although radiation will cause an increase in terminal resistance

> (remember, it accounts for the radiated power), it's not at all
> necessary in order to cause the dummy load resistance (real part of the
> impedance) to vary. The stray L and C can do that all by themselves,
> without any radiation at all.
>

Ok, you make sense on this point. The readings all over the map
can be due to not starting at the center of the chart(see above), and
also imperfect 50 ohm coax. So I agree radiation resistance is not
necessary, but i suspect it may have a role in this case.

>
> I think you'd benefit a lot from learning how to do some basic
> operations with a Smith chart. It would broaden your horizons a lot.
>
> Roy Lewallen, W7EL

I believe i understand the Chart better than you think, Roy,
enough to know that you do know what you are talking about.

I still think it's ok to consider antennas as impedance
tranformers, but you have brought up some very good points.

Thanks for the input.

Slick

1235. Re: Sunair Automatic Tuner Info / Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 13:52:53 UTC
From: 3518693@mail.com
Message-ID: <740cebc3.0307150552.5980a73d@posting.google.com>
Source record: 112579

Guys,

While I appreciate the banter, and the points supposedly being made,
might I ask if anyone has an actual answer to my original question?
All I want to do is feed a dipole or longwire without running 250 feet
of ladder line across the yard, so I can cut down on my antenna farm
(Dipoles, etc, all strung up from the trees). A tuner out in the yard
seems like a reasonable solution.

Thanks in advance.

Bill <n4wc@arrl.net> wrote in message
news:<bf0j07$9rm4r$1@ID-175813.news.uni-berlin.de>...
> Roy, Don't forget that W8JI has said that "extra power" improves the
> signal to noise ratio. He has noted that a 1200w output to 1500w output
> increase made all the difference in copy vs no-copy. One doesn't hear
> this side of the argument very often.
>
> Bill Cook
>
> Roy Lewallen wrote:
> > Interesting. Just the other day, we were told that 10 dB wasn't enough
> > signal strength difference to worry about, and even ol' "Kurt Sturba"
> > has said that a mere 18 dB isn't that big a deal. Now here we have
> > someone who feels that an extra 1.5 to 2 dB is worth considerable
> > trouble and expense. Just goes to show ya.
> >
> > Roy Lewallen, W7EL
> >
> > M Wilson wrote:
> >
> >> Hello...
> >>
> >> I am looking to install either a dipole, or just a long wire, and need
> >> suffestions on a tuner. I am running an amp, 700-800 watts out max.
> >> The SGC 235 has a max input of 500 watts (no, I am not lowering the
> >> power, sorry). So, Who makes an automatic tuner that handles 1000
> >> watts, and can be mounted outdoors, at the antenna feed-point?
> >>
> >> Sunair came to mind, any info on these, where to obtain, how to
> >> control it, etc? Any others? Harris?
> >>
> >> Thanks
> >>
> >> MW

> >
> >

1236. Re: Sunair Automatic Tuner Info / Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 13:56:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1408f3$1_5@corp.newsgroups.com>
Source record: 112580

M Wilson wrote:
> While I appreciate the banter, and the points supposedly being made,
> might I ask if anyone has an actual answer to my original question?
> All I want to do is feed a dipole or longwire without running 250 feet
> of ladder line across the yard, so I can cut down on my antenna farm
> (Dipoles, etc, all strung up from the trees). A tuner out in the yard
> seems like a reasonable solution.

SGC has a 500W autotuner. You might contact them and ask how much power
it will handle if it was first tuned using 500W and then the power
increased to ______.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1237. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 14:03:28 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307150603.351bee79@posting.google.com>
Source record: 112581

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<r877hvs1u7qj5l37vpdscdd1lorg4mr8n0@4ax.com>...
> On 14 Jul 2003 22:32:12 -0700, radio913@aol.com (Dr. Slick) wrote:
> snip
> > So, in theory, if you have achieved a perfect match with your
> >antenna, you will have matched the impedance to the 377 Ohms of free
> >space, you will not have reflections at the matching point, and the
> >energy will radiate in whatever pattern you have designed for.
>
> A strange mix of notions, some valid, others fanciful interpretation.
>

What do you mean by this? Can you explain yourself more? Or am i
confusing you?

> >
> > The funny thing about this, is that you cannot say that the 50
> >Ohms in the center of the chart is a "resistive" 50 Ohms, as there is
> >very little real resistance in the average antenna.
>
> You might not, others would, and there is nothing "funny" going on in
> the first place. As to "real" resistance, that is merely semantics
> and does not illuminate just what you want to talk about.
>

I think it's "funny" that you can't give me your opinion on this.
I don't think you have one.

> >This "resistive"
> >50 Ohms is really what people call the "radiation" resistance, which
> >is something of a misnomer again,
>
> It is only a misnomer that you brought to the table. There is, by and
> large, no antenna that is by nature 50Ohms in the first place, but
> there are many antennas that have been cobbled together to present
> 50Ohms - not the same thing; but also hardly distinctive either,
> except to the semanticist. Radiation resistance is NOT a function of
> drive point impedance even if the two share the same value for some
> obscure design.
>

This paragraph was written by someone who doesn't know what they
are saying AT ALL.
You clearly are way more confused than even me.

> "We?"
>
> You presume MFJ is not completely inaccurate? That is a wordy long
> way around the barn. And this is a function of "if you believe?" Why
> not simply state what YOU believe and leave out the tea leaf reading?
>

Why not simply stop pretending you know what the hell i'm talking
about when you clearly don't!

>
> Theories abound and I have a 50Ohm dummy load that is fairly flat from
> DC to 1GHz (confirmed by calibration to be less than 1:1.2 anywhere)
> that I bought for $50. True, it is actually 52Ohms (the actual
> standard of post WW2 Electronics), but its frequency characteristics
> are just fine. More so than your experience in either obtaining
> accuracy, or confirming it, or both.
>
> How you make the leap to "radiation" resistance to make up the
> difference in your observations is inventive, but not compelling; and
> certainly lacks considerable discussion.
>

Discussion which you have not illuminated at all. I don't have a
high opinion of most HAM people, and you certainly fit the bill.

But some Hams like Roy actually know what they are talking about.

You certainly do not.

> So, to respond directly to the subject:
> >50 Ohms "Real Resistive" impedance a Misnomer?
> Yes, as the nominative you employ.
>
> 73's
> Richard Clark, KB7QHC

Stay out of discussions that go over your head.

Slick

1238. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 14:05:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f140b0a$1_5@corp.newsgroups.com>
Source record: 112583

Dr. Slick wrote:
> Have you heard of something called mis-match loss? If the
> antenna's input impedance is not matched to the tranmission line (or
> the final PA), then the radiated power will be significantly less than
> 100 watts.

Not if there's an antenna tuner (Z0-match) in the circuit. The
following will radiate most of the mismatch loss from the load.

100W XMTR--50 ohm feedline--+--1/2WL 150 ohm feedline--50 ohm load

All of the reflected energy is re-routed back toward the load at
the '+' Z0-match point through re-reflection and wave cancellation.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1239. Re: ATN Log periodic

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 14:06:14 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <bNCdnavTpJvGl4miU-KYvg@comcast.com>
Source record: 112582
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.misc

Tony,

Adding more elements seems like the only practical solution. You would probably have to add 6 -8 feet to the boom, and 2 more elements. Keep in mind the longest element will be about 38 feet long. That is why they make the 18 -30 MHz version. BTW, Tennadyne used to make an 18 -30, but I don't see that listed on their web site any more. You might want to check them out anyhow for any ideas.

Tam/WB2TT
"TS" <tstone12002@yahoo.com.au> wrote in message
news:gu8Qa.2752$wU5.1011@news-server.bigpond.net.au...
> Hi Mac
>
> The lengthening of the boom and the further scaling of larger elements
does
> sound like a damn good idea ! Thanks for the ideas,,,,much appreciated.
>
> Cheers and 73's
> Tony VK2TS
>
> "J. McLaughlin" <JCM@Power-Net.Net> wrote in message
> news:vh1bfk4a6n967e@corp.supernews.com...
> > Dear Tony (VK2TS):
> > Nice to see a real antenna question from an actual radio amateur...
> >
> > Extending is what I would do.
> > 73, Mac N8TT
> > --
> > J. Mc Laughlin - Michigan USA
> > Home: JCM@Power-Net.Net
> >

1240. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 14:31:30 UTC
From: richardharrison@webtv.net
Message-ID: <21680-3F141042-283@storefull-2316.public.lawson.webtv.net>
Source record: 112584

Floyd Davidson wrote:
"---the look angle for a geosynchronous satellite here is about 12 degrees if the satellite is directly south."

Floyd is in Alaska. Floyd`s example of anomalous propagation from reflection to a terrestial transmission was in Arizona. On the equator, the "look angle" may be nearly straight up.

The reason a satellite dish is less susceptible to earth reflections is that the satellite dish is not aimed to pick the reflections up. The satellite dish is aimed at the sky.

A terrestrial microwave dish aimed directly at the satellite dish is likely not transmitting an interfering frequency, but if so, it is unlikely to be aligned well enough or above the horizon of the satellite dish.

The approximate specifications of a 6-foot dish for beamwidth and gain versus frequency are:

1.3 GHz 9 deg. 25 dbi

2.3 GHz 5 deg. 30 dbi

3.5 GHz 4 deg. 33 dbi

6 GHz 2 deg. 36 dbi

10 GHz 1.5 deg 43 dbi

25 GHz 0.5 deg 50 dbi

Sources of the above are the "RSGB VHF-UHF Manual" and the ARRL Antenna book (they agree).

In moderate latitudes, the satellite earth station antenna is really looking up. It is quite likely terrestrial signals are not within range of its bandwidth, beamwidth, or distance.

Best regards, Richard Harrison, KB5WZI

1241. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 14:59:21 UTC
From: tdonaly@aol.com
Message-ID: <20030715105921.03466.00000506@mb-m05.aol.com>
Source record: 112585

Reg wrote,
>
>Richard, thanks for the reminder.
>
>Yes, the Beverage and other long-wire terminated antennas, although having
>lots of L and C, exhibit (ideally) no signs of resonance yet have purely
>constant vs frequency resistive feedpoint impedances.
>
>They are all transmission lines which radiate because the spacing between
>conductors is an appreciable fraction, or more, of a wavelength, one of the
>conductors being whatever the local environment consists of.
>
>Their equivalent lumped circuit networks come under a class of
>'constant-resistance' networks commonly found in design of filters and
>equalisers.
>
>The most simple example of a constant-resistance network is a capacitor in
>series with a resistor, both in parallel with an inductor in series with a
>resistor. When all 4 components have the same value in ohms (R) then the
>input resistance is a constant resistance R from DC to infinity.
>----
>Reg, G4FGQ
>

Since the reactive components change reactance with frequency, Reg's network
may be a little hard to realize in practice. Try making the inductance equal
to
R^2*C Reg. You might have better luck. You also might want to review
Everitt's
take on this subject, starting on page 284 of the second edition of his book,
Communication Engineering. His ideas are quite enlightening.

73,
Tom Donaly, KA6RUH

1242. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 15:20:10 UTC
From: tdonaly@aol.com
Message-ID: <20030715112010.03466.00000508@mb-m05.aol.com>
Source record: 112586

Slick wrote,
>
>
> This paragraph was written by someone who doesn't know what they
>are saying AT ALL.
> You clearly are way more confused than even me.
>

>
> Why not simply stop pretending you know what the hell i'm talking
>about when you clearly don't!
>

>
>
> Discussion which you have not illuminated at all. I don't have a
>high opinion of most HAM people, and you certainly fit the bill.
>
> But some Hams like Roy actually know what they are talking about.
>
> You certainly do not.
>
Slick,
You're not going to make many points on this or any other newsgroup just by
using rudeness as an argument. You need to read more books, Slick, so
you'll have more to add to a discussion than an attitude. You should also read

Richard's posts very carefully and try to figure out what he's saying before
you
fly off the handle and assume the attitude of an angry, petulant child. You'll
learn something and possibly avoid being made a fool of by some of the more
technically sophisticated members of this newsgroup.
73,
Tom Donaly, KA6RUH

1243. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 15:21:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ij58hvo7kmtvs2fljpmhasvrn06hqegbjh@4ax.com>
Source record: 112587

On Tue, 15 Jul 2003 11:56:58 GMT, Dale Parfitt <parinc@gte.net> wrote:

>
>Is it my browser or are the images on that page next to useless? I could
>not figure out the antenna's configuration, or read the graph ordinates?
>Text was less helpful.
>Is there another site that discusses this antenna Richard?
>
>Dale

Hi Dale,

Graphics straight from EZNEC which has served this group for years.
Select any graphic and simply ask the browser to view that page. If
you are unfamiliar with the drawing conventions I would suggest
getting the free version and becoming adept. The SWR drawings show 40
data points quite clearly between 440 and 460 (every 0.5MHz) no more
resolution is required, there are no surprise resonances hidden
between data points.

This is a very simple antenna, the description of the main radiator:
"This is a low, long antenna roughly quarter wavelength from the
ground point, up to the bend, out to the end. The drive point was
found by trial and error."
is quite explicit but I already admit may be confusing, thus the
attending illustration. There is only one ground, there is only one
bend, there is only one feed. The name describes it as well:
"Inverted F" The letter F certainly is descriptive. The only
embellishment is that it is constructed with a sheet rather than a
wire, but both sheet and wire models' SWR are also shown and
discussed:
"Because of the sheet metal form, this qualifies as a thick
radiator. The SWR curve on the left confirms this when compared to
the SWR curve below."
"This is the SWR curve for a one wire model of the design modeled
here."

The design couldn't be simpler for those already adept at building
grounded verticals with a gamma feed - and without the cap of the
gamma feed. The vertical is simply folded over at the feed.

73's
Richard Clark, KB7QHC

1244. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 15:22:02 UTC
From: richardharrison@webtv.net
Message-ID: <23393-3F141C1A-312@storefull-2315.public.lawson.webtv.net>
Source record: 112588

Dr. Slick wrote:
"The funny thing about this is that you cannot say that the 50 ohms in the center of the chart is a "resistive" 50 ohms as there is very little real resistance in the average antenna."

Resistance is defined as real. That is, current is instantaneously proportional to the voltage.

Any efficient antenna has a high ratio of radiation resistance to loss resistance.

Resistance is the ratio of in-phase voltage to current accepted by an antenna. Part is made by loss in the antenna. part is made by radiation from the antenna. They are often represented by an equivalent circuit of two resistors in series.

Dr, Frederick Emmons Terman says of radiation resistance:
"This is the resistance that, when inserted in series with the antenna, will consume the same amount of power as is actually radiated. ---it is customary to refer the radiation resistance to a current maximum in the case of an ungrounded antenna, and to the base of the antenna when the antenna is grounded."

Best regards, Richard Harrison, KB5WZI

1245. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 15:32:52 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87d6gb3ivv.fld@barrow.com>
Source record: 112589

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"---the look angle for a geosynchronous satellite here is about 12
>degrees if the satellite is directly south."
>
>Floyd is in Alaska. Floyd`s example of anomalous propagation from
>reflection to a terrestial transmission was in Arizona. On the equator,
>the "look angle" may be nearly straight up.
>
>The reason a satellite dish is less susceptible to earth reflections is
>that the satellite dish is not aimed to pick the reflections up. The
>satellite dish is aimed at the sky.

The reason your example is poor is that it assumes something
which *clearly* is not always true. Satellite dish antennas are
not always aimed significantly far away from the earth's
surface.

>A terrestrial microwave dish aimed directly at the satellite dish is
>likely not transmitting an interfering frequency, but if so, it is
>unlikely to be aligned well enough or above the horizon of the satellite
>dish.

That is not necessarily true. And in fact I've seen 4 gig
terrestrial microwave systems cause grievous interference to
satellite systems. (In one case, by reflections off a metal
building across the street from the satellite dish, which caused
the weird effect of the interference coming from a microwave
that was 20 miles distant directly *behind* the direction the
satellite dish was pointed!).

>The approximate specifications of a 6-foot dish for beamwidth and gain
>versus frequency are:

This doesn't account for side lobes, and hence gives a *very* false
indication of the actual susceptibility to interference arriving at
angles off the main lobe.

>1.3 GHz 9 deg. 25 dbi
>
>2.3 GHz 5 deg. 30 dbi
>
>3.5 GHz 4 deg. 33 dbi
>
>6 GHz 2 deg. 36 dbi
>

>10 GHz 1.5 deg 43 dbi
>
>25 GHz 0.5 deg 50 dbi
>
>Sources of the above are the "RSGB VHF-UHF Manual" and the ARRL Antenna
>book (they agree).
>
>In moderate latitudes, the satellite earth station antenna is really
>looking up. It is quite likely terrestrial signals are not within range
>of its bandwidth, beamwidth, or distance.

But not all microwave systems requiring path engineering are
located so convenient for your specifications. It is simply false
to claim that, even at moderate latitudes, the satellite antenna
is *necessarily* looking at a high angle above the terrain. Locations
with small latitudes *can* see some satellites at high angles, while
locations at high latitudes *never* see a geosynchronous satellite
at a high angle. But in either case there are *many* satellites
at lower angles.

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1246. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 15:52:21 UTC
From: Radio Amateur KC2HMZ <kc2hmz@aa-mail.net>
Message-ID: <kt78hvsnchaqkjna0402l3har7rq2vlld2@4ax.com>
Source record: 112550

On Tue, 15 Jul 2003 17:43:20 -0700, "denton" <denton@oregontrail.net>
wrote:

>Ask any trucker about a co-phased cb antenna system....same principal
>applies

My understanding of that setup is that the two cophased whips need to
be a quarter wavelength apart in order for it to work properly,
although I may have been misinformed.

However, if this is correct, it's gonna be tough to find a vehicle
that will let you separate two cophased whips by a quarter wavelength
at 80 meters - and driving it down most city streets would probably be
quite an experience even if you could find one that large. (Maybe the
tractor that moves the space shuttle from the vehicle assembly
building to the launch pad...top speed is slower than most folks can
walk, though)

73 DE John, KC2HMZ

1247. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 15:55:32 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n078hvkp1egn6sg63tjpu97fdidms9d1q9@4ax.com>
Source record: 112590

On 15 Jul 2003 07:03:28 -0700, radio913@aol.com (Dr. Slick) wrote:
>>
>> A strange mix of notions, some valid, others fanciful interpretation.
>>
> What do you mean by this? Can you explain yourself more? Or am i
>confusing you?

Confused is a good word.

>> You might not, others would, and there is nothing "funny" going on in
>> the first place. As to "real" resistance, that is merely semantics
>> and does not illuminate just what you want to talk about.
>>
> I think it's "funny" that you can't give me your opinion on this.
> I don't think you have one.

Confused Opinion being sought? Enough is provided.

>> >This "resistive"
>> >50 Ohms is really what people call the "radiation" resistance, which
>> >is something of a misnomer again,
>>
>> It is only a misnomer that you brought to the table. There is, by and
>> large, no antenna that is by nature 50Ohms in the first place, but
>> there are many antennas that have been cobbled together to present
>> 50Ohms - not the same thing; but also hardly distinctive either,
>> except to the semanticist. Radiation resistance is NOT a function of
>> drive point impedance even if the two share the same value for some
>> obscure design.
>>
> This paragraph was written by someone who doesn't know what they
>are saying AT ALL.
> You clearly are way more confused than even me.

Again you have reversed the attribution. I am not the one seeking
"opinion."

>> "We?"
>>
>> You presume MFJ is not completely inaccurate? That is a wordy long
>> way around the barn. And this is a function of "if you believe?" Why
>> not simply state what YOU believe and leave out the tea leaf reading?
>>
> Why not simply stop pretending you know what the hell i'm talking
>about when you clearly don't!

An "MFJ is not completely inaccurate?" Now there is clear writing. I
think my statement was rather explicit. But if you need it restated,
I think you said it well enough yourself.

>>
>> Theories abound and I have a 50Ohm dummy load that is fairly flat from
>> DC to 1GHz (confirmed by calibration to be less than 1:1.2 anywhere)
>> that I bought for $50. True, it is actually 52Ohms (the actual
>> standard of post WW2 Electronics), but its frequency characteristics
>> are just fine. More so than your experience in either obtaining
>> accuracy, or confirming it, or both.
>>
>> How you make the leap to "radiation" resistance to make up the
>> difference in your observations is inventive, but not compelling; and
>> certainly lacks considerable discussion.
>>
> Discussion which you have not illuminated at all. I don't have a
>high opinion of most HAM people, and you certainly fit the bill.

You cannot distinguish the specification of a Dummy Load being flat
over the frequency range of DC to 1MHz to within less than 1:1.2?
What opinions are you seeking of HAM people, the quality of bacon?

> But some Hams like Roy actually know what they are talking about.
> You certainly do not.
>
Now there is opinion I can recognize. ;-)

>> So, to respond directly to the subject:
>> >50 Ohms "Real Resistive" impedance a Misnomer?
>> Yes, as the nominative you employ.
>>
>> 73's
>> Richard Clark, KB7QHC
>
> Stay out of discussions that go over your head.
>
>Slick

Thanks but no thanks, OM. You certainly have a crappy dummy load you
may have confirmed through haphazard testing that you then rejected
with opinion and speculative theory. That quality was evident
throughout.

You also have a low threshold for your avowed mission to
>light a brush-fire
As always, you have complete control in what you choose to write, and
you chose opinion over technical discussion. As far as opinion or
brush fires goes, you don't seem well suited for that either.

73's
Richard Clark, KB7QHC

1248. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 16:25:07 UTC
From: pbreed@NoSpam.com
Message-ID: <h0a8hvk374iterbej3bnl8a23rmotic67s@4ax.com>
Source record: 112591

I'm not antenna adept, so in trying to read between the lines I have a few questions

Here is my ASCII art diagram....

```
XMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
M F
M F
M F
M F
M F
M F
M F
M F
GGGG
```

>>
>>I want to build a 900Mhz antenna with a hemispherical pattern.
>>It is going on an RC plane, so a normal vertical style antenna will
>>be problematic as it will have a null straight down.
>>
>>So I though a turnstile antenna would be perfect.
>>
>>
>>Any advise on designing such a device?
>>
>>
>>Paul Kl7JG
>>
>
>Hi Paul,
>
>1. build a 90.8MHz version and scale it down;
>2. build an Inverted-F
>see:
>http://www.qsl.net/kb7qhc/antenna/Inverted%20F/index.htm
>
>73's
>Richard Clark, KB7QHC

1249. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 16:46:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u3a8hv88j4ajspb55cgptl74a0v757uif9@4ax.com>
Source record: 112592

On Tue, 15 Jul 2003 10:22:02 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Dr. Slick wrote:
>"The funny thing about this is that you cannot say that the 50 ohms in
>the center of the chart is a "resistive" 50 ohms as there is very little
>real resistance in the average antenna."
>

Hi Richard,

This is seems to be a point of convergence for the derivation of many
fascinating and strange theories of fancy and speculation.

You point out in the remainder of your posting about the combination
of resistances (giving particular care to describe in terms of phase)
and yet many posters here fail to account for those same assortment of
R's available from real life.

One notable offering of measuring antenna (or load) impedance involved
the use of a thermometer to which I asked "what is the Z for a 1
degree rise?" I was not surprised to find no answer forthcoming even
when the premise was sound. Such is the shortfall of speculation in
the face of analytical enquiry. There is no corresponding shortfall
of opinion draped in the mantle of citations unfortunately.

These attempts to separate "real" resistance from other resistances
are challenged with volumes of formulaic recitation, and the absolute
resistance (yet another meaning) to merely stepping out into the field
with an OhmMeter (much less that same thermometer). Clearly,
resolution of these imponderables is not a target for some scribblers.

For many years there has been this effete distinction of there being
dissipative and non dissipative resistance (perhaps the basic, or
elemental concern of this thread; yet through hazy writing that agenda
remains elusive). The transmitter cannot possibly separate the two.
It thus remains for the target audience to resolve, but even they
cannot either unless the incident of gaining or losing this additional
resistance occurs in a short enough interval to allow its perception
(notably expressed in dB). If the researchers refuse to do some field
work, it will always remain among their mysteries of the sacrament.

73's
Richard Clark, KB7QHC

1250. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 17:06:25 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jvb8hvcdqt3asand4ed426e2l5rbl47ref@4ax.com>
Source record: 112593

On Tue, 15 Jul 2003 09:25:07 -0700, pbreed@NoSpam.com wrote:

>I'm not antenna adept, so in trying to read between the lines I have a few questions
>
>Here is my ASCII art diagram....
>
>
> XMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
> M F
> M F
> M F
> M F
> M F
> M F
> M F
> M F
>GGGG

Hi Paul,

Total radiator length (M) is ï¿½ wavelength (approx).

Use the drawing (viewed as its own page) to print a copy and scale all dimensions by wavelength. Do not presume any correction factors, simply use one Meter to be one Meter (not 0.95 Meter) at one Meter wavelength. I deliberately left the segments visible to aid in scaling. You should be able to perceive that the structure folds at roughly 0.04 wavelength, which is also the height above the ground plane. The foreshortened width of the sheet metal is also on the scale of 0.04 wavelength.

For your application at 900MHz be aware that even thin wire (as in the feed) becomes significantly thick enough to change resonance and feed resistance through slight geometrical variations. This is true for any construction. That is why I provided the caution that it was chosen (or discovered) by trial and error. Given the 10MHz wide 2:1 BW, discovery covers a lot of turf. By purposely using thick components, this becomes less an issue. At these very short wavelengths, it is a rather simple matter to build deliberately wide resonant (low Q) structures.

73's
Richard Clark, KB7QHC

1251. Re: 40 m inverted vee question?????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 17:46:26 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <bf1eli$1kmo$1@f04n12.cac.psu.edu>
Source record: 112594

Hi Capo:

The Z of an antenna changes with its height above ground. It is not a liner function but follows a curve. There is a chart in all antenna handbooks showing the change with height above ground. Anyway you lowered the average height of your antenna so you changed the Z of the antenna. Lowering the antenna will change the shape of the radiation pattern. It will not change the efficiency of the antenna, if you put a 100 watts in it will radiate 100 watts.

--
John Passaneau
Penn State University, State College Pa.
W3JXP
w3jxp@arrl.net
"capo" <Pr1@for.net> wrote in message news:3F13A168.552A0A16@for.net...
> My 40 m reson. iv used to be completely horizontal at 30 ft.
>
> I had to bend one end (while leaving the other horizontal) at
> about a 45 deg angle to about 10 ft above the ground.
>
> The SWR seems to be higher. 1.5:1 at its lowest. I can't remember
> what it was before but I know it wasn't this high.
>
> Will this cause an efficiency problem or any other?????
>

1252. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 17:57:57 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307150957.69dbf89@posting.google.com>
Source record: 112595

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0307142132.772dc565@posting.google.com>...
...
> Why do i ask all this? Well, if you believe that complex
> impedance measurements (series equivalent) by MFJ antenna analyzers
> are not completely inaccurate, then it appears that two 1/4 watt 100
> Ohm resistors in parallel (lead lengths short) are a much more
> consistent 50 Ohms over the VHF band than almost all the higher power
> dummy loads we have tested.
>
> Problem is, the high power dummy loads will vary from 52 to 45
> "real" ohms depending on the frequency, with the "real" part of the
> impedance getting lower with increasing frequency, so it doesn't seem
> to be a "skin effect". The spread gets much worse when you put a 3'
> jumper coax in between, and even more worse when you add a power/swr
> meter. Then the "real" Ohms will be from 65 to 35 ohms, with the max
> and mins not correlating with frequency at all, and the stray
> reactances will be much more too, but just as varied with frequency.
> So much for "50 ohm" jumper cables! I suppose they are as close as
> they can get them for a particular price.
>
>
> My theory is that the "real" part of the impedance is mainly the
> truly resistive 50 ohms of the dummy load at low frequencies around 10
> MHz or so...but as you go up in frequency, the parasitics of the dummy
> load and the coax jumper cable will cause "radiation" resistance to be
> mixed in with this truly real 50 ohms, giving us readings all over the
> map.
>
>
> What do you folks think?

With just a bit of experience in this area, I think you need to find a
way to control your experiments more carefully so you KNOW what's
going on, to a better approximation. I'm quite sure it's possible to
build fairly high power dummy loads--at least high enough power to
handle legal amateur transmitter outputs--that present much better
matches than you describe. Our most usual problem in calibrating
precision instruments at high frequencies is in finding cables which
are really close to 50 ohms and are also practical for routine tests.
Some of the other parts such as power splitters present problems, too.
But we've gotten pretty good at figuring out just where the errors
creep in, through a combination of analysis and experiments. For
sure, our work builds on a tremendous amount of work that has gone on

in the past in the area of precision RF measurements. We currently work at frequencies from DC to several GHz, and worry in the GHz range about errors equivalent to an ohm or so...less down at 100MHz and below.

But for ham applications, do you really care about all this? There's probably not a need to, if you're just trying to get power to an antenna, but if you care because you simply want to learn how to build a precision system and make precision measurements, that's fine too. You should be able to find lots of info on the web about that...try, for example, to find Hewlett-Packard/Agilent ap notes on RF measurements and calibrations.

Cheers,
Tom

1253. Shielded Loop - Velocity Factor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 18:13:50 UTC
From: Loopfan <bgreer1@earthlink.net>
Message-ID: <yvXQa.102379$lo.8784543@newsread2.prod.itd.earthlink.net>
Source record: 112596

I have a few more questions, but first I'd like to thank everyone for their feedback. After doing some usenet searching, it seems that I am retracing the footsteps of those from about 1995 onwards. I'd like to thank W7EL, W8JI and others for making my head hurt. <grin> I feel like that character in Close Encounters making a mash-potato mountain in his living room....

I have been cutting my coax loops to less than 1/10th of a wavelength and also taking the velocity factor of the cable into account. After your help with analyzing transmission lines, and proving for myself that the outside shield is the antenna by way way of being able to attenuate it with an RF choke, I am now wondering if I should *NOT* take the velocity factor into account and make my loops with disregard to the velocity factor? Or does the jacket contribute to the velocity factor of the outer-surface of the cable?

Question 2: Have we come to any conclusions about how the current gets from the outer-skin surface of the shield to the inner-skin surface of the shield? I don't want to rehash an old topic, so I'll be just as happy to say that it merely *does*. I'm wondering if there is a field set up on the outer skin edge that encompasses the inner-skin edge and transfers current that way, or can I view the inner and outer skins as more or less the same conductive skin surface that has a 180 degree bend in it so that its analogous to the inside and outside being the same sort of "outer" skin? Looks like I'm confusing myself...

I'll be happy to do more usenet message searches if that will prevent a total flareup of the same old topic.

Thanks and 73
Brian

1254. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 18:23:25 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh8hl7ocr28ba7@corp.supernews.com>
Source record: 112597

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vh7e9rcuoojbf5@corp.supernews.com>...
>
>>> So, in theory, if you have achieved a perfect match with your
>>>antenna, you will have matched the impedance to the 377 Ohms of free
>>>space, you will not have reflections at the matching point, and the
>>>energy will radiate in whatever pattern you have designed for.
>>
>>No, an antenna doesn't "match" the impedance of free space. The input
>>impedance of an antenna is the ratio of V to I. The impedance of free
>>space is the ratio of the E field to the H field of a plane wave. They
>>both happen to have units of ohms, but they're different things and
>>there's no "matching" going on. If you apply 100 watts to an antenna,
>>resonant or not, 100 watts will be radiated, less loss, regardless of
>>the antenna's input impedance.
>>
>
>
> I disagree on this point. You can think of an antenna as a type
> of tranformer, from 50 Ohms to 377 Ohms of free space. A tuned
> antenna is "matching" 50 to 377 ohms, and will therefore have no
> reflections, ideally.

Thinking of it doesn't make it so. All the energy applied to the antenna
is radiated, less loss, regardless of the antenna's feedpoint impedance.
How does that fit into your model.

>
> Have you heard of something called mis-match loss? If the
> antenna's input impedance is not matched to the tranmission line (or
> the final PA), then the radiated power will be significantly less than
> 100 watts.
>
I have indeed, and have posted several times about this
often-misunderstood and misused term. You can find the postings by going
to http://www.groups.google.com and searching this group for postings by
me containing "mismatch loss".

>
>
>
>> The funny thing about this, is that you cannot say that the 50
>>
>>>Ohms in the center of the chart is a "resistive" 50 Ohms, as there is

>>>very little real resistance in the average antenna.
>>
>>Sure you can. You're confusing resistance with resistors. Resistance is
>>a dimension, like length. There are lots of things which have dimensions
>>of resistance but aren't resistors, like transresistance, characteristic
>>resistance of a transmission line, or radiation resistance to name just
>>a few. People who have a shaky understanding of basic electric circuit
>>theory seem to have trouble dealing with this, but it becomes easier to
>>deal with as you learn more about basic electricity. A mechanical
>>example is torque and work, which have the same dimensions (force times
>>distance) but are definitely different things.
>>
>
>
>
> ok, so perhaps the way to think of it is: when an antenna is
> matched, the I and V curves

what curves?

will be in phase (no reactance), and the
> product of I*V (integrated) will be the power transmitted.

The average power radiated is always the real part of V*I(conjugate). If
V and I are in phase, this is simply equal to V*I. But what does this
have to do with the confusion between a resistor and resistance?

>
>
>
>> This "resistive"
>>
>>>50 Ohms is really what people call the "radiation" resistance, which
>>>is something of a misnomer again, because this is trying to equate the
>>>successful impedance matching and subsequent non-reflected EM
>>>radiation with a truly real resistance like an ideal dummy load.
>>
>>Sorry, that doesn't make a whole lot of sense. Yes, it's called the
>>radiation resistance, but it's not a misnomer at all. (I suppose it
>>would be if you called it a "radiation resistor", but nobody I know of
>>has ever called it that.) If you calculate the power "consumed" by this
>>resistance (that is, the power flow into it), it's the power being
>>radiated. If the radiation and loss resistance of an antenna were zero,
>>no energy would flow into it and consequently none would be radiated.
>>(If the radiation resistance was zero and the loss resistance wasn't,
>>then energy would flow into the antenna but none would be radiated -- it
>>would all be dissipated as heat.)
>>
>
>
> If both the radiation and loss resistance were zero, i would

> expect an ideal short, and therefore full -180 degree reflections.

You're assuming that the antenna is fed with a transmission line, but
that's ok.
>
> I suppose what this all means is that if you have a matched
> antenna, it's V and I curves

what curves?

will be IN PHASE and will have the exact
> same RMS values as if you had a truly resistive dummy load instead.

Yes and no. If you're feeding the antenna with a 450 ohm line, it's
matched to the line only if its impedance is 450 + j0 ohms, so it looks
like a 450 ohm dummy load, not a 50 ohm one. On the other hand, you can
feed a 50 + j0 ohm antenna with a half wavelength of 450 ohm line, and
get a perfect 50 ohm match to a transmitter at the input end of the
line, while running a 9:1 SWR on the the transmission line. Then either
the antenna or the input of the line looks like a 50 ohm dummy load.

> Therefore, you can consider the center of the Smith Chart (or the
> entire real (non-reactive) impedance line) as a real resistance like
> an ideal dummy load.
>
> Do you agree with this statement Roy?

Yes.

>
>>Your use of "non-reflected EM radiation" seems to imply that the
>>radiation from an antenna is somehow bounced back from space if the
>>antenna feedpoint impedance is reactive. That's one of the rather
>>bizarre and very wrong conclusions you could draw from the mistaken idea
>>that the antenna "matched" the characteristic impedance of free space.
>>
>
>
> I think i'm correct to think of antennas as impedance matching
> transformers.
>
> 50 Ohms to 377 Ohms.

I like to think of 'em as sort of potato guns, launching RF potato
photons into the aether. But that doesn't make them potato guns.

Feel free to think of them any way you like, as long as you consistently
get the right answer.

Now tell me, why can't you just make some 377 ohm transmission line
(easy to make) open circuited, and dispense with the antenna altogether?

When you figure out the answer to that one, you might begin to see the
error with your mental model.

>

> . . .

>
> I believe i understand the Chart better than you think, Roy,
> enough to know that you do know what you are talking about.
>
> I still think it's ok to consider antennas as impedance
> tranformers, but you have brought up some very good points.
>

Ok by me. I'll be waiting for your patented no-antenna 377 ohm feedline.

Roy Lewallen, W7EL

1255. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 18:40:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf1hr2$b2s$1@sparta.btinternet.com>
Source record: 112598

> >The most simple example of a constant-resistance network is a capacitor
in
> >series with a resistor, both in parallel with an inductor in series with
a
> >resistor. When all 4 components have the same value in ohms (R) then the
> >input resistance is a constant resistance R from DC to infinity.
> >----
> >Reg, G4FGQ
> >
>
> Since the reactive components change reactance with frequency, Reg's
network
> may be a little hard to realize in practice. Try making the inductance
equal
> to
> R^2*C Reg. You might have better luck. You also might want to review
> Everitt's
> take on this subject, starting on page 284 of the second edition of his
book,
> _Communication Engineering_. His ideas are quite enlightening.
>
> 73,
> Tom Donaly, KA6RUH
>
==========

Tom, sorry to be so disappointing. My Little formula for calculating L and C for the constant resistance network is quite correct.

When designing constant-resistance networks it is convenient to have a design-frequency.

It can be the frequency at which I said Xc = Xl = R ohms.

So we can now calculate both L and C without prior knowledge of either of them. After a little arithmetic it will be quite enlightening to discover , as you say, that L = C*R^2, but which is a less-convenient starting point.

In addition to a design frequency there can also be a design time constant.

Reg, G4FGQ

1256. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 19:20:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1454e3$1_6@corp.newsgroups.com>
Source record: 112599

Roy Lewallen wrote:
> I'll be waiting for your patented no-antenna 377 ohm feedline.

I wonder if that patent has ever been applied for? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1257. Re: Shielded Loop - Velocity Factor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 19:55:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh8n0v4b8kjpc2@corp.supernews.com>
Source record: 112600

Loopfan wrote:
> . . .
> I have been cutting my coax loops to less than 1/10th of a wavelength
> and also taking the velocity factor of the cable into account. After
> your help with analyzing transmission lines, and proving for myself that
> the outside shield is the antenna by way way of being able to attenuate
> it with an RF choke, I am now wondering if I should *NOT* take the
> velocity factor into account and make my loops with disregard to the
> velocity factor? Or does the jacket contribute to the velocity factor
> of the outer-surface of the cable?

The transmission line velocity factor applies only to the inside of the coax, where the fields are entirely within the dielectric material. Waves on the outside of the shield are propagating at nearly the speed of light. A jacket will slow propagation by somewhere around 2 - 3%.

It's not apparent why you need to worry about the exact electrical size of the loop anyway, unless you're trying to predict with good accuracy how much tuning C you'll need.

> Question 2: Have we come to any conclusions about how the current gets
> from the outer-skin surface of the shield to the inner-skin surface of
> the shield?

Sure. It flows from the outside to inside at the gap, around the cut edges of the shield.

I don't want to rehash an old topic, so I'll be just as
> happy to say that it merely *does*. I'm wondering if there is a field
> set up on the outer skin edge that encompasses the inner-skin edge and
> transfers current that way, or can I view the inner and outer skins as
> more or less the same conductive skin surface that has a 180 degree bend
> in it so that its analogous to the inside and outside being the same
> sort of "outer" skin? Looks like I'm confusing myself...

Actually, you're pretty close. The current simply flows around the edge. It might help to visualize the shield as being hollow, with a separate inner and outer "shell", connected only at the cut end of the gap. That's what it looks like to the RF. The field on the outside of the shield doesn't penetrate the shield, nor does the field on the inside. So the two have no effect on each other -- except at the gap. The current gets from one surface to the other purely by conduction.

> . . .

Roy Lewallen, W7EL

1258. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 20:00:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh8nbs1pkgfl57@corp.supernews.com>
Source record: 112601

W5DXP wrote:
> Roy Lewallen wrote:
>
>> I'll be waiting for your patented no-antenna 377 ohm feedline.
>
>
> I wonder if that patent has ever been applied for? :-)

Considering some of the patents that have been issued, like for the "Faster than light antenna", it wouldn't surprise me. But it's too late to apply now if it hasn't already been done. I proposed this in a posting a few years ago. April 1, I believe it was. The one year limit following public disclosure has long passed.

So it's public domain, guys! Experiment away! Cut down your beams and all those other unnecessary, inefficient "matching" devices, and feed the aether direct!

Roy Lewallen, W7EL

1259. HAMCALC version 65

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 20:03:07 UTC
From: "T.E.O" <rfmscpa@earthlink.net>
Message-ID: <%5ZQa.3234$Mc.305658@newsread1.prod.itd.earthlink.net>
Source record: 112602

Has anyone downloaded HAMCALC version 65 from the QST website & actually got it to work?

I unzipped it to my C: DRIVE as instructed. I have both the VE3ERP file and the GWBASIC file in my root directory.

When I do a RUN: VE3ERP, I get the message "You can not SHELL to BASIC"

1260. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 20:16:29 UTC
From: pbreed@NoSpam.com
Message-ID: <35o8hv4ccf94ipcejkb5vc05ms1ad78afb@4ax.com>
Source record: 112603

>Use the drawing (viewed as its own page)
Maybe I'm not getting it, but you seem to imply that there are things on your page to click on to open in a larger window????

When I load the webpage there is not "Larger" link and the pictures on the webpage are too small to read.

Paul (KL7JG)

On Tue, 15 Jul 2003 17:06:25 GMT, Richard Clark <kb7qhc@comcast.net> wrote:

>On Tue, 15 Jul 2003 09:25:07 -0700, pbreed@NoSpam.com wrote:
>
>>I'm not antenna adept, so in trying to read between the lines I have a few questions
>>
>>Here is my ASCII art diagram....
>>
>>
>> XMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
>> M F
>> M F
>> M F
>> M F
>> M F
>> M F
>> M F
>> M F
>>GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
>
>yup
>
>>
>>M= metal strip.
>>X= corner where metal strip is bent.
>>F = feed
>>G = ground plane.
>>
>>
>>How is the feed setup?
>>If I am driving it with coax the ground braid ends at the ground plane and the center conductor goes
>>up to the FM junction point?
>
>perfect
>

>>
>>
>>The strip is 1/4 wavelength off of the ground plane, but how long is it from the bend to the end?
>>How wide is it?
>>
>>What frequency did you build it for?
>>
>>How did it work?
>>
>>Paul KL7JG
>>
>
>Hi Paul,
>
>Total radiator length (M) is ï¿½ wavelength (approx).
>
>Use the drawing (viewed as its own page) to print a copy and scale all
>dimensions by wavelength. Do not presume any correction factors,
>simply use one Meter to be one Meter (not 0.95 Meter) at one Meter
>wavelength. I deliberately left the segments visible to aid in
>scaling. You should be able to perceive that the structure folds at
>roughly 0.04 wavelength, which is also the height above the ground
>plane. The foreshortened width of the sheet metal is also on the
>scale of 0.04 wavelength.
>
>For your application at 900MHz be aware that even thin wire (as in the
>feed) becomes significantly thick enough to change resonance and feed
>resistance through slight geometrical variations. This is true for
>any construction. That is why I provided the caution that it was
>chosen (or discovered) by trial and error. Given the 10MHz wide 2:1
>BW, discovery covers a lot of turf. By purposely using thick
>components, this becomes less an issue. At these very short
>wavelengths, it is a rather simple matter to build deliberately wide
>resonant (low Q) structures.
>
>73's
>Richard Clark, KB7QHC

1261. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 20:23:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gdo8hvg7k2j8j72rj9511sdnldit8k9bk4@4ax.com>
Source record: 112604

On Tue, 15 Jul 2003 13:16:29 -0700, pbreed@NoSpam.com wrote:

>>Use the drawing (viewed as its own page)
>Maybe I'm not getting it, but you seem to imply that there are things on your page to click
>on to open in a larger window????
>
>When I load the webpage there is not "Larger" link and the pictures on the webpage are too small to read.
>
>Paul (KL7JG)
>

Hi Paul,

Right click the picture and select "View Picture" option. This will
display the picture in its 640x480 native size (the picture is only
reduced on the page, not at the server).

73's
Richard Clark, KB7QHC

1262. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 20:36:22 UTC
From: tdonaly@aol.com
Message-ID: <20030715163622.23369.00000329@mb-m23.aol.com>
Source record: 112605

Reg wrote,
>
>Tom, sorry to be so disappointing. My Little formula for calculating L and
>C for the constant resistance network is quite correct.

Yes, of course, but misleading because it implies that all four components have to have the "same value in ohms (R)." In fact, the input resistance will be the same no matter what the value of the reactive components as long as they obey the requirement that L/C = R^2.

>
>When designing constant-resistance networks it is convenient to have a
>design-frequency.

Convenient, but not necessary to show that constant resistance networks exist.

>
>It can be the frequency at which I said Xc = Xl = R ohms.

It can, indeed, or any other frequency for that matter.

>
>So we can now calculate both L and C without prior knowledge of either of
>them. After a little arithmetic it will be quite enlightening to discover ,
>as you say, that L = C*R^2, but which is a less-convenient starting point.

Perfectly true, but what are you ultimately after?

>
>In addition to a design frequency there can also be a design time constant.

Indeed.

>---
>Reg, G4FGQ
>

Tom Donaly, KA6RUH

1263. Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 21:07:15 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vh8rctbpa2n40d@corp.supernews.com>
Source record: 112606

I wonder if radiated energy would increase measureably if one were to try to balance mobile whip antenna by having another whip connected directly to the body and tuning it. If it would, how would one locate, size, and tune it?
tnx
hank wd5jfr

1264. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 21:26:16 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307151326.7aba92a4@posting.google.com>
Source record: 112607

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f13e703$1_2@corp.newsgroups.com>...
> Dr. Slick wrote:
> > The funny thing about this, is that you cannot say that the 50
> > Ohms in the center of the chart is a "resistive" 50 Ohms, as there is
> > very little real resistance in the average antenna.
>
> From the IEEE Dictionary: "resistance (1)(B) The real part of impedance."
>
> Apparently, all the resistance in the average antenna is real. :-)
> --

You misunderstand my point, Cecil.

If the antenna is tuned correctly, the "radiation" resistance is a
real 50 Ohms, with the V and I waveforms IN PHASE. But, my point is
that you can take a DC measurement anywhere on the ideal lossless
antenna and you will never see 50 Ohms anywhere, only shorts.

Ideally, the antenna never heats up, and has no resistive losses.
This is not to say that it won't have a "radiation" resistance of 50
Ohms at the resonant, tuned frequency. And to a transmitter at the
resonant frequency, this will electrically appear to be the same thing
as an ideal dummy load of 50 Ohms.

Roy's message has clarified a few things.

Slick

1265. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 21:34:28 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf1s14$35l$1@sparta.btinternet.com>
Source record: 112608

> Perfectly true, but what are you ultimately after?

==========

Beyond getting back to the subject matter - nothing!

1266. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 21:44:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <els8hv8n2r8chhjnt2hktaq20lm2v7dle2@4ax.com>
Source record: 112609

On Tue, 15 Jul 2003 16:07:15 -0500, "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>I wonder if radiated energy would increase measureably if one were to try to
>balance mobile whip antenna by having another whip connected directly to the
>body and tuning it. If it would, how would one locate, size, and tune it?
>tnx
>hank wd5jfr
>

Hi Hank,

The body is already the balancing whip you propose. Your addition
would be like adding a thin radial to an already massive one (like the
needle on a cactus).

Actually, what most Hams consider to be their antenna, it is actually
a tuned radial to the larger radiating frame. There is little
distinction between such primitive elements at large wavelengths if
you are talking about 80M or so. Some would argue that their
screwdriver elongates the current loop (the indicator of gain against
the overwhelming short dimensions) to qualify it as radiator, that is
simply a trick of symmetry and their being able to tune a thin element
instead of the more massive one (unless they drive a variable-stretch
limo).

73's
Richard Clark, KB7QHC

1267. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 21:45:28 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307151345.24bfee9a@posting.google.com>
Source record: 112610

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f140b0a$1_5@corp.newsgroups.com>...
> Dr. Slick wrote:
> > Have you heard of something called mis-match loss? If the
> > antenna's input impedance is not matched to the tranmission line (or
> > the final PA), then the radiated power will be significantly less than
> > 100 watts.
>
> Not if there's an antenna tuner (Z0-match) in the circuit. The
> following will radiate most of the mismatch loss from the load.
>
> 100W XMTR--50 ohm feedline--+--1/2WL 150 ohm feedline--50 ohm load
>
> All of the reflected energy is re-routed back toward the load at
> the '+' Z0-match point through re-reflection and wave cancellation.
> --
> 73, Cecil http://www.qsl.net/w5dxp

Why would you need the antenna tuner in this case? Assuming your
XMTR is 50 Ohms on the output:

> 100W XMTR--50 ohm feedline--+---50 ohm load

Voila! A perfect match. No mis-matchlosses, and no need for a
tuner.

Slick

1268. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 22:09:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f147c7b$1_1@corp.newsgroups.com>
Source record: 112611

Dr. Slick wrote:

> W5DXP wrote:
>>Apparently, all the resistance in the average antenna is real. :-)

> You misunderstand my point, Cecil.

Actually, it was a play on words using your definition of "real" Vs
the IEEE Dictionary and mathematical definition of "real". The Devil
made me do it but I did provide a smiley face.
--
73, Cecil http://www.qsl.net/w5dxp

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1269. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-15 22:15:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f147e10_1@corp.newsgroups.com>
Source record: 112612

Dr. Slick wrote:
> Why would you need the antenna tuner in this case? Assuming your
> XMTR is 50 Ohms on the output:
>
> > 100W XMTR--50 ohm feedline--+---50 ohm load
>
> Voila! A perfect match. No mis-matchlosses, and no need for a
> tuner.

Yes, but a real-world antenna rarely has a 50 ohm feedpoint impedance
even though it is resonant. The feedpoint resistance of a resonant
1/2WL dipole can vary from about 40 ohms to about 100 ohms depending
upon its height above ground. And a resonant dipole won't usually
cover the entire 75m band without a tuner of some kind.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1270. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 00:07:31 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <Gx0Ra.1926$C71.417@fe01.atl2.webusenet.com>
Source record: 112613

And, also, from car dealers! for the same reasons (vehicle owners "upgrade"
a cars reciever, and the dealership stuck with the original) Used to get
these for company trucks , that came without radios , for $5-10 bux each!
Jim NN7K

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:vh0ragjiv0ur0b@corp.supernews.com...
> You can find good deals ($1.00 to $20.00) on good used car radios at
garage
> sales. People buy radios with CD players and dump the cassette or no
> cassette versions. Get one, perhaps like the one in your car which you
> know works and buy a 12 volt supply, speaker, and a long piece of wire for
> an antenna and your in good shape. I've done this several times and what
I
> like is that I have pushbuttons for my favorite AM and FM stations. Great
> sound too if you get good speakers, you can find those at sales also.
> 73
> hank wd5jfr

1271. Re: rsgb for ?1.05 or $2 for a year open to all

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 00:11:41 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <zB0Ra.1928$C71.59@fe01.atl2.webusenet.com>
Source record: 112614

actually a bargain, was member for years, at ever higher prices , dropped it
few years ago at 60 bux, but this like a FREE MEMBERSHIP ! NN7K

"VHFRadioBuff" <vhfradiobuff@aol.comspamme> wrote in message
news:20030715084317.12238.00000551@mb-m13.aol.com...
> >There's good spam and bad spam. I once paid $60 for a one-year radcom
> >subscription. If anyone can get it for $2, that's a great deal.
>
> Posting it on rec.radio.amateur is probably appropriate. Posting it on
> rec.radio.antenna and all the other newsgroups is not. His ISP has been
> notified (again).

1272. Re: Six GUARANTEED Paid Sign Ups ARE Money

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 00:15:37 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <fF0Ra.1931$C71.436@fe01.atl2.webusenet.com>
Source record: 112615

Now, this , ON THE OTHERHAND, IS PURE AND SIMPLE TRASH !! Good one to bellyache about! Jim NN7K

"steve parkes" <morewealth@ultimateinbox.com> wrote in message news:03071323244921267@news.blueyonder.co.uk...
> Six GUARANTEED Paid Sign Ups ARE Money
>
> Hello Fellow NetMarketer,
>
> Get Your FREE**SIX GUARANTEED Paid Sign Ups**
> **UNLIMITED Income**
> **Paid DAILY**
> **NO Sponsoring Required**
> **Join with the Financial Peace TEAM**

1273. Re: Shielded Loop - Velocity Factor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 00:16:03 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307151616.70d8d3f1@posting.google.com>
Source record: 112616

Loopfan <bgreer1@earthlink.net> wrote in message
news:<yvXQa.102379$Io.8784543@newsread2.prod.itd.earthlink.net>...
> I have a few more questions, but first I'd like to thank everyone for
> their feedback. After doing some usenet searching, it seems that I am
> retracing the footsteps of those from about 1995 onwards. I'd like to
> thank W7EL, W8JI and others for making my head hurt. <grin> I feel like
> that character in Close Encounters making a mash-potato mountain in his
> living room....
>
> I have been cutting my coax loops to less than 1/10th of a wavelength
> and also taking the velocity factor of the cable into account. After
> your help with analyzing transmission lines, and proving for myself that
> the outside shield is the antenna by way way of being able to attenuate
> it with an RF choke, I am now wondering if I should *NOT* take the
> velocity factor into account and make my loops with disregard to the
> velocity factor? Or does the jacket contribute to the velocity factor
> of the outer-surface of the cable?

Since you're making the loop small compared with a wavelength anyway,
just how does it matter? I would think the difference in feedpoint
impedance (the gap) between jacketed and unjacketed line would be very
small indeed.
>
> Question 2: Have we come to any conclusions about how the current gets
> from the outer-skin surface of the shield to the inner-skin surface of
> the shield? I don't want to rehash an old topic, so I'll be just as
> happy to say that it merely *does*. I'm wondering if there is a field
> set up on the outer skin edge that encompasses the inner-skin edge and
> transfers current that way, or can I view the inner and outer skins as
> more or less the same conductive skin surface that has a 180 degree bend
> in it so that its analogous to the inside and outside being the same
> sort of "outer" skin? Looks like I'm confusing myself...

So one way to make the loop, assuming the gap is at the top, is to
make one side out of coax (which becomes the feedline) and the other
side out of solid rod the same OD as the feedline. Attach the center
conductor of the feedline where it comes out at the gap across the
gap to the center of the solid face of the other side. Equivalently,
make both sides out of coax, but put a shorting disc from outer to
center where the center re-enters the coax after the gap. Now it's
easy to see that the voltage across the gap is simply the voltage
delivered to the feedline.

It's true that whatever current is on the outside of the outer
conductor right at the gap must be balanced by a current on the inside

of the outer conductor on the coax side. Otherwise, charge would pile up at the gap. And on the side with the shorting disc or solid conductor, the current on the outside of the conductor must be balanced by a current in the disk and practically by the same current delivered to the inner conductor of the coax where it attaches to the disk. Again, if it didn't, charge would pile up there. It's OK to pile up a little charge if there's a capacitance to put it on, but in a very small volume, there can't be much capacitance.

Remember, too, that the current is there (in a receiving antenna) because we put a load across the gap by means of the coax feedline. Otherwise, any current would only be there to charge the capacitance of the gap (to a voltage corresponding to the EMF given by Faraday's law, less a tiny I*R drop in the conductor).

Cheers,
Tom

1274. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 00:28:43 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F149C3B.70EBE9F1@uci.edu>
Source record: 112617

W5DXP wrote:
>
> Jim Kelley wrote:
> > So, where does the 33.33 watts in your question go?
>
> The 33.33W is associated with the s-parameter term, a2. So it splits
> into s12*a2 and s22*a2. s12*a2 becomes associated with b1 and s22*a2
> becomes associated with b2.

But where does that 33.33 watts actually go? If you have 100 watts coming from the source, and 100 watts traversing the first and second boundaries, where does the 33.33 watts go?

73, ac6xg

1275. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 00:43:20 UTC
From: denton <denton@oregontrail.net>
Message-ID: <bf26nd$6a6$1@news.oregontrail.net>
Source record: 112618

Ask any trucker about a co-phased cb antenna system....same principal
applies
"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:vh8rctbpa2n40d@corp.supernews.com...
> I wonder if radiated energy would increase measureably if one were to try
to
> balance mobile whip antenna by having another whip connected directly to
the
> body and tuning it. If it would, how would one locate, size, and tune
it?
> tnx
> hank wd5jfr
>
>

1276. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 01:06:01 UTC
From: TeeAye <noway@nohow.com>
Message-ID: <h5ifgienla6b.mlvhta0pm351$.dlg@40tude.net>
Source record: 112519

On Tue, 15 Jul 2003 17:43:20 -0700, denton wrote:

> Ask any trucker about a co-phased cb antenna system....same principal
> applies

No, no, no. Different principle entirely. He's talking about using the second whip connected directly to the body of the vehicle - in effect using it for the missing half of the dipole.

This has been done in the past by a number of folks and they seemed to like it. Whether it is worth the trouble is questionable. Give it a try and let us know how it works out.

--
73, Bill W7TI

1277. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 01:37:32 UTC
From: richardharrison@webtv.net
Message-ID: <15368-3F14AC5C-413@storefull-2313.public.lawson.webtv.net>
Source record: 112521

Dr. Slick wrote:
"But, my point is that you can take a DC measurement anywhere on the ideal lossless antenna and you will never see 50 Ohms anywhere, only shorts."

True. D-C resistance of a lossless wire is zero. But, apply 50 watts r-f power to an antenna adjusted to present 50-ohms resistance at a particular frequency.

What happens? Our loading, adjusted for 50 watts output, produces 50 volts at an in-phase current of 50 amps.

The 50 watts is being radiated. As far as the transmitter is concerned, the power might just as well be feeding a dummy load.

There are several reasons a d-c ohmmeter doesn`t read radiation resistance. Once the ohmmeter`s d-c has charged the antenna, current flow stops. D-C doesn`t radiate. A d-c ohmmeter doesn`t even measure the right loss resistance value. Some of the loss resistance in a true antenna with actual losses, comes from skin effect at radio frequencies, where the conduction is forced to the outside of the conductors, decreasing their effective cross-section and increasing their loss. R-F also has the ability to induce eddy currents in surrounding conductors and to agitate molecular movement in surrounding insulators. R-F thus increases loss over that measured by passing d-c through the antenna.

Radiation resistance can be readily measured by using an r-f bridge instrument. The bridge and antenna are excited by a generator operating at the same frequency the transmitter will use. The bridge will indicate reactance in the antenna, if it is not resonant. The null detector for the bridge is typically a good radio receiver.

Radiation resistance is real though it does not heat the antenna. Loss resistance is real though it does heat the antenna and its surroundings.

A resistance is a volt to amp ratio in which amps are in-phase with the volts.

A resistor is a special type of resistance in which the electrical energy applied to the resistance is converted into heat.

Best regards, Richard Harrison, KB5WZI

1278. efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 01:38:28 UTC
From: Ron <rmrippy@hotmail.com>
Message-ID: <o02Ra.290594$jp.7848137@twister.southeast.rr.com>
Source record: 112520

There doesn't appear to be any ground loss resistance in horizontal antennas (e.g., dipoles) such as there is in verticals. Does this mean that verticals are virtually always less efficient than horizontals due to their ground loss?

Ron

1279. Re: efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 02:00:48 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh9ceshoh40s6d@corp.supernews.com>
Source record: 112522

A vertical dipole, or a base fed half wave vertical, has good efficiency and no significant ground loss. That is, there's no appreciable loss from current flowing through the ground to a feedline terminal. For other verticals, such as a base fed quarter wavelength, ground loss due to return currents can be reduced to an arbitrarily low value by using a good enough system of radials.

However, after the wave is launched from the antenna, vertically polarized signals react differently than horizontally polarized ones when they strike the ground. Horizontally polarized waves are reflected with little loss, except ones at high angles. With vertically polarized waves, it's the low angle ones that take the greatest beating. And since most vertical antennas tend to concentrate radiation at low angles, a very sizable fraction of the total radiated power is often lost in the ground reflection. This mostly takes place well beyond a reasonably sized radial field, so radials don't help. The only way to reduce this loss is to see that the reflection takes place from highly conductive ground, like sea water(*). Otherwise, you lose most of the power that you want the most.

(*) The effective conductivity of the ground improves as frequency decreases. So verticals tend to do better at lower frequencies, and often outperform horizontal dipoles on 160 and 80 meters, even over average ground.

Roy Lewallen, W7EL

Ron wrote:
> There doesn't appear to be any ground loss resistance in horizontal
> antennas (e.g., dipoles) such as there is in verticals. Does this mean
> that verticals are virtually always less efficient than horizontals due
> to their ground loss?
>
> Ron
>
>

1280. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 02:07:10 UTC
From: denton <denton@oregontrail.net>
Message-ID: <bf2bkd$7cf$1@news.oregontrail.net>
Source record: 112523

Ok I stand corrected.....
"TeeAye" <noway@nohow.com> wrote in message
news:h5ifgienla6b.mlvhta0pm351$.dlg@40tude.net...
> On Tue, 15 Jul 2003 17:43:20 -0700, denton wrote:
>
> > Ask any trucker about a co-phased cb antenna system....same principal
> > applies
>
> ----------
>
> No, no, no. Different principle entirely. He's talking about using the
> second whip connected directly to the body of the vehicle - in effect
using
> it for the missing half of the dipole.
>
> This has been done in the past by a number of folks and they seemed to
like
> it. Whether it is worth the trouble is questionable. Give it a try and
> let us know how it works out.
>
> --
> 73, Bill W7TI

1281. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 02:42:39 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <ApWcncWa15mry4iiXTWJjw@comcast.com>
Source record: 112547

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0307150552.733e8268@posting.google.com...
> I disagree on this point. You can think of an antenna as a type
> of tranformer, from 50 Ohms to 377 Ohms of free space. A tuned
> antenna is "matching" 50 to 377 ohms, and will therefore have no
> reflections, ideally.

Look up "Impedance of Free Space"in the Kraus book.

Tam/WB2TT

1282. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 02:42:53 UTC
From: richardharrison@webtv.net
Message-ID: <13017-3F14BBAD-478@storefull-2312.public.lawson.webtv.net>
Source record: 112524

Floyd Davidson wrote:
"And darned if a few years later a build up of rhime ice on the 43 feet of tower above the dish didn`t fall down and bend that dish into a pile of rubble too,"

By Floyd`s logic the lesson must be that a dish must always top the tower, out of harms way.

The antenna does not have to receive zero interference, though that would be nice. We are always susceptible to some interference from somewhere at some time. Multiphop systems often must reuse just a few frequency pairs over and over. It`s all the regulators will allow. Situations arise when anomalous propagation provides strong signals at extraordinary distances.

Planning includes avoiding azimuths which would repeat to present interference at a great distance along with a repetition of a frequency which might interfere. A solution to interference is coordination. Another is often high performance dishes which do a better job of rejection. I`ve used the shielded variety from Antennas For Communications (AFC) with good success.

Ice may be falling, but the sky isn`t in the case of microwave interference.

Best regards, Richard Harrison, KB5WZI

1283. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 03:02:40 UTC
From: richardharrison@webtv.net
Message-ID: <13017-3F14C050-483@storefull-2312.public.lawson.webtv.net>
Source record: 112526

I wrote:
"Our loading adjusted for 50 watts output, produces 50 volts at an
in-phase current of 50 amps."

That`s fantastic, but wrong. The current is 1 amp. No excuses, my mind
strayed.

Best regards, Richard Harrison, KB5WZI

1284. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 03:16:24 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87oezv17qv.fld@barrow.com>
Source record: 112525

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"And darned if a few years later a build up of rhime ice on the 43 feet
>of tower above the dish didn`t fall down and bend that dish into a pile
>of rubble too,"
>
>By Floyd`s logic the lesson must be that a dish must always top the
>tower, out of harms way.

Richard, stop being an ass. Nothing that I've said suggested
any such stupidity, yet you frivolous and insulting.

>The antenna does not have to receive zero interference, though that
>would be nice. We are always susceptible to some interference from
>somewhere at some time.

So you finally got my point! It *is* going to have variations,
and those variations are *not* something you will likely
calculate to with the 1 dB you claimed to do _every_ _single_
time.

>Multiphop systems often must reuse just a few
>frequency pairs over and over. It`s all the regulators will allow.
>Situations arise when anomalous propagation provides strong signals at
>extraordinary distances.

More frivolous commentary that has nothing to do with the topic
of discussion. What is your point?

>Planning includes avoiding azimuths which would repeat to present
>interference at a great distance along with a repetition of a frequency
>which might interfere. A solution to interference is coordination.

Coordination is not optional. You cannot get a station license
without it.

>Another is often high performance dishes which do a better job of
>rejection. I`ve used the shielded variety from Antennas For
>Communications (AFC) with good success.
>
>Ice may be falling, but the sky isn`t in the case of microwave
>interference.

The only sky falling is your claims that you calculate path
losses to within 1 dB for *every single* microwave shot. It
just doesn't work that way Richard, and you are either 1) not
doing many path calculations, or 2) are forgetting about the

ones had some anomolous differences causing unexpected results.

Perhaps 98% of all microwave paths work out just about as expected,
but the other 2% are really interesting and sometimes we never do
figure out exactly what is causing the difference between calculated
and actual results. Any path over tidal water comes to mind... :-)

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1285. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 03:39:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f14ca05_7@corp.newsgroups.com>
Source record: 112527

Jim Kelley wrote:
> But where does that 33.33 watts actually go? If you have 100 watts
> coming from the source, and 100 watts traversing the first and second
> boundaries, where does the 33.33 watts go?

Through a two step process, it merges in phase with the forward wave at the Z0-match point. A directional wattmeter reads 133.33W forward power. 100W + 33.33W = 133.33W. 100W/|1-rho|^2 = 133.33W
Forward power - reflected power = power delivered to the load.
The standing waves confirm that there is indeed 133.33W forward and 33.33W reflected.

Let's look at the following system with two sources. Each source is a signal generator equipped with a circulator and load. SGCL1 is equipped with a 50 ohm circulator and load and SGCL2 is equipped with a 150 ohm circulator and load. The two signal generators are phase locked but can be turned on and off independently.

rho=0.5
100W SGCL1---50 ohm feedline---+---150 ohm feedline---33.33W SGCL2
Pfwd1--> Pfwd2-->
<--Pref1 <--Pref2

Using the principle of superposition: With SGCL1 on and SGCL2 off, Pfwd1=100W, Pref1=25W, Pfwd2=75W, and Pref2=0W. SGCL2 dissipates 75W (Pfwd1)(|rho|^2) and SGCL1 dissipates 25W (Pfwd1)(1-|rho|^2). This is how the s11 and s21 s-parameters are measured.

With SGCL2 on and SGCL1 off, Pfwd1=0W, Pref1=25W, Pfwd2=8.33W, Pref2=33.33W. SGCL2 dissipates 8.33W (Pref2)(|rho|^2) and SGCL1 dissipates 25W (Pref2)(1-|rho|^2). This is how the s12 and s22 s-parameters are measured.

Note that SGCL1 dissipates 25W in both of the above cases.

With SGCL1 and SGCL2 both on, Pfwd1=100W, Pref1=0W, Pfwd2=133.33W, and Pref2=33.33W. This is similar to the earlier single source example. Note that the two 25W waves obviously engage in wave cancellation and their combined 50W of destructive interference joins the forward wave as constructive interference. Assume there is a set of feedline lengths that will accomplish the given values. Vref2 must be 180 degrees out of phase with Vfwd1 at the impedance discontinuity. I think 1WL of 50 ohm feedline and 1/2WL of 150 ohm feedline will do that if the voltages from the two sources are max+ at the same time.

b1 = s11*a1 + s12*a2 = 0V s11*a1 and s12*a2 engage in destructive interference.

Pref1 = Pfwd1(|rho|^2) + Pref2(1-|rho|^2) - destructive interference
0W = 25W + 25W - 50W

Pfwd2 = Pfwd1(1-|rho|^2) + Pref2(|rho|^2) + constructive interference
133.33W = 75W + 8.33W = 50W
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike ..." Albert Einstein

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1286. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 03:44:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f14cb31_7@corp.newsgroups.com>
Source record: 112528

denton wrote:
> Ask any trucker about a co-phased cb antenna system....same principal
> applies

It works on 11m pretty well when the two whips are low loss.
Not well at all on 75m.
--
73, Cecil http://www.qsl.net/w5dxp

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1287. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 03:48:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f14cc1b$1_7@corp.newsgroups.com>
Source record: 112529

Richard Harrison wrote:
> What happens? Our loading, adjusted for 50 watts output, produces 50
> volts at an in-phase current of 50 amps.

Hmmmm, 50 watts in, 2500 watts out. How much will you take for
that antenna, Richard? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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1288. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 04:09:18 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <274Ra.12168$oP3.4433@fe05.atl2.webusenet.com>
Source record: 112530

W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:3f14cb31_7@corp.newsgroups.com...
> denton wrote:
> > Ask any trucker about a co-phased cb antenna system....same principal
> > applies
>
> It works on 11m pretty well when the two whips are low loss.
> Not well at all on 75m.
> --
> 73, Cecil http://www.qsl.net/w5dxp

Well, maybe yes and no. I think I heard that it is called "series tuning".
Now you would have to
mount the things on opposite ends of the car. Whether there is anything to
be gained, I haven't
tested it. It eliminates the matching network, tho. Heck, I've got enough
antennas on my car
without that.

Jerry
K4KWH

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1289. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 04:17:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f14d2e2_7@corp.newsgroups.com>
Source record: 112531

Jerry Oxendine wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote in message
>>It works on 11m pretty well when the two whips are low loss.
>>Not well at all on 75m.
>
> Well, maybe yes and no. I think I heard that it is called "series tuning".

I was thinking it was simply a resonant 1/4WL director or reflector
which would be very lossy on 75m.
--
73, Cecil http://www.qsl.net/w5dxp

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1290. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 05:42:03 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307152142.31f43029@posting.google.com>
Source record: 112532

Roy Lewallen <w7el@eznec.com> wrote in message news:<vh8hl7ocr28ba7@corp.supernews.com>...
> >
> >
> > I disagree on this point. You can think of an antenna as a type
> > of tranformer, from 50 Ohms to 377 Ohms of free space. A tuned
> > antenna is "matching" 50 to 377 ohms, and will therefore have no
> > reflections, ideally.
>
> Thinking of it doesn't make it so. All the energy applied to the antenna
> is radiated, less loss, regardless of the antenna's feedpoint impedance.
> How does that fit into your model.
>

What if the antenna was a wire shorting the transmission line?
Then there would be very little radiated power, and a lot of reflected
power.

You can make a transformer to match 50 Ohms to, say, 200 Ohms or
so. Why not for 50 to 377? It's just another number.

Except in the case of free space, with a given permeability and
permittivity, you have the impedance of free space, which doesn't need
a transmission line.

> >
> > ok, so perhaps the way to think of it is: when an antenna is
> > matched, the I and V curves
>
> what curves?
>

Well, a carrier with a single frequency will be a sinewave,
correct? Feeding a real resistive impedance, the V and the I
sinewaves will be in phase (no reactance).

> will be in phase (no reactance), and the
> > product of I*V (integrated) will be the power transmitted.
>
> The average power radiated is always the real part of V*I(conjugate). If
> V and I are in phase, this is simply equal to V*I. But what does this
> have to do with the confusion between a resistor and resistance?
>

It doesn't really, but it does relate to this discussion. In the
sense that V and I will be in phase for either a matched antenna or an
ideal dummy load.

> >
> > I suppose what this all means is that if you have a matched
> > antenna, it's V and I curves
> will be IN PHASE and will have the exact
> > same RMS values as if you had a truly resistive dummy load instead.
>
> Yes and no. If you're feeding the antenna with a 450 ohm line, it's
> matched to the line only if its impedance is 450 + j0 ohms, so it looks
> like a 450 ohm dummy load, not a 50 ohm one. On the other hand, you can
> feed a 50 + j0 ohm antenna with a half wavelength of 450 ohm line, and
> get a perfect 50 ohm match to a transmitter at the input end of the
> line, while running a 9:1 SWR on the the transmission line. Then either
> the antenna or the input of the line looks like a 50 ohm dummy load.
>

You could make that half wavelength transmission line almost any
other characteristic impedance, like 25 or 200 Ohms, and you would
still wind up back at 50 Ohms at the input of the line (but you
couldn't change frequencies unless they were multiples of 2 of the
fundamental).

But the point is, you will still be at 50 Ohms at the input, so
the V and I sinewaves should be in phase.

> > Therefore, you can consider the center of the Smith Chart (or the
> > entire real (non-reactive) impedance line) as a real resistance like
> > an ideal dummy load.
> >
> > Do you agree with this statement Roy?
>
> Yes.
>

Cool. But a network analyzer looking into a black box will not
be able to tell you whether the 50 Ohms it is reading is radiated
resistance or dissipated resistance. This seems to be the crux of my
question.

>
> Now tell me, why can't you just make some 377 ohm transmission line
> (easy to make) open circuited, and dispense with the antenna altogether?
>
> When you figure out the answer to that one, you might begin to see the
> error with your mental model.
> >
> Ok by me. I'll be waiting for your patented no-antenna 377 ohm feedline.
>
> Roy Lewallen, W7EL

Why would you need a 377 Ohm feedline for free space, when free
space itself is the transmission line??

What's wrong with thinking of an antenna as a type of series Inductor, with a distributed shunt capacitance, that can be thought of as a type of distributed "L" matching network that transforms from 50 Ohms to 377?

This is related to how you need to bend the ground radials of a 1/4 WL vertical whip at 45 deg angles down, to get the input impedance closer to 50 Ohms (as opposed to 36 Ohms or something like that if you leave them horizontal).

Slick

1291. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 05:45:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307152145.4a30f49f@posting.google.com>
Source record: 112533

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0307150957.69dbf89@posting.google.com>...
>
> But for ham applications, do you really care about all this? There's
> probably not a need to, if you're just trying to get power to an
> antenna, but if you care because you simply want to learn how to build
> a precision system and make precision measurements, that's fine too.
> You should be able to find lots of info on the web about that...try,
> for example, to find Hewlett-Packard/Agilent ap notes on RF
> measurements and calibrations.
>
> Cheers,
> Tom

When you are trying to design a 9 element Chebychev low-pass
filter, it becomes important to test it will a 50 Ohm dummy load that
doesn't drift all over the place at higher frequencies.

Slick

1292. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 05:58:18 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307152158.6bc92652@posting.google.com>
Source record: 112534

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<23393-3F141C1A-312@storefull-2315.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "The funny thing about this is that you cannot say that the 50 ohms in
> the center of the chart is a "resistive" 50 ohms as there is very little
> real resistance in the average antenna."
>
> Resistance is defined as real. That is, current is instantaneously
> proportional to the voltage.
>
> Any efficient antenna has a high ratio of radiation resistance to loss
> resistance.
>

Ok, i stand partially corrected. I should have stated this:

"You cannot tell if the 50 Ohms reading on a Network analyzer into
a Black Box is a dissipative resistance like a dummy load, or if it is
a radiated resistance of a perfectly matched antenna. You don't have
that information."

Richard, I like your definition of real: "Resistance is defined
as real. That is, current is instantaneously proportional to the
voltage."

In other words, the V and I sine waves will be IN PHASE.

This clarifies it more for me. BOTH the radiation resistance and
the dissipative resistance of a dummy load are both "real" resistive
impedances.

Thanks,

Slick

1293. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 06:09:49 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307152209.653c53a4@posting.google.com>
Source record: 112535

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<15368-3F14AC5C-413@storefull-2313.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "But, my point is that you can take a DC measurement anywhere on the
> ideal lossless antenna and you will never see 50 Ohms anywhere, only
> shorts."
>
> True. D-C resistance of a lossless wire is zero. But, apply 50 watts r-f
> power to an antenna adjusted to present 50-ohms resistance at a
> particular frequency.
>
> What happens? Our loading, adjusted for 50 watts output, produces 50
> volts at an in-phase current of 50 amps.
>

That would be 2500 watts? I assume you mean 50 volts and 1 amp to
get 50 watts.

> Radiation resistance can be readily measured by using an r-f bridge
> instrument. The bridge and antenna are excited by a generator operating
> at the same frequency the transmitter will use. The bridge will indicate
> reactance in the antenna, if it is not resonant. The null detector for
> the bridge is typically a good radio receiver.
>
> Radiation resistance is real though it does not heat the antenna. Loss
> resistance is real though it does heat the antenna and its surroundings.
>
> A resistance is a volt to amp ratio in which amps are in-phase with the
> volts.
>

The key here is IN-PHASE. If you read my other post, you and Roy
have clarified this for me: Both radiation resistance and dissipative
resistance are the real portion of the impedance.

> A resistor is a special type of resistance in which the electrical
> energy applied to the resistance is converted into heat.
>

With very little radiated energy.

Thanks for the input,

Slick

1294. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 06:13:20 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307152213.335549d2@posting.google.com>
Source record: 112536

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030715112010.03466.00000508@mb-m05.aol.com>...

> Slick,
> You're not going to make many points on this or any other newsgroup just by
> using rudeness as an argument. You need to read more books, Slick, so
> you'll have more to add to a discussion than an attitude. You should also read
>
> Richard's posts very carefully and try to figure out what he's saying before
> you
> fly off the handle and assume the attitude of an angry, petulant child. You'll
> learn something and possibly avoid being made a fool of by some of the more
> technically sophisticated members of this newsgroup.
> 73,
> Tom Donaly, KA6RUH

That's a joke, Tom. Because I was asking the questions, and
Richard gave me the attitude FIRST, in addition to clearly NOT adding
to the discussion like Roy has.

Slick

1295. Re: Shielded Loop - Velocity Factor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 06:15:59 UTC
From: Loopfan <bgreer1@earthlink.net>
Message-ID: <z46Ra.4157$Mc.372592@newsread1.prod.itd.earthlink.net>
Source record: 112538

Hello Roy!

Roy Lewallen wrote:

> The transmission line velocity factor applies only to the inside of the
> coax, where the fields are entirely within the dielectric material.
> Waves on the outside of the shield are propagating at nearly the speed
> of light. A jacket will slow propagation by somewhere around 2 - 3%.

Great. Makes sense now.

> It's not apparent why you need to worry about the exact electrical size
> of the loop anyway, unless you're trying to predict with good accuracy
> how much tuning C you'll need.

Well, I was thinking about trying to maximize the area surrounded by the loop up to about 1/10th of a wavelength or so. What I found was that the distributed capacitance of my cable at this length was too much for my tuner to handle. So when I multiplied this length by my cable's velocity factor, 0.66, suddenly the tuner could handle it and the loop came alive! THIS is what got me on the wrong path thinking that the center conductor was the antenna, and that I had discovered some overlooked secret about the velocity factor. I was obviously mistaken.

> Actually, you're pretty close. The current simply flows around the edge.
> It might help to visualize the shield as being hollow, with a separate
> inner and outer "shell", connected only at the cut end of the gap.

Right. Kind of like a hollow knife blade. You've got two physical sides that meet at a cutting edge, but if you examine it closely, you'll see that we are only really dealing with one outer conductive surface "folded" so to speak back on itself. The edges of the exposed gap wires represent the cutting edge - a small distance to be sure, but it is a length of conductive material making a seamless join. Two sides, but one surface.

Thanks again for the help.

73
Brian

1296. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 06:17:03 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307152217.1429f0d@posting.google.com>
Source record: 112537

richardharrison@webtv.net (Richard Harrison) wrote in message news:<15368-3F14AC5C-413@storefull-2313.public.lawson.webtv.net>...

> True. D-C resistance of a lossless wire is zero. But, apply 50 watts r-f
> power to an antenna adjusted to present 50-ohms resistance at a
> particular frequency.
>
> What happens? Our loading, adjusted for 50 watts output, produces 50
> volts at an in-phase current of 50 amps.

Hmmmmmmmm....

Cheers,
Tom

1297. Re: Shielded Loop - Velocity Factor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 06:33:40 UTC
From: Loopfan <bgreer1@earthlink.net>
Message-ID: <8l6Ra.4173$Mc.374889@newsread1.prod.itd.earthlink.net>
Source record: 112540

Hello Tom!

> Since you're making the loop small compared with a wavelength anyway,
> just how does it matter? I would think the difference in feedpoint
> impedance (the gap) between jacketed and unjacketed line would be very
> small indeed.

I was just trying to follow the mantra of trying to enclose as much area as possible. I found that in the end it wasn't as critical as I thought, ie changing a 10-foot circumference loop to 7-feet. As long as I could get my tuner to handle it, it seemed that the Q of the circuit made up for the small difference in the loss of the capture area. So in the end, you are right, the difference in feedpoint impedance wasn't too critical.

> So one way to make the loop, assuming the gap is at the top, is to
> make one side out of coax (which becomes the feedline) and the other
> side out of solid rod the same OD as the feedline. Attach the center

<snip>
Yup! Once I had accepted the fact that the shield is the antenna, all the other loops I made with one half of the loop being solid wire, shorted coax pieces, cross-connects etc, all made sense. They all worked nearly the same except for some very slight inbalances in the directional pattern, and some small differences in the depth of the nulls. The light bulb turned on in my head, and now I could stop cutting up so much coax. <grin>

> Remember, too, that the current is there (in a receiving antenna)
> because we put a load across the gap by means of the coax feedline.
> Otherwise, any current would only be there to charge the capacitance
> of the gap (to a voltage corresponding to the EMF given by Faraday's
> law, less a tiny I*R drop in the conductor).

Aha! As in putting say a gapped director or reflector element built out of copper tubing in front or behind of my coax-built rx loop. Now that would be interesting, although most likely a mechanical nightmare.

Good info!

73
Brian

1298. Re: HAMCALC version 65

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 06:34:26 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0307152234.175046ad@posting.google.com>
Source record: 112539

"T.E.O" <rfmscpa@earthlink.net> wrote in message
news:<%5ZQa.3234$Mc.305658@newsread1.prod.itd.earthlink.net>...
> Has anyone downloaded HAMCALC version 65 from the QST website & actually got
> it to work?
>
Hi, download the 66 version, it seems to run O.K.

BR Ivan OK1SIP

1299. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 06:36:40 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F14F278.4604714@cwis.net>
Source record: 112541

denton,
Exactly which 'principal' is that? The two situtions
are not the same at all. As for asking a 'CB'er about
co-phased antennas, I wish I had a dime for everyone that
didn't work as it was supposed to...
'Doc

1300. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 07:12:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vh9untfnbtf294@corp.supernews.com>
Source record: 112542

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vh8hl7ocr28ba7@corp.supernews.com>...
>
>>>
>>> I disagree on this point. You can think of an antenna as a type
>>>of tranformer, from 50 Ohms to 377 Ohms of free space. A tuned
>>>antenna is "matching" 50 to 377 ohms, and will therefore have no
>>>reflections, ideally.
>>
>>Thinking of it doesn't make it so. All the energy applied to the antenna
>>is radiated, less loss, regardless of the antenna's feedpoint impedance.
>>How does that fit into your model.
>>
>
>
> What if the antenna was a wire shorting the transmission line?
> Then there would be very little radiated power, and a lot of reflected
> power.

Yes, there would. But every watt delivered to that wire would be either
radiated or dissipated.

> You can make a transformer to match 50 Ohms to, say, 200 Ohms or
> so. Why not for 50 to 377? It's just another number.

That's right. You can make a transformer that converts the circuit V/I
ratio to 377 ohms. But this doesn't make a plane wave whose E to H field
ratio is 377 ohms. But you can have an antenna with a feedpoint
impedance of, say, 3 - j200 ohms, and a couple of wavelengths from the
antenna, the ratio of E to H field produced by that antenna will be 377
ohms. Another antenna, with feedpoint impedance of 950 + j700 ohms, will
also produce a fields whose E to H ratio is 377 ohms. In fact, you can
have any antenna impedance you'd like, and a few wavelengths away, the
ratio of E to H field will be 377 ohms, provided the antenna is immersed
in something resembling free space. But the fields in, on, or around a
377 ohm transmission line are unlikely to have an E to H ratio of 377 ohms.

You're trying to say that the 377 ohm E/H ratio of free space is the
same thing as a V/I ratio of 377 ohms. It isn't. Any more than 10 ft-lbs
of torque is the same as 10 ft-lbs of work or energy.

> Except in the case of free space, with a given permeability and
> permittivity, you have the impedance of free space, which doesn't need
> a transmission line.

Sorry, I can't make any sense out of that.
>
>>> ok, so perhaps the way to think of it is: when an antenna is
>>>matched, the I and V curves
>>
>>what curves?
>>
>
>
> Well, a carrier with a single frequency will be a sinewave,
> correct? Feeding a real resistive impedance, the V and the I
> sinewaves will be in phase (no reactance).
>
Yes.
>
>> will be in phase (no reactance), and the
>>
>>>product of I*V (integrated) will be the power transmitted.
>>
>>The average power radiated is always the real part of V*I(conjugate). If
>>V and I are in phase, this is simply equal to V*I. But what does this
>>have to do with the confusion between a resistor and resistance?
>>
>
>
> It doesn't really, but it does relate to this discussion. In the
> sense that V and I will be in phase for either a matched antenna or an
> ideal dummy load.

V and I will be in phase at the feedpoint of a purely resistive antenna.
This is true whether or not it's matched to the transmission line
feeding it, or whether the transmission line is matched to the antenna.
The relative phase of V and I at the antenna terminals has nothing to do
with whether the antenna or transmission line are matched. It also
doesn't matter what fraction of that resistance represents energy
dissipated locally and how much represents energy radiated.

>
>
>
>>> I suppose what this all means is that if you have a matched
>>>antenna, it's V and I curves
>>
>>will be IN PHASE and will have the exact
>>
>>>same RMS values as if you had a truly resistive dummy load instead.
>>
>>Yes and no. If you're feeding the antenna with a 450 ohm line, it's
>>matched to the line only if its impedance is 450 + j0 ohms, so it looks
>>like a 450 ohm dummy load, not a 50 ohm one. On the other hand, you can
>>feed a 50 + j0 ohm antenna with a half wavelength of 450 ohm line, and
>>get a perfect 50 ohm match to a transmitter at the input end of the

>>line, while running a 9:1 SWR on the the transmission line. Then either
>>the antenna or the input of the line looks like a 50 ohm dummy load.
>>
>
>
> You could make that half wavelength transmission line almost any
> other characteristic impedance, like 25 or 200 Ohms, and you would
> still wind up back at 50 Ohms at the input of the line (but you
> couldn't change frequencies unless they were multiples of 2 of the
> fundamental).
>
> But the point is, you will still be at 50 Ohms at the input, so
> the V and I sinewaves should be in phase.
>
At the input and output of the line, yes.
>
>>>Therefore, you can consider the center of the Smith Chart (or the
>>>entire real (non-reactive) impedance line) as a real resistance like
>>>an ideal dummy load.
>>>
>>> Do you agree with this statement Roy?
>>
>>Yes.
>>
>
>
> Cool. But a network analyzer looking into a black box will not
> be able to tell you whether the 50 Ohms it is reading is radiated
> resistance or dissipated resistance. This seems to be the crux of my
> question.

You're right. The network analyzer can't tell you what's happening to those watts going into the antenna. Too bad. If it could, we'd have a really cool, easy way to measure antenna efficiency, wouldn't we?

But it's worse than that. If you connect the network analyzer to two series resistors, it can't even tell how much power is going to each one! And it can't even tell the difference between a 50 ohm resistor, a 100 ohm resistor on the other side of a 2:1 impedance transformer, a 100 ohm resistor on the other end of a quarter wavelength of 70.7 ohm transmission line, or a really long piece of lossy 50 ohm transmission line. Boy, they sure are stupid.

How come nobody complains that the impedance of a light bulb, an LED, or a loaded electric motor is resistive? It's too bad it is, too. Otherwise, the power company wouldn't charge us for the power we're using to run those things. Neither the power company nor the network analyzer knows or cares how much of the power going to a light bulb or LED is converted to light and how much to heat, or how much of the power going to an electric motor is doing work.

If we insist on separating all resistance into "dissipative" and "dissipationless" categories, we have to consider time. Within a small fraction of a second, most of the energy going into an antenna is dissipated -- mostly in the ground or (at HF) the ionosphere. So we'll have to consider that portion of the radiation resistance as "dissipative". The stuff that goes into space will take longer to turn into heat, but it will eventually. So the remainder of the radiation resistance is one that's initially dissipationless but becomes dissipative with time. Just think, we can have a whole new branch of circuit theory to calculate the time constants and mathematical functions involved in the transition between dissipationless and dissipative states! And of course it would have to be cross-disiplinary, involving cosmology, meteorology, and geology at the very least. There are textbooks to be written! PhD's to earn! Just think of the potential papers on the resistance of storage batteries alone! High self-discharge rate means a faster transition from dissipationless to dissipative. . .

Sorry, I digress. I just get so *excited* when I think of all the possibilities this opens up for all those folks living drab and boring lives and with so much time and so little productive to do. . .

But has this bastard creation really simplified things or enhanced understanding?

>>Now tell me, why can't you just make some 377 ohm transmission line
>>(easy to make) open circuited, and dispense with the antenna altogether?
>>
>>When you figure out the answer to that one, you might begin to see the
>>error with your mental model.
>>
>>Ok by me. I'll be waiting for your patented no-antenna 377 ohm feedline.
>>
>>Roy Lewallen, W7EL
>
>
>
> Why would you need a 377 Ohm feedline for free space, when free
> space itself is the transmission line??

By golly, you're right. Design your transmitter for 377 ohm output and do away with the transmission line, too. Just let them joules slip right out, perfectly matched, right straight to free space. Voila!

> What's wrong with thinking of an antenna as a type of series
> Inductor, with a distributed shunt capacitance, that can be thought of
> as a type of distributed "L" matching network that transforms from 50
> Ohms to 377?

Because that's not what it does, and thinking of it that way leads you to impossible conclusions. The antenna is converting power to E and H fields. The ratio of E to H, or the terminal V to I are immaterial to the conversion process. You're continuing to be suckered into thinking that because the ratio of E to H in free space has the dimensions of

ohms that it's the same thing as the ratio of V to I in a circuit. It isn't. A strand of spaghetti one foot long isn't the same thing as a one foot stick of licorice, just because the unit of each is a foot.

> This is related to how you need to bend the ground radials of a
> 1/4 WL vertical whip at 45 deg angles down, to get the input impedance
> closer to 50 Ohms (as opposed to 36 Ohms or something like that if you
> leave them horizontal).

There are a number of ways in which an antenna and transmission line are similar. But don't take the analogy too far. Start with a quarter wavelength transmission line, start splitting the conductors apart until they're opposed like a dipole, and tell me how you've ended up with an input impedance of 73 ohms.

There are plenty of texts you can read, on all different levels, if you're really interested in learning about antennas, fields, and waves.

Roy Lewallen, W7EL

1301. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 07:51:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ls0ahvk8iq6e5sfcm0v4hsj0er98rcpikf@4ax.com>
Source record: 112543

On Wed, 16 Jul 2003 00:12:46 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>
>Sorry, I digress. I just get so *excited* when I think of all the
>possibilities this opens up for all those folks living drab and boring
>lives and with so much time and so little productive to do. . .
>
>But has this bastard creation really simplified things or enhanced
>understanding?
>

Hi Roy,

Losing sleep over this? ;-)

73's
Richard Clark, KB7QHC

1302. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 11:27:49 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <VEaRa.63687$GL4.16614@rwcrnsc53>
Source record: 112544

I would like one of those antennas!!

BTW, it should be patented!! It looks better than some I've read about!!

;-)

DD, W1MCE

W5DXP wrote:

> Richard Harrison wrote:
>
>> What happens? Our loading, adjusted for 50 watts output, produces 50
>> volts at an in-phase current of 50 amps.
>
>
> Hmmmm, 50 watts in, 2500 watts out. How much will you take for
> that antenna, Richard? :-)

1303. Re: HAMCALC version 65

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 11:29:42 UTC
From: "Wolfgang K. Meister" <no.mail@please.com>
Message-ID: <s8dahvsarj9d7m2g7q1c5os1jb0p4f7glg@4ax.com>
Source record: 112545

On Tue, 15 Jul 2003 20:03:07 GMT, "T.E.O" <rfmscpa@earthlink.net>
wrote:

>When I do a RUN: VE3ERP, I get the message "You can not SHELL to BASIC"

I am not 100% sure if this is the solution - but HAMCALC wants the
.bat file in the root directory, so in your case it's C:\

I have installed it in a directory and use the following .bat file to
call it:

```
echo off
cls
subst y: f:\hamcalc
y:
cd\
gwbasic \hamcalc\prog\intro
subst y: /d
f:
cd\hamcalc
```

as you see, I am 'subst'ituting the Y: drive with the existing
F:\HAMCALC In this directory ist the .bat file

Attention: under this f:\HAMCALC is another HAMCALC, so it's
F:\HAMCALC

\HAMCALC
\ (here are all the other dirs)

Is the GWBASIC.EXE either in the root directory or anywhere in one of
the directories with a pointer by the 'path' environment variable ?

73's

Wolfgang
OE1MWW

1304. Re: HAMCALC version 65

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 11:35:12 UTC
From: "Wolfgang K. Meister" <no.mail@please.com>
Message-ID: <82eahvoki4c1o2dq0b7ols9t5s2qk124hp@4ax.com>
Source record: 112546

On 15 Jul 2003 23:34:26 -0700, remove_ok1sip@atlas.cz (OK1SIP) wrote:

>Hi, download the 66 version, it seems to run O.K.
>
Ivan - you got an URL for the ver 66 please ? The latest I could find
was ver 64

73's
Wolfgang
OE1MWW

1305. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 13:58:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f155b19_5@corp.newsgroups.com>
Source record: 112548

Dr. Slick wrote:
> "You cannot tell if the 50 Ohms reading on a Network analyzer into
> a Black Box is a dissipative resistance like a dummy load, or if it is
> a radiated resistance of a perfectly matched antenna. You don't have
> that information."

Conversion of RF energy to heat can be measured. Conversion of RF energy
to EM radiation can be measured.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1306. Re: How to adjust dualband mobile antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 14:10:07 UTC
From: vhfradiobuff@aol.com
Message-ID: <5e5fccab.0307160610.a076b12@posting.google.com>
Source record: 112549

vhfradiobuff@aol.comspamme (VHFRadioBuff) wrote in message
news:<20030619004309.13678.00000867@mb-m25.aol.com>...
> Thanks for the suggestions. I ended up buying a Comet CA-2X4SR antenna. They
> advertise it as a wideband antenna with a 1.5 SWR from 140 - 160. We'll see...

For those of you that were reading this thread recently, I thought I'd
let you know that the CA-2X4SR arrived and I finally got around to
installing it today. The SWR is less than 2:1 from 140 mhz - 171 mhz
out of the box! I didn't bother to tune it at all!

1307. Re: lining up microwave antenna's

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 16:40:31 UTC
From: richardharrison@webtv.net
Message-ID: <6238-3F157FFF-81@storefull-2315.public.lawson.webtv.net>
Source record: 112551

Floyd Davidson wrote:
"The only sky falling is your claim that you calculate path losses to within 1 dB for every single microwave shot."

I wrote many boring postings ago:
"---my best received carrier power was very nearly always within a db of my calculations."

That was very nearly, not every single microwave shot. That was during normal propagation conditions, not during fades. It was and is a true statement. Such results can be achieved by anyone who plans the system correctly using the required accurate information.

Best regards, Richard Harrison, KB5WZI

1308. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 17:04:17 UTC
From: richardharrison@webtv.net
Message-ID: <6238-3F158591-82@storefull-2315.public.lawson.webtv.net>
Source record: 112552

Cecil, W5DXP wrote:
"Let`s look at the following system with two sources,"

Is this tempest about creation of an oppositely phased wave to cancel a reflection?

A way to avoid reflected waves within a waveguide is mentioned by Terman on page 148 of his 1955 edition:

"Create a reflected wave near the load that is equal in magnitude but opposite in phase from the wave reflected by the load; in this way the two reflected waves cancel each other."

"Some of these (matching arrangements) are analogous to the impedance matching arrangements employed in transmission lines (described in Sec. 4-11) while others are unique to waveguides."

Best regards, Richard Harrison, KB5WZI

1309. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 17:24:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <pd2bhvoaa31esse7br48m3ugkb82dimji4@4ax.com>
Source record: 112553

On Wed, 16 Jul 2003 12:04:17 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Is this tempest about creation of an oppositely phased wave to cancel a
>reflection?
>
Richard, you are spitting into the wind. Only Cecil would call that
reflection a fresh ocean mist. :-)

73's
Richard Clark, KB7QHC

1310. Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 18:17:54 UTC
From: Dilon Earl <dilon_earl@mail.com>
Message-ID: <3f159356.21682497@140.99.99.130>
Source record: 112554

On Tue, 15 Jul 2003 01:20:02 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>
>No, an antenna doesn't "match" the impedance of free space. The input
>impedance of an antenna is the ratio of V to I. The impedance of free
>space is the ratio of the E field to the H field of a plane wave. They
>both happen to have units of ohms, but they're different things and
>there's no "matching" going on. If you apply 100 watts to an antenna,
>resonant or not, 100 watts will be radiated, less loss, regardless of
>the antenna's input impedance.
>Roy Lewallen, W7EL

Roy;
Hope you don't mind if I ask you a couple of questions about your
last sentence.
Given a 75 ohm dipole fed 100 watts with 75 0hm coax. Assume no
losses, now if the antenna's input impedance is changed to say 50 ohms
(non-reactive). You would have some loss with the mismatch between
the coax and antenna?
The transmitter would see 50 ohms?

1311. ATAS 120

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 18:20:37 UTC
From: alcca@aol.com
Message-ID: <20030716142037.14537.00000033@mb-m04.aol.com>
Source record: 112555

Hi, I am thinking of getting a Yaesu 897 with the ATAS 120 antenna for both mobile and base operation. My problem is that I live in a condo which does not allow antennas on the roof. I have been thinking of getting the MFJ 1904 which is a 2' X 2" stainless steel base and mounting the ATAS 120 with an extension (to keep RF away from me and also to get it as close as possible to the cathedral ceiling). What do you guys think of such an arrangement.
Thanks
Al Casanova
KE4MNF

1312. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 18:38:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhb6tkgc0vkb06@corp.supernews.com>
Source record: 112556

Dilon Earl wrote:
> On Tue, 15 Jul 2003 01:20:02 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>No, an antenna doesn't "match" the impedance of free space. The input
>>impedance of an antenna is the ratio of V to I. The impedance of free
>>space is the ratio of the E field to the H field of a plane wave. They
>>both happen to have units of ohms, but they're different things and
>>there's no "matching" going on. If you apply 100 watts to an antenna,
>>resonant or not, 100 watts will be radiated, less loss, regardless of
>>the antenna's input impedance.
>>Roy Lewallen, W7EL
>
>
> Roy;
> Hope you don't mind if I ask you a couple of questions about your
> last sentence.
> Given a 75 ohm dipole fed 100 watts with 75 0hm coax. Assume no
> losses, now if the antenna's input impedance is changed to say 50 ohms
> (non-reactive). You would have some loss with the mismatch between
> the coax and antenna?

Mismatch does not cause loss (that is, conversion of electrical energy to heat), except that the loss of a lossy transmission line will increase (very slightly unless initial loss is great) when SWR is elevated. In this case, the line SWR would be 1.5:1, which would not cause a significant amount of extra loss even if the cable were very lossy when matched. So the answer is no.

> The transmitter would see 50 ohms?
>

The transmitter could see any of a variety of impedances, depending on the length of the 75 ohm transmission line. Only if the line were an exact multiple of an electrical half wavelength would the transmitter see 50 ohms, resistive. If the line were an odd number of quarter wavelengths, the transmitter would see 112.5 ohms, resistive. At all other lengths, the transmitter would see a complex (partly resistive and partly reactive) load.

There is a term called "mismatch loss", which is widely misunderstood in the amateur community because of its name. It doesn't really represent loss at all, but a signal reduction for other reasons. I've explained this before in this newsgroup, so if you're interested, you should be

able to find my earlier postings via http://www.groups.google.com.

Roy Lewallen, W7EL

1313. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 19:24:10 UTC
From: TeeAye <noway@nohow.com>
Message-ID: <1ooligwirv25h$.wz8iqdmfpaoe.dlg@40tude.net>
Source record: 112557

On Tue, 15 Jul 2003 11:52:21 -0400, Radio Amateur KC2HMZ wrote:

> My understanding of that setup is that the two cophased whips need to
> be a quarter wavelength apart in order for it to work properly,
> although I may have been misinformed.

The original question was *not* about co-phasing. It was about using another whip as a replacement for the missing half of a dipole. The second whip would be connected directly to the car body and become an extension of the body.

Totally different from co-phasing.

--
73, Bill W7TI

1314. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 19:32:43 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f15a953_7@corp.newsgroups.com>
Source record: 112558

TeeAye wrote:
> The original question was *not* about co-phasing. It was about using
> another whip as a replacement for the missing half of a dipole. The second
> whip would be connected directly to the car body and become an extension of
> the body.

Assuming one whip is pointing up, which way is the other whip pointing?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1315. Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 19:39:20 UTC
From: Raphael Clancy <rafemonkey@yah00.c0m>
Message-ID: <Xns93BA807DFC297rafemonkeyyahoocom@63.240.76.16>
Source record: 112561

I'm building a simple radio telescope, using an array of dipole antennas, but I have a few questions. (Note: I've had a year of physics, but no electronics... so please go easy on me) ;)

1. I've heard the the dipole should be 1/4 of the wave-length above the ground... is this so that the total distance (antenna-ground-antenna) is 1/2 the wave-length (the fundamental mode)?

2. I've also heard that the cables connecting the antenna to the reciver should be in multiples of 1/2 the wave-length. How important is this?

3. To improve signal strength, I'm building three antennas. How far apart should they be spaced?

TIA!

R.

1316. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 19:41:34 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F15AA6E.1050505@mwci-news>
Source record: 112559

Roy Lewallen wrote:
>
> There is a term called "mismatch loss".

If a 50 ohm generator is connected to a 50 ohm resistor (or resistance), the maximum possible power is delivered to the load.

If the load is greater than or less than than 50 ohms resistor (or resistance) the power delivered to the load is less than the maximum possible.

The ratio of maximum power (50 ohm load) to actual power (<50 ohms or >50 ohms) is the mismatch loss. It is almost always expressed in dB.

The ARRL Handbook Chapter 17 discusses this topic.

Bill W0IYH

1317. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 19:54:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f15ae5a$1_7@corp.newsgroups.com>
Source record: 112560

William E. Sabin wrote:
> If a 50 ohm generator is connected to a 50 ohm resistor (or resistance),
> the maximum possible power is delivered to the load.

Maybe it should be "maximum *available* steady-state power" which is
not always the same thing as "maximum "possible" power"? :-)

And the 50 ohm resistance can be the V/I ratio looking into a Z0-match
point with a high mismatch loss between the Z0-match and a mismatched
antenna, i.e. maximum available power (minus feedline losses) can still
be delivered to a mismatched load by doing the matching back down the
transmission line, e.g. an antenna tuner.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1318. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 20:22:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F15B3EA.E188A240@uci.edu>
Source record: 112562

W5DXP wrote:
> A directional wattmeter reads 133.33W forward power.
> 100W + 33.33W = 133.33W. 100W/|1-rho|^2 = 133.33W
> Forward power - reflected power = power delivered to the load.
> The standing waves confirm that there is indeed 133.33W forward and
> 33.33W reflected.

So where does the 33.33 watts actually go? The 100 watt number seems to
account for all of the transfer of energy.

> Let's look at the following system with two sources. Each source is a
> signal generator equipped with a circulator and load. SGCL1 is equipped
> with a 50 ohm circulator and load and SGCL2 is equipped with a 150 ohm
> circulator and load. The two signal generators are phase locked but can
> be turned on and off independently.

> rho=0.5
> 100W SGCL1---50 ohm feedline---+---150 ohm feedline---33.33W SGCL2
> Pfwd1--> Pfwd2-->
> <--Pref1 <--Pref2
>
> Using the principle of superposition: With SGCL1 on and SGCL2 off,
> Pfwd1=100W, Pref1=25W, Pfwd2=75W, and Pref2=0W. SGCL2 dissipates 75W
> (Pfwd1)(|rho|^2) and SGCL1 dissipates 25W (Pfwd1)(1-|rho|^2).

> With SGCL2 on and SGCL1 off, Pfwd1=0W, Pref1=25W, Pfwd2=8.33W,
> Pref2=33.33W. SGCL2 dissipates 8.33W (Pref2)(|rho|^2) and SGCL1 dissipates
> 25W (Pref2)(1-|rho|^2). This is how the s12 and s22 s-parameters are
> measured.
>
> Note that SGCL1 dissipates 25W in both of the above cases.
>
> With SGCL1 and SGCL2 both on, Pfwd1=100W, Pref1=0W, Pfwd2=133.33W, and
> Pref2=33.33W. This is similar to the earlier single source example.

Except for the amount of power input. Although you didn't mention it
explicitly, I assume SGCL2 inputs 33.33 watts. Obviously there's that
much more power being input to the network in this example that the
others we've worked on.

> Note
> that the two 25W waves obviously engage in wave cancellation and their
> combined 50W of destructive interference joins the forward wave as constructive
> interference.

I note that interference takes place.

> Assume there is a set of feedline lengths that will accomplish
> the given values. Vref2 must be 180 degrees out of phase with Vfwd1 at the
> impedance discontinuity. I think 1WL of 50 ohm feedline and 1/2WL of 150 ohm
> feedline will do that if the voltages from the two sources are max+ at the
> same time.

Well, you won't get a phase reversal from reflection at the 150/50 ohm boundary as you would with the 150/450 ohm boundary in our other problem, so I think the 150 ohm feedline would need to be an odd number of 1/4WL's in order to put Vref1 out of phase with Vfwd1 at the first boundary. But since we're really interested in the relative phase between Vref2 and Vref1, and Vref1 becomes inverted at the 50/150 ohm boundary, you would want to maintain the phase of Vref2 by using an even multiple of 1/4 wave lengths of the 150 ohm line.

> b1 = s11*a1 + s12*a2 = 0V s11*a1 and s12*a2 engage in destructive interference.

> Pref1 = Pfwd1(|rho|^2) + Pref2(1-|rho|^2) - destructive interference
> 0W = 25W + 25W - 50W
>
> Pfwd2 = Pfwd1(1-|rho|^2) + Pref2(|rho|^2) + constructive interference
> 133.33W = 75W + 8.33W = 50W

I'll trade you a plus sign for your equal sign. ;-)

We also know that 133.33W = 100W + 33.33W.
So 100W = 100W + 33.33W - 33.33W. Which is equally revealing. ;-)

73, Jim AC6XG

1319. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 20:34:31 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F15B6D7.2000401@mwci-news>
Source record: 112563

W5DXP wrote:
> William E. Sabin wrote:
>
>> If a 50 ohm generator is connected to a 50 ohm resistor (or
>> resistance), the maximum possible power is delivered to the load.
>
>
> Maybe it should be "maximum *available* steady-state power" which is
> not always the same thing as "maximum "possible" power"? :-)

Maximum possible is correct. The maximum
"available" from the generator is a constant
value. The maximum "delivered" is the thing can be
lower than the maximum.

Bill W0IYH

1320. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 20:41:13 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf4d99bcm1@sparta.btinternet.com>
Source record: 112564

"William E. Sabin" wrote
> If a 50 ohm generator is connected to a 50 ohm
> resistor (or resistance), the maximum possible
> power is delivered to the load.
>
> If the load is greater than or less than than 50
> ohms resistor (or resistance) the power delivered
> to the load is less than the maximum possible.

==========

Unfortunately, the use of the term "Reflection Loss" to descibe performance of amateur feedline + antenna systems at HF merely adds to the confusion.

"Maximum Available (or possible) Power" delivered to the load occurs only when there's a "Conjugate Match" between generator and load.

But a Conjugate Match does not exist. It cannot even be assumed. For the simple reason the internal impedance of the generator is never known. And it wouldn't make any difference to how the system is set up and operated if it was.

Even the generator (transmitter) designer doesn't know what the internal impedance is. He couldn't care less. It can vary all over the shop depending on what the load impedance is.

Reg, G4FGQ

1321. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 21:05:57 UTC
From: Bob <bcnntp@optusnet.com.au>
Message-ID: <lne4fb-gf3.ln@p400bob.lse.com.au>
Source record: 112565

Hi Rapheal

If you are specifically aiming at radio astronomy be aware that the "pattern" of the antenna (in your case the "best strength" direction) will be affected by height above ground. The ground acts as a reflector of sorts. Have a wander through http://www.cebik.com and you'll see what radiation/response patterns look like. To give you an idea I once had a crossed dipole 3/8 of a wavelength above a metal sheet that radiated/responded mostly to signals about 20 degrees above the horizon and gradually less and less till directly above. This was of course for satellite use. You probably want a fairly vertical pattern to reduce local/man made noise so the spacing will be less.

In using an array of dipoles what kind of directional response are you after? This will govern their spacing, height above ground and so on. If you are feeding the dipoles to get a directional pattern, cable length does become something to consider but for a single dipole isnt very important.

What is your exact intended use, direction of operation and frequency. I'll try and be more specific...

Cheers Bob VK2YQA

> I'm building a simple radio telescope, using an array of dipole antennas,
> but I have a few questions. (Note: I've had a year of physics, but no
> electronics... so please go easy on me) ;)
>
> 1. I've heard the the dipole should be 1/4 of the wave-length above the
> ground... is this so that the total distance (antenna-ground-antenna) is
> 1/2 the wave-length (the fundamental mode)?
>
> 2. I've also heard that the cables connecting the antenna to the reciver
> should be in multiples of 1/2 the wave-length. How important is this?
>
> 3. To improve signal strength, I'm building three antennas. How far apart
> should they be spaced?
>
> TIA!
>
> R.

1322. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 21:22:45 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F15C225.4010109@mwci-news>
Source record: 112566

Reg Edwards wrote:
> "William E. Sabin" wrote
>
>>If a 50 ohm generator is connected to a 50 ohm
>>resistor (or resistance), the maximum possible
>>power is delivered to the load.
>>
>>If the load is greater than or less than than 50
>>ohms resistor (or resistance) the power delivered
>>to the load is less than the maximum possible.
>
>
> ==========
>
> Unfortunately, the use of the term "Reflection Loss" to descibe performance
> of amateur feedline + antenna systems at HF merely adds to the confusion.
>
> "Maximum Available (or possible) Power" delivered to the load occurs only
> when there's a "Conjugate Match" between generator and load.
>
> But a Conjugate Match does not exist. It cannot even be assumed. For the
> simple reason the internal impedance of the generator is never known. And
> it wouldn't make any difference to how the system is set up and operated if
> it was.
>
> Even the generator (transmitter) designer doesn't know what the internal
> impedance is. He couldn't care less. It can vary all over the shop depending
> on what the load impedance is.
> ---

All of this is common knowledge, or should be.

However, this gets beyond the basic idea of
mismatch loss. It was not my intention to get into
an expanded discussion of the various
contingencies, which have been discussed ad
nauseum in this forum. One should start with the
simplest case.

If an equipment is designed to work into a 50 ohm
load, and the load is not 50 ohms, a "return loss"
can be measured with a 50 ohm directional coupler.
No knowledge of the generator impedance is needed
for this. The return loss is also a measure of the
mismatch loss, if the generator resistance (50

ohms) is known. An impedance "transforming" network can improve the load impedance closer to 50+j0 ohms. The equipment will then perform as advertised.

In many kinds of circuits mismatch loss and conjugate match are important.

Bill W0IYH

1323. SGC-235 Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 21:28:39 UTC
From: 3518693@mail.com
Message-ID: <740cebc3.0307161328.7c12d272@posting.google.com>
Source record: 112567

Folks,

Okay, I think my decision is in... The SGC-235 tuner. Does anyone have experience running power into this tuner, in excess of the "rated" 500 watts?

Cecil had a good idea, initial tune with low power, and then add full smoke later on. My operation will be SSB, peaks at 600-700 watts, give or take. And yes, I am willing to cap power output at around 600, if need be ;-)

Also, what configuration are you all using? Dipole, or long wire?

Thanks in advance again, and yes, Roy, here I go with the considerable expense... thanks!

1324. SGC-235 Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 21:28:39 UTC
From: 3518693@mail.com
Message-ID: <740cebc3.0307161328.71866a08@posting.google.com>
Source record: 112568

Folks,

Okay, I think my decision is in... The SGC-235 tuner. Does anyone have experience running power into this tuner, in excess of the "rated" 500 watts?

Cecil had a good idea, initial tune with low power, and then add full smoke later on. My operation will be SSB, peaks at 600-700 watts, give or take. And yes, I am willing to cap power output at around 600, if need be ;-)

Also, what configuration are you all using? Dipole, or long wire?

Thanks in advance again, and yes, Roy, here I go with the considerable expense... thanks!

1325. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 21:41:47 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vhbhlbmta47l25@corp.supernews.com>
Source record: 112469

You tell me, that's part of the question.
tnx
hank wd5jfr
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f15a953_7@corp.newsgroups.com...
> TeeAye wrote:
> > The original question was *not* about co-phasing. It was about using
> > another whip as a replacement for the missing half of a dipole. The
second
> > whip would be connected directly to the car body and become an extension
of
> > the body.
>
> Assuming one whip is pointing up, which way is the other whip pointing?
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1326. Re: ATAS 120

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 22:25:06 UTC
From: Rich <rk911@ANTISPAM.yahoo.com>
Message-ID: <d5kbhvk6eag9b5i380e0h2ku1sk7gqtm0e@4ax.com>
Source record: 112470

On 16 Jul 2003 18:20:37 GMT, alcca@aol.com (ALCCA) wrote:

>Hi, I am thinking of getting a Yaesu 897 with the ATAS 120 antenna for both
>mobile and base operation. My problem is that I live in a condo which does not
>allow antennas on the roof. I have been thinking of getting the MFJ 1904 which
>is a 2' X 2" stainless steel base and mounting the ATAS 120 with an extension
>(to keep RF away from me and also to get it as close as possible to the
>cathedral ceiling). What do you guys think of such an arrangement.
>Thanks
>Al Casanova
>KE4MNF

al, i've got the ATAS 100 and love it. the 120 is the next generation
of that antenna. i think you'd be better off mounting that outside on
a balcony railing maybe?

73,
rich, n9dko

1327. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 22:56:21 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf4l6l$i3k$1@hercules.btinternet.com>
Source record: 112471

> In many kinds of circuits mismatch loss and
> conjugate match are important.
>
==========

I didn't say they were unimportant. I said they served only to add to the confusion when considering operation of the usual amateur installation when the generator internal resistance is unknown.

1328. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 23:02:15 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307161502.21d59305@posting.google.com>
Source record: 112472

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0307152145.4a30f49f@posting.google.com>...
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0307150957.69dbf89@posting.google.com>...
> >
> > But for ham applications, do you really care about all this? There's
> > probably not a need to, if you're just trying to get power to an
> > antenna, but if you care because you simply want to learn how to build
> > a precision system and make precision measurements, that's fine too.
> > You should be able to find lots of info on the web about that...try,
> > for example, to find Hewlett-Packard/Agilent ap notes on RF
> > measurements and calibrations.
> >
> > Cheers,
> > Tom
>
>
> When you are trying to design a 9 element Chebychev low-pass
> filter, it becomes important to test it will a 50 Ohm dummy load that
> doesn't drift all over the place at higher frequencies.

RFSim99 lets you easily see how (in)sensitive such a filter is to load
resistance and reactance. And if you're going to use it in a
transmitting (or receiving, for that matter) application, it might be
good to know that, since it may be rather difficult to control either
the load or the source impedance, especially over a wide frequency
range.

Cheers,
Tom

1329. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 23:05:33 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307161505.485b5668@posting.google.com>
Source record: 112473

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f155b19_5@corp.newsgroups.com>...
> Dr. Slick wrote:
> > "You cannot tell if the 50 Ohms reading on a Network analyzer into
> > a Black Box is a dissipative resistance like a dummy load, or if it is
> > a radiated resistance of a perfectly matched antenna. You don't have
> > that information."
>
> Conversion of RF energy to heat can be measured. Conversion of RF energy
> to EM radiation can be measured.

Agreed. But a Black Box to me implies you have limited
information from it. My point is that if someone gives you an
impedance plot of a resistive 50 Ohms, you will not be able to tell if
it is dissipative (lossy) or radiated resistance.

I was just reading that Joseph Carr calls radiated resistance as
a sort of "ficticious" resistance. I'm sure many here would argue
this description, but it kinda makes sense to me.

Slick

1330. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 23:38:57 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F15E211.6090106@mwci-news>
Source record: 112474

Reg Edwards wrote:
>>In many kinds of circuits mismatch loss and
>>conjugate match are important.
>>
>
> ==========
>
> I didn't say they were unimportant. I said they served only to add to the
> confusion when considering operation of the usual amateur installation when
> the generator internal resistance is unknown.
>
>

That too is very well understood by just about
everyone.

Bill W0IYH

1331. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 23:40:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhbojfroo1fhb0@corp.supernews.com>
Source record: 112475

I'd be one of the people arguing. Radiation resistance fits every
definition of resistance. There's no rule that a resistance has to
dissipate power. The late Mr. Carr was quite apparently confusing
resistance with a resistor, a common mistake.

Why not call radiation resistance "real" resistance and loss resistance
"ficticious"? Makes just as much sense as the other way around -- that
is to say, none.

Roy Lewallen, W7EL

Dr. Slick wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f155b19_5@corp.newsgroups.com>...
>
>>Dr. Slick wrote:
>>
>>> "You cannot tell if the 50 Ohms reading on a Network analyzer into
>>>a Black Box is a dissipative resistance like a dummy load, or if it is
>>>a radiated resistance of a perfectly matched antenna. You don't have
>>>that information."
>>
>>Conversion of RF energy to heat can be measured. Conversion of RF energy
>>to EM radiation can be measured.
>
>
>
> Agreed. But a Black Box to me implies you have limited
> information from it. My point is that if someone gives you an
> impedance plot of a resistive 50 Ohms, you will not be able to tell if
> it is dissipative (lossy) or radiated resistance.
>
> I was just reading that Joseph Carr calls radiated resistance as
> a sort of "ficticious" resistance. I'm sure many here would argue
> this description, but it kinda makes sense to me.
>
>
> Slick

1332. Re: Any VEE Beam design info around ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 23:53:50 UTC
From: DOUGLAS SNOWDEN <SNOWDEN@peoplepc.com>
Message-ID: <vhbpcej99j0ifa@corp.supernews.com>
Source record: 112476

I was thinking of something like a sloping vee beam. One mast and the wires sloping towards the ground and supported a short distance off the ground. Maybe three wires with one common that is switched between one of two outer wires to change directions. It would be bidirectional and cover most of the earth. I have antenna books stored that have this sort of info, just can't get to them right now. I know it is in the ARRL antenna handbook, especially the older one.

Doug

N4IJ

"Tom Coates" <tecoates@comcast.net> wrote in message
news:avudnXC6hu8L646iXTWJhQ@comcast.com...
> Interesting design on the last page of ARRL's Wire Antenna Classics. It's
a
> coax fed monobander, made according to formula with 90 degrees between
legs
> that are 1.25 WL long. As I recall, the feedpoint impedence is 100 ohms,
so
> the designer connected a second vee in parallel back-to-back to get a 50
ohm
> feedpoint. One support mast 0.25 WL high. The elements end near ground
> level. By use of a single dpdt relay at the feedpoint the beam can be
> steered 90 degrees. It's bidirectional, so f/s is good but f/b is zero. I
> believe the designer described it as an "inside out rhombic."
>
> It would be interesting to hear from anyone who has direct experience with
> this design.
>
> Tom, N3IJ
>
> "DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
> news:vh33p9t588da12@corp.supernews.com...
> > I am looking for something on the web that describes the optimum
> > angles between wires, etc. I am not talking about inveted dipole
> > beams, but a pair of horizontal wires (or sloping wires) that are at
> > a 30 degree or so angle, usually fed with open wire line.
> >
> > Thanks
> >
> > Doug N4IJ
> >
> >
>

>

1333. KT34XA to KT34A conversion ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-16 23:58:17 UTC
From: DOUGLAS SNOWDEN <SNOWDEN@peoplepc.com>
Message-ID: <vhbpkp8r6065e3@corp.supernews.com>
Source record: 112477

I think I am going to buy a KT34XA. I may or may not want to make it a shorter KT34. Any documents describing the conversion in either direction ? Guess I could just find the drawings and specs on both antennas and figure it out that way.

Doug N4IJ

1334. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 00:19:50 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307161619.43e54dca@posting.google.com>
Source record: 112478

Roy Lewallen <w7el@eznec.com> wrote in message news:<vh9untfnbtf294@corp.supernews.com>...
> >
> >
> > What if the antenna was a wire shorting the transmission line?
> > Then there would be very little radiated power, and a lot of reflected
> > power.
>
> Yes, there would. But every watt delivered to that wire would be either
> radiated or dissipated.
>

Actually mostly reflected back to the source, so not radiated or
dissipated assuming ideal lossless transmission lines.

> > You can make a transformer to match 50 Ohms to, say, 200 Ohms or
> > so. Why not for 50 to 377? It's just another number.
>
> That's right. You can make a transformer that converts the circuit V/I
> ratio to 377 ohms. But this doesn't make a plane wave whose E to H field
> ratio is 377 ohms. But you can have an antenna with a feedpoint
> impedance of, say, 3 - j200 ohms, and a couple of wavelengths from the
> antenna, the ratio of E to H field produced by that antenna will be 377
> ohms. Another antenna, with feedpoint impedance of 950 + j700 ohms, will
> also produce a fields whose E to H ratio is 377 ohms. In fact, you can
> have any antenna impedance you'd like, and a few wavelengths away, the
> ratio of E to H field will be 377 ohms, provided the antenna is immersed
> in something resembling free space. But the fields in, on, or around a
> 377 ohm transmission line are unlikely to have an E to H ratio of 377 ohms.
>
> You're trying to say that the 377 ohm E/H ratio of free space is the
> same thing as a V/I ratio of 377 ohms. It isn't. Any more than 10 ft-lbs
> of torque is the same as 10 ft-lbs of work or energy.
>

Interesting. I'll have to look this up more.

> > Except in the case of free space, with a given permeability and
> > permittivity, you have the impedance of free space, which doesn't need
> > a transmission line.
>
> Sorry, I can't make any sense out of that.

Well, my point was that you don't need a transmission line for
free space because otherwise it wouldn't be wireless. But your above
point is well taken, that there is no current flowing in free space,
in an expanding EM wave, while there definitely is current in a

transmission line.

> >
> > Cool. But a network analyzer looking into a black box will not
> > be able to tell you whether the 50 Ohms it is reading is radiated
> > resistance or dissipated resistance. This seems to be the crux of my
> > question.
>
> You're right. The network analyzer can't tell you what's happening to
> those watts going into the antenna. Too bad. If it could, we'd have a
> really cool, easy way to measure antenna efficiency, wouldn't we?
>

That would be excellent.

>
> If we insist on separating all resistance into "dissipative" and
> "dissipationless" categories, we have to consider time. Within a small
> fraction of a second, most of the energy going into an antenna is
> dissipated -- mostly in the ground or (at HF) the ionosphere. So we'll
> have to consider that portion of the radiation resistance as
> "dissipative". The stuff that goes into space will take longer to turn
> into heat, but it will eventually.

Certainly the EM wave will heat up ever so slightly any bits of
metal it comes across on the way to outer space.

So the remainder of the radiation
> resistance is one that's initially dissipationless but becomes
> dissipative with time. Just think, we can have a whole new branch of
> circuit theory to calculate the time constants and mathematical
> functions involved in the transition between dissipationless and
> dissipative states! And of course it would have to be cross-disiplinary,
> involving cosmology, meteorology, and geology at the very least. There
> are textbooks to be written! PhD's to earn! Just think of the potential
> papers on the resistance of storage batteries alone! High self-discharge
> rate means a faster transition from dissipationless to dissipative. . .
>

And the EM wave will theoretically continue forever, even if it is
in steradians (power dropping off by the cube of the distance?), so
perhaps eventually most of it will be dissipated as heat.

But, as you know, a capacitor also never fully charges...

> Sorry, I digress. I just get so *excited* when I think of all the
> possibilities this opens up for all those folks living drab and boring
> lives and with so much time and so little productive to do. . .
>
> But has this bastard creation really simplified things or enhanced
> understanding?
>

Very interesting stuff. And it's certainly enhanced MY
understanding.

>
> > What's wrong with thinking of an antenna as a type of series
> > Inductor, with a distributed shunt capacitance, that can be thought of
> > as a type of distributed "L" matching network that transforms from 50
> > Ohms to 377?
>
> Because that's not what it does, and thinking of it that way leads you
> to impossible conclusions. The antenna is converting power to E and H
> fields. The ratio of E to H, or the terminal V to I are immaterial to
> the conversion process. You're continuing to be suckered into thinking
> that because the ratio of E to H in free space has the dimensions of
> ohms that it's the same thing as the ratio of V to I in a circuit. It
> isn't. A strand of spaghetti one foot long isn't the same thing as a one
> foot stick of licorice, just because the unit of each is a foot.
>

But an antenna must be performing some sort of transformer action.
If you were designing an antenna to radiate underwater, or though
Jell-o, or any other medium of a different dielectric constant than
free space, you would have to change it's geometry. Even if it is E
to H, and not V to I.

If an antenna is not a transformer of some type, then why is it
affected by it's surroundings so much? They obviously are, just like
the primary's impedance is affected by what the secondary sees in a
transformer. Certainly having lots of metal in close proximity will
affect the impedance of your antenna.

> > This is related to how you need to bend the ground radials of a
> > 1/4 WL vertical whip at 45 deg angles down, to get the input impedance
> > closer to 50 Ohms (as opposed to 36 Ohms or something like that if you
> > leave them horizontal).
>
> There are a number of ways in which an antenna and transmission line are
> similar. But don't take the analogy too far. Start with a quarter
> wavelength transmission line, start splitting the conductors apart until
> they're opposed like a dipole, and tell me how you've ended up with an
> input impedance of 73 ohms.
>

Well, I'm not sure, but you would start off at an open, which
would be transformed to a virtual short. But from there, it sounds
like a complex mathematical derivation to get the 73 Ohms.

My point is that the 73 Ohms is dependant on the dipole's
surroundings, depending on how far from the ground and such, so it is
a transformer of some sort.

> There are plenty of texts you can read, on all different levels, if
> you're really interested in learning about antennas, fields, and waves.

>
> Roy Lewallen, W7EL

Which one's can you recommend?

Slick

1335. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 00:24:52 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307161624.6cdaf714@posting.google.com>
Source record: 112479

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<ApWcncWa15mry4iiXTWJjw@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0307150552.733e8268@posting.google.com...
> > I disagree on this point. You can think of an antenna as a type
> > of tranformer, from 50 Ohms to 377 Ohms of free space. A tuned
> > antenna is "matching" 50 to 377 ohms, and will therefore have no
> > reflections, ideally.
>
> Look up "Impedance of Free Space"in the Kraus book.
>
> Tam/WB2TT

I don't have that book. What does it say?

Slick

1336. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 01:20:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhbuf4i5pqkn05@corp.supernews.com>
Source record: 112480

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vh9untfnbtf294@corp.supernews.com>...
>
>>>
>>> What if the antenna was a wire shorting the transmission line?
>>>Then there would be very little radiated power, and a lot of reflected
>>>power.
>>
>>Yes, there would. But every watt delivered to that wire would be either
>>radiated or dissipated.
>>
>
>
> Actually mostly reflected back to the source, so not radiated or
> dissipated assuming ideal lossless transmission lines.
>

No. "Reflected" power isn't delivered to the wire. It's an analytical function that exists only on the feedline. If the feedline has no loss, the same amount of power entering the line exits the line. You can have any amount of "reflected power" you want by simply changing the characteristic impedance of the line -- with no effect on the power either exiting or leaving the line.

>
> . . .

>
>>> Except in the case of free space, with a given permeability and
>>>permittivity, you have the impedance of free space, which doesn't need
>>>a transmission line.
>>
>>Sorry, I can't make any sense out of that.
>
>
>
>
> Well, my point was that you don't need a transmission line for
> free space because otherwise it wouldn't be wireless. But your above
> point is well taken, that there is no current flowing in free space,
> in an expanding EM wave, while there definitely is current in a
> transmission line.
>

Yes, that's right. But if you want to dig deeper, you'll find that a
"displacement current" can be mathematically described which
conveniently accounts for some electromagnetic phenomena. It is, though,
a different critter from the conducted current on a transmission line.

An antenna can reasonably be viewed as a transducer. It converts the
electrical energy entering it into electromagnetic energy -- fields. As
is the case for any transducer, the stuff coming out is different than
the stuff going in. Think in terms of an audio speaker, which converts
electrical energy into sound waves, and you'll be on the right track.

> . . .
>
>
>>> What's wrong with thinking of an antenna as a type of series
>>>Inductor, with a distributed shunt capacitance, that can be thought of
>>>as a type of distributed "L" matching network that transforms from 50
>>>Ohms to 377?
>>
>>Because that's not what it does, and thinking of it that way leads you
>>to impossible conclusions. The antenna is converting power to E and H
>>fields. The ratio of E to H, or the terminal V to I are immaterial to
>>the conversion process. You're continuing to be suckered into thinking
>>that because the ratio of E to H in free space has the dimensions of
>>ohms that it's the same thing as the ratio of V to I in a circuit. It
>>isn't. A strand of spaghetti one foot long isn't the same thing as a one
>>foot stick of licorice, just because the unit of each is a foot.
>>
>
>
>
> But an antenna must be performing some sort of transformer action.
> If you were designing an antenna to radiate underwater, or though
> Jell-o, or any other medium of a different dielectric constant than
> free space, you would have to change it's geometry. Even if it is E
> to H, and not V to I.

Not transformer, transducer. More like a speaker than a megaphone.

> If an antenna is not a transformer of some type, then why is it
> affected by it's surroundings so much?

Egad, how can I answer that? If a fish isn't a transformer, then why is
it affected by its surroundings so much? If an air variable capacitor
isn't a transformer, then why is it affected by its surroundings so
much? What does sensitivity to surroundings have to do with being a
transformer?

They obviously are, just like
> the primary's impedance is affected by what the secondary sees in a
> transformer. Certainly having lots of metal in close proximity will
> affect the impedance of your antenna.

It is true that the equations describing coupling between two antenna elements are the same as the for the coupling between windings of a transformer. But a single antenna element isn't a transformer any more than a single inductor is a transformer. When you apply V and I to an antenna, it creates E and H fields. When you apply V and I to an inductor, it creates E and H fields. Both the antenna and inductor are acting as transducers, converting the form of the applied energy. If you put a secondary winding in the field of the primary inductor, the field induces a voltage in the secondary. If (and only if) the secondary is connected to a load, causing current to flow in it, that current produces a field which couples back to the primary, altering its current. Coupled antennas, or an antenna coupled to any other conductor, work the same way -- although localized currents can flow in the absence of an intentional load if the antenna is a reasonable fraction of a wavelength long.

But the single antenna isn't a transformer, any more than the single inductor is. Each is a transducer, and the secondary winding, or coupled conductor, is another transducer.

>
>>> This is related to how you need to bend the ground radials of a
>>>1/4 WL vertical whip at 45 deg angles down, to get the input impedance
>>>closer to 50 Ohms (as opposed to 36 Ohms or something like that if you
>>>leave them horizontal).
>>
>>There are a number of ways in which an antenna and transmission line are
>>similar. But don't take the analogy too far. Start with a quarter
>>wavelength transmission line, start splitting the conductors apart until
>>they're opposed like a dipole, and tell me how you've ended up with an
>>input impedance of 73 ohms.
>>
>
>
> Well, I'm not sure, but you would start off at an open, which
> would be transformed to a virtual short. But from there, it sounds
> like a complex mathematical derivation to get the 73 Ohms.

And it's really, really tough and requires some *really* creative (read: bogus) math to derive it from simply transmission line phenomena.

> My point is that the 73 Ohms is dependant on the dipole's
> surroundings, depending on how far from the ground and such, so it is
> a transformer of some sort.
>

Not by itself it isn't. But if you can make a transformer by putting two antenna elements close together -- put V and I into one and extract it in a different ratio from the other. It's going to be a pretty lossy transformer, though, due to energy lost to radiation. (You'll find extra resistance at the "primary" feedpoint that'll nicely account for this.)

>
>
>>There are plenty of texts you can read, on all different levels, if
>>you're really interested in learning about antennas, fields, and waves.
>>
>>Roy Lewallen, W7EL
>
>
>
> Which one's can you recommend?

One of my favorites is King, Mimno, and Wing, _Transmission Lines, Antennas, and Waveguides_, and that's probably the one I'd choose if I had to select just one. It was reprinted as a paperback by Dover in 1965, and the paperback be found as a used book pretty readily and inexpensively. Kraus' _Antennas_ is my favorite text on antennas, and is certainly one of the most, if not the most, highly regarded. It's now in its third edition, and you can often find used copies of earlier editions at reasonable prices. For transmission lines, there's an excellent treatment in Johnson's _Transmission Lines and Networks_. I refer to Kraus' _Electromagnetics_ particularly when dealing with waves in space. And Holt's _Introduction to Magnetic Fields and Waves_ is pretty good for both.

There are a lot of others, each with its strong and weak points. But you can't go wrong with these.

Roy Lewallen, W7EL

1337. LQQKing for article

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 01:50:16 UTC
From: nedrog@aol.comNOSPAM
Message-ID: <20030716215016.27503.00001115@mb-m24.aol.com>
Source record: 112481

Hey there - anybody still have a copy of the article - I think it was in 73 mag
a couple of years back - reference a:

2 element FRACTUAL 10 M QUAD?

73's

Howard W3CQH

1338. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 02:03:51 UTC
From: Jim Warner <jpwarner@gte.net>
Message-ID: <bunRa.7588$EZ2.2730@nwrddc01.gnilink.net>
Source record: 112482
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Yeah, you know I just took a quick scan of the HF spectrum. Looks like most of the modern world has relinquished HF spectrum for more consistant, secure means of long range communications.
There's a few spanish speaking mariners off the coast of Chile on 8MHz, but they're waiting for some surplus AMPS cell service to show up. The same drunks on 75 every night bitching and moaning about not getting laid, 2 guys a day die at the mic on 40 trying to spark a nail while explaining their med
regiment, 20's got would-be broadcast engineers schmoozing us with swideband audio, effectively demonstrating how to make inefficient use of spectrum as the DX'ers yelling numbers across the pond. From there up to through 10 its kinda dead...except 27MHz. There's always an elevated noise floor and some potent SKIP signals on 27MHz.
Both amateur bands on either side can be dead quiet while half the iron EF Johnson ever made is pumping square waves on Channel 6. I really shouldn't mention 27MHz though because thats, well thats CB.
Its probably a result of that band selective propagation problem I noted earlier.
I really hate to be the devils advocate, and I have have enjoyed the romance with ham radio that many others from years gone by have experienced, but we may soon be exposed to the same hassle the 8-track got when cassettes showed up on the front seats of our Chevelles.
Unfortunately, the FCC has been reduced to auctioneers, directly accountable to scuzbucket politicians eager to sell off anything possible to maintain the facade.
The lucky ones leave the FCC to assume cushy positions at corporations they help during thier tenure, quite blatantly I might add. Hell, some have left to start
companies that intentionally try to destroy industries(LMR/SMR) to achieve thier means(certain cell carrier with push to talk feature)
I'm probably gonna send Newington money anyway. They irritate sometimes, but they're the biggest gun we have. I'd really miss the natural sound of an HF
radio set, and the character and tradition of our HF presense. How 'bout you?
My argument is that BPL should be high pass filtered with a 30MHz cut-off. When the leakage of data begins to propagate erratically in the lower
HF region, there may be fragmented co-node interference that may be a duplicate color code match, causing network disruptions.
Another more basic issue is, Commonwealth Edison can't keep thier 60Hz primary product from leaking. How the hell are they going to handle a sub

carrier service on ratty grids maintained by employees that think the power
is
good because your lights are on?
And finally, the sacrifice of the lower 28MHz (2-30) that is alleged to be
affected
will not drastically affect the massive volume of throughput that will be
crammed
down the throats of so many, or the massive volume of cashflow that will be
enjoyed by so few.
Jim Warner, WA9Z

"Phil Kane" <Phil.Kane@nov.shmovz.ka.pop> wrote in message
news:cuvyxnansvbet.hhtu2ny.pminews@netnews.comcast.net...
> On Thu, 10 Jul 2003 07:08:25 GMT, Zoran Brlecic wrote:
>
> >FAA does not use SW, afaik, so they couldn't care less.
>
> FAA contracts their HF comms to ARINC.
>
> >Ship to shore? What ship to what shore? They use satellites.
>
> Tell that to a good friend of mine who is chief tech for Globe
> Wireless (licensee of maritime public coast stations KPH and KFS)
> who is responsible for maintaining 23 5 KW HF marine transmitters in
> the San Framcisco area. Yes, HF - not for CW, not for SSB, but for
> SITOR, the commercial version of AMTOR/FEC, tied into the Internet
> for e-mail.
>
> Satellites are "great" for occasional use until one gets the bill.
> Globe Wireless' HF circuits carry e-mail traffic 24/7 according to him.
>
> But I agree -- BPL is a danger to HF communications. No doubt about
> it.`
>
> --
> 73 de K2ASP - Phil Kane
>
> From a Clearing in the Silicon Forest
> Beaverton (Washington County) Oregon
>
>

1339. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 02:15:13 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F1606B1.F232C5DD@cwis.net>
Source record: 112483

Henry,
Don't waste your time, won't work as intended. Did
you really ask someone where to put/stick that other
half of the antenna??
'Doc

1340. Tower rates

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 02:19:26 UTC
From: Bressler Communications <bresslercomm@bellsouth.net>
Message-ID: <CunRa.12023$oa4.9608@fe02.atl2.webusenet.com>
Source record: 112484

Looking for info on the going rate for tower work. (ie. light bulb changeouts, coax runs, etc.) Is it usually by the hour, by the foot, or both?

Thanks

1341. Re: SGC-235 Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 02:19:29 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F1607B1.463A772@cwis.net>
Source record: 112485

M Wilson,
Did you ever wonder why the 'SGC' people put a
500 watt limit on their tuner, and not 600 watts,
or 750 watts?
'Doc

1342. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 02:20:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f16090d_5@corp.newsgroups.com>
Source record: 112486

Jim Kelley wrote:
> So where does the 33.33 watts actually go? The 100 watt number seems to
> account for all of the transfer of energy.

I told you, the 33.33W joins the 100W forward wave at the impedance
discontinuity and heads toward the load where a new 33.33W is rejected
by the mismatched load. Maybe that is the point of your confusion. The
33.33W that makes a round trip to the impedance discontinuity and back
to the load is not the same 33.33W that is reflected by the load. TV
ghosting proves that to be true.

>
>>Let's look at the following system with two sources. Each source is a
>>signal generator equipped with a circulator and load. SGCL1 is equipped
>>with a 50 ohm circulator and load and SGCL2 is equipped with a 150 ohm
>>circulator and load. The two signal generators are phase locked but can
>>be turned on and off independently.
>
>
>> rho=0.5
>>100W SGCL1---50 ohm feedline---+---150 ohm feedline---33.33W SGCL2
>> Pfwd1--> Pfwd2-->
>> <--Pref1 <--Pref2

> Except for the amount of power input. Although you didn't mention it
> explicitly, I assume SGCL2 inputs 33.33 watts.

"33.33W SGCL2" seems pretty explicit to me.

> Obviously there's that
> much more power being input to the network in this example that the
> others we've worked on.

We are also taking out more power than we previously were.

> I note that interference takes place.

Please note that the 25W reflected when SGCL1 only is on is 35.36V at
zero deg, and 0.707A at 180 deg. When SGCL2 only is on, the 25W not
re-reflected is 35.36V at 180 deg, and 0.707A at zero deg. That's why
they cancel when both are on.

>
>>Assume there is a set of feedline lengths that will accomplish
>>the given values. Vref2 must be 180 degrees out of phase with Vfwd1 at the
>>impedance discontinuity. I think 1WL of 50 ohm feedline and 1/2WL of 150 ohm
>>feedline will do that if the voltages from the two sources are max+ at the

>>same time.
>
> Well, you won't get a phase reversal from reflection at the 150/50 ohm
> boundary as you would with the 150/450 ohm boundary in our other
> problem, so I think the 150 ohm feedline would need to be an odd number
> of 1/4WL's in order to put Vref1 out of phase with Vfwd1 at the first
> boundary. But since we're really interested in the relative phase
> between Vref2 and Vref1, and Vref1 becomes inverted at the 50/150 ohm
> boundary, you would want to maintain the phase of Vref2 by using an even
> multiple of 1/4 wave lengths of the 150 ohm line.

Nope, you are wrong about that but I'll let you figure our your own error.
The only voltage phase reversal in the given example is in the re-reflected
wave associated with the 8.33W. Vfwd1 travels 1WL while Vref2 travels 1/2WL.
That is enough to put them 180 degrees out of phase. Vfwd1(|rho|^2) undergoes
zero phase shift. Vref2(1-|rho|^2) undergoes zero phase shift.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1343. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 02:23:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1609ab$1_5@corp.newsgroups.com>
Source record: 112487

William E. Sabin wrote:

> W5DXP wrote:
>> Maybe it should be "maximum *available* steady-state power" which is
>> not always the same thing as "maximum "possible" power"? :-)
>
> Maximum possible is correct. The maximum "available" from the generator
> is a constant value. The maximum "delivered" is the thing can be lower
> than the maximum.

Point is that "maximum possible power" will cause a lot of transmitters
to exceed their maximum power rating and overheat.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1344. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 02:29:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f160ae5_5@corp.newsgroups.com>
Source record: 112488

Dr. Slick wrote:
> But a Black Box to me implies you have limited
> information from it.

Black boxes radiate heat very well. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1345. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 03:36:02 UTC
From: Raphael Clancy <rafemonkey@yah00.c0m>
Message-ID: <Xns93BAD191D9536rafemonkeyyahoocom@204.127.204.17>
Source record: 112489

Hi Bob,

Thanks for the quick reply. That Cebik site is a great resource, I'm still going through the antenna basics article, but "wi're we using wire" has already shed some light on things.

Here's a bit more detail on my project: I want to set up an antenna in such a way that most of my signal will be natural (ie not man made radio). Then, over a year, make a map of the sky as seen from my back yard. Basically my plan is antenna into amplifier into A/D converter into the serial port of a PC in my basement. The PC will poll the antenna every couple of minutes, and use the signal strength to make a stripchart, and an overall skymap where each pixel represents the signal strength at a given day and time.

I think I might start with one antenna, to keep things simple starting out, and then add on more antennas if it seems practical.

Thanks again,

R.

Bob <bcnntp@optusnet.com.au> wrote in
news:lne4fb-gf3.ln@p400bob.lse.com.au:

> Hi Rapheal
>
> If you are specifically aiming at radio astronomy be aware that the
> "pattern" of the antenna (in your case the "best strength" direction)
> will be affected by height above ground. The ground acts as a
> reflector of sorts. Have a wander through http://www.cebik.com and
> you'll see what radiation/response patterns look like. To give you an
> idea I once had a crossed dipole 3/8 of a wavelength above a metal
> sheet that radiated/responded mostly to signals about 20 degrees above
> the horizon and gradually less and less till directly above. This was
> of course for satellite use. You probably want a fairly vertical
> pattern to reduce local/man made noise so the spacing will be less.
>
> In using an array of dipoles what kind of directional response are you
> after? This will govern their spacing, height above ground and so on.
> If you are feeding the dipoles to get a directional pattern, cable
> length does become something to consider but for a single dipole isnt
> very important.
>
> What is your exact intended use, direction of operation and frequency.
> I'll try and be more specific...

>
> Cheers Bob VK2YQA
>

1346. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 04:02:51 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <ln2dndkkV4RugouiXTWJiw@comcast.com>
Source record: 112490

What might be of interest in this discussion is that after he derives the impedance of free space, he uses that to find the Radiation Resistance of a short dipole for d<<W. Where d is the length of the dipole and W is wavelength. (I did not want to do Greek letters). He ends up with an equation of the form

R=377k(d/W)**2 or R=790 (d/W)**2.

As a sanity check let d/W=1/2, which violates the <<, but still gives a fairly close answer of 197 Ohms, compared to the actual 168 Ohms. Note that this is not the same as Feedpoint Resistance because it is not referred to the current maximum. Kraus does not actually say this, but seems that the near field would be the mechanism for "matching" this to the far field 377 Ohms. The transmitter only sees the feedpoint, the rest of the universe sees the whole antenna.

If I interpret it correctly, this 197 (168) Ohms in independent of where you feed the dipole. Kind of hard to boil several pages into one paragraph, especially since most of this stuff I haven't seen in decades.

Tam/WB2TT
"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0307161624.6cdaf714@posting.google.com...
>
> I don't have that book. What does it say?
>
>
> Slick

1347. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 04:24:57 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F162516.8E4BEC41@att.net>
Source record: 112491
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Jim Warner wrote:

> Yeah, you know I just took a quick scan of the HF spectrum. Looks like most
> of the modern world has relinquished HF spectrum for more consistant, secure
> means of long range communications.

There's always a helluva wrangle over most every aspect of
HF at each and every WARC, gotta be some serious interest there somewhere.

>
> My argument is that BPL should be high pass filtered with a 30MHz
> cut-off.

There are a number of public safety agencies who still make serious use of lowband
VHF below 50 mHz, all the trunked systems nothwithstanding. Converting those to
UHF or up is a big $$$$$ proposition which just aint gonna happen iin the financial
climate facing those users for the forseeable future
. The state I worked a career for that uses a series of frequencies in the 42mhz
region for statewide public safety comms
would love to abandon it all in favor of a trunked UHF or above system but can't find
the ~$250mil it'd take to do the job. I'd expect that state and several others that
I know are on low VHF to have some pretty strong language for the FCC on the BPL
issue.

> When the leakage of data begins to propagate erratically in the
> lower
> HF region, there may be fragmented co-node interference that may be a
> duplicate color code match, causing network disruptions.
> Another more basic issue is, Commonwealth Edison can't keep thier 60Hz
> primary product from leaking. How the hell are they going to handle a sub
> carrier service on ratty grids maintained by employees that think the power
> is
> good because your lights are on?
> And finally, the sacrifice of the lower 28MHz (2-30) that is alleged to be
> affected
> will not drastically affect the massive volume of throughput that will be
> crammed
> down the throats of so many, or the massive volume of cashflow that will be
> enjoyed by so few.

If FCC wants a real hornets nest to descend on DC they can assure it by approving
the
BPL docket without many very serious limits, big chunks of frequency exemptions and
much other machinations to releive in advance a huge amount of what will be real

trouble for them if they don't. And no one knows if it would even work acceptably then, much less if there will ever be a viable business plan stem from it all. Who knows what emerging technology will render the whole scheme obsolete sometime next week?

Dick

1348. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 04:30:06 UTC
From: theplanters95@aol.comnospam
Message-ID: <20030717003006.09680.00000060@mb-m11.aol.com>
Source record: 112492

A while back, QST had an article on building a GPS turnstile antenna. The article might be useful. Check with the ARRL for a reprint.

Randy ka4nma

1349. Re: Help with 900Mhz turnstile....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 05:27:12 UTC
From: Paul@Rasdoc.com
Message-ID: <krcchvoq6ludugksuq0vv356usffre7fdk@4ax.com>
Source record: 112493

Richard,
Could you please post your NEC source file for this antenna?

I get the same patttern, but the SWR / impedance is all out of wack.

Paul (Kl7JG)

On Tue, 15 Jul 2003 20:23:42 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:

>
>>

1350. Re: Help with 900Mhz turnstile.... - 1X1X5-1.EZ (0/1)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 05:55:36 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mdechv4b3ge6t2sriotqff96hnnk5i0io8@4ax.com>
Source record: 112494

On Wed, 16 Jul 2003 22:27:12 -0700, Paul@Rasdoc.com wrote:

>Richard,
> Could you please post your NEC source file for this antenna?
>
>I get the same patttern, but the SWR / impedance is all out of wack.
>
>
>Paul (Kl7JG)

Hi Paul,

This is first for me, find attached the EZ file for one of several models I worked on. Let me know how useful it is (it may be the wrong one, but it is certainly very close to what I published).

73's
Richard Clark, KB7QHC

1351. Re: Help with 900Mhz turnstile.... - 1X1X5-1.EZ (1/1)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 05:58:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fmechvcodoqe4bvvtmup554s63c79k74br@4ax.com>
Source record: 112495

On Thu, 17 Jul 2003 05:55:36 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:

Hmmmm,

Not quite what I expected. I will do this the old fashion way,
e-mail.

73's
Richard Clark, KB7QHC

1352. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 07:13:01 UTC
From: richardharrison@webtv.net
Message-ID: <7827-3F164C7D-131@storefull-2311.public.lawson.webtv.net>
Source record: 112496

Dr. Slick wrote:
"I don`t have that book."

I don`t have Kraus either and I miss it.

Space has a magnetic permeability and a dielectric constant. The square root of their ratio is the characteristic resistance of space. It is 376.7 ohms = 120 pi ohms.

The reciprocal of the square root of the product of the permeability and dielectric consrtant of space is the velocity of EM radiation propagation. It is 300 million m/sec.

The above is courtesy of King, Mimno, and Wing, in "Transmission Lines, Antennas, and Wave Guides", on page 73.

The authors must have considered the information important as they repeated it on page 117. They followed the repetition with a discussion of the radiation resistance and input resistance of an antenna. They note that radiation resistance can`t be measured between two terminals in a circuit. The I squared R of the antenna power does not conveniently compute as might be expected with circuit terminals, as current is a variable along an antenna in most cases.

Best regards, Richard Harrison, KB5WZI

1353. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 07:17:24 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <tvBBkbFE2kF$EAbj@ifwtech.co.uk>
Source record: 112499

Dr. Slick wrote:
>
> But an antenna must be performing some sort of transformer action.

Not quite - but there is a word for what it does: it's a transducer.

A transducer is any gadget that converts energy from one form into a *different* form. Examples include a loudspeaker (electrical energy to sound/mechanical energy), a microphone (the reverse), a light bulb and a photocell.

From that point of view, a resistor is a transducer that converts electrical energy into heat energy... but it also has some useful electrical properties :-)

An antenna is a transducer that converts electrical energy into E and H fields, and the reverse.

You'll also notice that all practical transducers convert some of their input energy into heat energy.

It's a useful word for a useful idea.

(Cecil - can your IEEE Dictionary help us with a formal definition?)

On the other hand, if you insist on using the word "transformer", you'll keep on believing you can work out new facts about antennas from what you already know about transformers:
> If an antenna is not a transformer of some type, then why is it
>affected by it's surroundings so much? They obviously are, just like
>the primary's impedance is affected by what the secondary sees in a
>transformer.

That's a perfect example of the trap, because in reality it's not "just like". An antenna also has E-field interactions with its environment that a transformer doesn't have, so any resemblance will literally be only half-true.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1354. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 08:01:48 UTC
From: Bob <bcnntp@optusnet.com.au>
Message-ID: <c5l5fb-k5c.ln@p400bob.lse.com.au>
Source record: 112497

Hi Raphael

Okay understand a bit more now..

The question I have to then ask is in mapping the sky are you hoping to see higher and lower areas of RF density? To do this you will need some kind of steerable system and poll for signal strengths at a series of given co-ordinates. This would be very ambitious as making a narrow steerable beams is a science in itself. (You can do it mechanically or electrically. ie a dish/steerable yagi or by changing the phasing relationship between the antenna elements. With a computer the second method can achieve very narrow beamwidths by using the signal null instead of a peak. Very fiddly though. Never seen the software to do it...)

If you are only intending to capture information with it pointed in one direction and using the earths rotation to build a east-west traverse then this would be a lot simpler. What you havent mentioned is the frequency of operation as this governs the antennas size and design. You said an A/D.. Is this after a receiver or are you direct sampling and building up FFT buckets to get a VLF spectrum display? At such low frequencies antenna directivity is an entirely different exercise. If you are talking about (say) 3-30MHz a shielded magnetic loop will give you some directivity and reduction of man made noise. Not sure about VLF antennas. A guy I use to work with has done some work in this area (http://www.zeta.org.au/~ollaneg). It has some excellent info on data in noise techniques as well.

I realise I have digressed a little. Maybe I should read what you have said <grin>

Cheers Bob

> Here's a bit more detail on my project: I want to set up an antenna in
> such a way that most of my signal will be natural (ie not man made
> radio). Then, over a year, make a map of the sky as seen from my back
> yard. Basically my plan is antenna into amplifier into A/D converter into
> the serial port of a PC in my basement. The PC will poll the antenna
> every couple of minutes, and use the signal strength to make a
> stripchart, and an overall skymap where each pixel represents the signal
> strength at a given day and time.
>
> I think I might start with one antenna, to keep things simple starting
> out, and then add on more antennas if it seems practical.
>

1355. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 08:36:50 UTC
From: Raphael Clancy <rafemonkey@yah00.c0m>
Message-ID: <Xns93BACB0F36B26rafemonkeyyahoocom@204.127.204.17>
Source record: 112498

Hi Bob,

Thanks for the quick reply. That Cebik site is a great resource, I'm still going through the antenna basics article, but "wi're we using wire" has already shed some light on things.

Here's a bit more detail on my project: I want to set up an antenna in such a way that most of my signal will be natural (ie not man made radio). Then, over a year, make a map of the sky as seen from my back yard. Basically my plan is antenna into amplifier into A/D converter into the serial port of a PC in my basement. The PC will poll the antenna every couple of minutes, and use the signal strength to make a stripchart, and an overall skymap where each pixel represents the signal strength at a given day and time.

I think I might start with one antenna, to keep things simple starting out, and then add on more antennas if it seems practical.

Thanks again,

R.

Bob <bcnntp@optusnet.com.au> wrote in
news:lne4fb-gf3.ln@p400bob.lse.com.au:

> Hi Rapheal
>
> If you are specifically aiming at radio astronomy be aware that the
> "pattern" of the antenna (in your case the "best strength" direction)
> will be affected by height above ground. The ground acts as a
> reflector of sorts. Have a wander through http://www.cebik.com and
> you'll see what radiation/response patterns look like. To give you an
> idea I once had a crossed dipole 3/8 of a wavelength above a metal
> sheet that radiated/responded mostly to signals about 20 degrees above
> the horizon and gradually less and less till directly above. This was
> of course for satellite use. You probably want a fairly vertical
> pattern to reduce local/man made noise so the spacing will be less.
>
> In using an array of dipoles what kind of directional response are you
> after? This will govern their spacing, height above ground and so on.
> If you are feeding the dipoles to get a directional pattern, cable
> length does become something to consider but for a single dipole isnt
> very important.
>
> What is your exact intended use, direction of operation and frequency.
> I'll try and be more specific...

>
> Cheers Bob VK2YQA
>

1356. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 08:57:44 UTC
From: richardharrison@webtv.net
Message-ID: <6240-3F166508-20@storefull-2315.public.lawson.webtv.net>
Source record: 112500

Dr. Slick wrote:
"What does it say?"

I don`t have Kraus, unfortunately.

I do have Arnold B. Bailey`s "TV and Other Receiving Antennas". Bailey covers more antenna territory than most, and does an excellent job of it. Bailey also includes a catalog of antenna types, all sized for 200 MHz for easy comparison.

Bailey says the surge impedance of an antenna is inversely proportional to the capacitance per unit length. Reminds one of a transmission line. This is non-uniform, so Bailey has an empirical equation which says the larger the periphery of the rod, ther smaller the average surge impedance.

The ratio of the electric field to the magnetic field surrounding an antenna must be related to the ratio of volts to amps in the antenna wire (the surge impedance).

The surge impedance of a thin-wire 1/2-wave dipole from page 500 is 610 ohms (average).

The surge impedance of a fat-cylinder 1/2-wave dipole from page 502 is 240 ohms (average).

Pattern and gain are identical for both antennas. But, Dr. Slick may be on to something after all. The bandwidth of the fat antenna is about 3X that that of the thin. In antennas, bandwidth is often an indicator of match.

Best regards, Richard Harrison, KB5WZI

1357. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 10:17:17 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307170217.279a7e5b@posting.google.com>
Source record: 112501

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0307161502.21d59305@posting.google.com>...
> >
> > When you are trying to design a 9 element Chebychev low-pass
> > filter, it becomes important to test it will a 50 Ohm dummy load that
> > doesn't drift all over the place at higher frequencies.
>
> RFSim99 lets you easily see how (in)sensitive such a filter is to load
> resistance and reactance. And if you're going to use it in a
> transmitting (or receiving, for that matter) application, it might be
> good to know that, since it may be rather difficult to control either
> the load or the source impedance, especially over a wide frequency
> range.
>

RFSim99 seems to be a good program, but after 2 years of ADS and
how poorly it predicts how the "bench" should react (esp. at 1-2 GHz),
I'll stick to actual prototypes for now.

Slick

1358. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 10:47:32 UTC
From: richardharrison@webtv.net
Message-ID: <7827-3F167EC4-147@storefull-2311.public.lawson.webtv.net>
Source record: 112503

Ian, G3SEK wrote:
"Examples include a loudspeaker---."

Good transducer example. Its problem is abysmal efficiency, even if better than the usual incandescent lamp.

The loudspeaker`s efficiency can be improved by a better match to its medium. The usual loudspeaker is small in terms of wavelength. A result is that it is capable of exerting much force on a small area of a very compliant medium, air. Air could better accept power exerted over a much larger area, especially at low frequencies, with less force required to make the air move..

We have a high-Z source and a low-Z sink in the loudspeaker and air. Conversion from electric power to mechanical power can be more efficient through better impedance matching. Two solutions are often used for a better match, a larger loudspeaker or a horn between the loudspeaker and its air load. The larger speaker is directly a better match. The horn is an acoustic transformer. They both improve energy conversion efficiency.

Best regards, Richard Harrison, KB5WZI

1359. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 10:48:31 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307170248.7ad15d10@posting.google.com>
Source record: 112502

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhbuf4i5pqkn05@corp.supernews.com>...
> Dr. Slick wrote:
> > Roy Lewallen <w7el@eznec.com> wrote in message
news:<vh9untfnbtf294@corp.supernews.com>...
> >
> >>>
> >>> What if the antenna was a wire shorting the transmission line?
> >>>Then there would be very little radiated power, and a lot of reflected
> >>>power.
> >>
> >> Actually mostly reflected back to the source, so not radiated or
> >> dissipated assuming ideal lossless transmission lines.
> >>
> >
> > No. "Reflected" power isn't delivered to the wire. It's an analytical
> > function that exists only on the feedline. If the feedline has no loss,
> > the same amount of power entering the line exits the line. You can have
> > any amount of "reflected power" you want by simply changing the
> > characteristic impedance of the line -- with no effect on the power
> > either exiting or leaving the line.
> >

My point is that a lossless short will not radiate much and will
also not dissipate heat, but much of the forward wave will be
reflected.
This is common knowledge.

> >
> >
> > Yes, that's right. But if you want to dig deeper, you'll find that a
> > "displacement current" can be mathematically described which
> > conveniently accounts for some electromagnetic phenomena. It is, though,
> > a different critter from the conducted current on a transmission line.
> >
> > An antenna can reasonably be viewed as a transducer. It converts the
> > electrical energy entering it into electromagnetic energy -- fields. As
> > is the case for any transducer, the stuff coming out is different than
> > the stuff going in. Think in terms of an audio speaker, which converts
> > electrical energy into sound waves, and you'll be on the right track.
> >

Ok, never thought of it this way, but the audio speaker analogy is
good.

A transducer it is.

> >
> >
> > But an antenna must be performing some sort of transformer action.
> > If you were designing an antenna to radiate underwater, or though
> > Jell-o, or any other medium of a different dielectric constant than
> > free space, you would have to change it's geometry. Even if it is E
> > to H, and not V to I.
>
> Not transformer, transducer. More like a speaker than a megaphone.
>

Understood. But you have to admit that transformers and
transducers have some similarities. You will still have to optimize
the windings and magnets and size/shape of the speaker cone for
optimum power tranfer of a single tone. And you will have to have to
change the design if you decide to transmit sound underwater.

> It is true that the equations describing coupling between two antenna
> elements are the same as the for the coupling between windings of a
> transformer. But a single antenna element isn't a transformer any more
> than a single inductor is a transformer. When you apply V and I to an
> antenna, it creates E and H fields. When you apply V and I to an
> inductor, it creates E and H fields. Both the antenna and inductor are
> acting as transducers, converting the form of the applied energy. If you
> put a secondary winding in the field of the primary inductor, the field
> induces a voltage in the secondary. If (and only if) the secondary is
> connected to a load, causing current to flow in it, that current
> produces a field which couples back to the primary, altering its
> current. Coupled antennas, or an antenna coupled to any other conductor,
> work the same way -- although localized currents can flow in the absence
> of an intentional load if the antenna is a reasonable fraction of a
> wavelength long.
>
> But the single antenna isn't a transformer, any more than the single
> inductor is. Each is a transducer, and the secondary winding, or coupled
> conductor, is another transducer.
>

I see your point, that the primary could be considered one
antenna, and the core material like free space, and the secondary
would be the receive antenna. But i suspect even a single
transducer/antenna can be optimized for maximum lines of flux through
a core at a particular frequency, or max ERP in the case of the
antenna. Otherwise we wouldn't have to tune these things.

> >
> > Well, I'm not sure, but you would start off at an open, which
> > would be transformed to a virtual short. But from there, it sounds
> > like a complex mathematical derivation to get the 73 Ohms.
>
> And it's really, really tough and requires some *really* creative (read:
> bogus) math to derive it from simply transmission line phenomena.

>

Do you know of anyone who has mathematically derived the 73 Ohms
of a dipole in free space?

>
> One of my favorites is King, Mimno, and Wing, _Transmission Lines,
> Antennas, and Waveguides_, and that's probably the one I'd choose if I
> had to select just one. It was reprinted as a paperback by Dover in
> 1965, and the paperback be found as a used book pretty readily and
> inexpensively. Kraus' _Antennas_ is my favorite text on antennas, and is
> certainly one of the most, if not the most, highly regarded. It's now in
> its third edition, and you can often find used copies of earlier
> editions at reasonable prices. For transmission lines, there's an
> excellent treatment in Johnson's _Transmission Lines and Networks_. I
> refer to Kraus' _Electromagnetics_ particularly when dealing with waves
> in space. And Holt's _Introduction to Magnetic Fields and Waves_ is
> pretty good for both.
>
> There are a lot of others, each with its strong and weak points. But you
> can't go wrong with these.
>
> Roy Lewallen, W7EL

Thanks Roy, someone else mentioned the Kraus book (German dude,
eh?)

Slick

1360. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 10:51:08 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307170251.63444a4e@posting.google.com>
Source record: 112504

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f160ae5_5@corp.newsgroups.com>...
> Dr. Slick wrote:
> > But a Black Box to me implies you have limited
> > information from it.
>
> Black boxes radiate heat very well. :-)

Only if they're dummy loads! :)

Slick

1361. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 11:03:57 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307170303.6b895f62@posting.google.com>
Source record: 112505

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhbojfroo1fhb0@corp.supernews.com>...
> I'd be one of the people arguing. Radiation resistance fits every
> definition of resistance. There's no rule that a resistance has to
> dissipate power. The late Mr. Carr was quite apparently confusing
> resistance with a resistor, a common mistake.
>

Your point has been well taken, Roy. But you have to admit that radiation resistance is not a easily understood concept (which is why it may be a common mistake), so for someone to call it a "fictitious" resistance can make sense, in the sense that it is not a dissipated resistance. After all, "Imaginary" numbers are well accepted. And from an arguing sematics point of view (which is unfortunately necessary sometimes), even you call it "radiation resistance", which means that it is obviously not the same thing as a dissipative resistance like a 50 Ohm resistor.

That being said, rest assured, Roy, that you have convinced me!

Slick

1362. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 11:05:42 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307170305.6a4d7aca@posting.google.com>
Source record: 112506

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhbojfroo1fhb0@corp.supernews.com>...
> I'd be one of the people arguing. Radiation resistance fits every
> definition of resistance. There's no rule that a resistance has to
> dissipate power. The late Mr. Carr was quite apparently confusing
> resistance with a resistor, a common mistake.
>

BTW, did Joseph Carr really pass away? Sad, his book is very practical.

Slick

1363. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 11:49:40 UTC
From: Jack Smith <jsmith@mnsinc.com>
Message-ID: <kr2dhv0kchttq0cli5vmq99t1j8ed811ke@4ax.com>
Source record: 112507

On Wed, 16 Jul 2003 18:20:22 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>An antenna can reasonably be viewed as a transducer. It converts the
>electrical energy entering it into electromagnetic energy -- fields. As
>is the case for any transducer, the stuff coming out is different than
>the stuff going in. Think in terms of an audio speaker, which converts
>electrical energy into sound waves, and you'll be on the right track.

Roy:

Great analogy!

The characteristic acoustic impedance of air (standard temp &
pressure) is about 413 Rayleighs (or Pascal-Seconds/cubic meter).

Do we worry about matching 8 ohms of electrical speaker impedance to
413 Rayleighs? C.f. Paul Klipsch and the Horn speaker.

I wonder if much of the antenna radiation resitance/Tline
impedance/reflection/intrisnic impedance of free space confusion stems
from use of the same words to describe things that may be modeled
mathmetically identically, but have different physical modalities?

In heat sink calculations, for example, we use "thermal resistance"
and an Ohm's law model but few would confuse ohms of resistance with
degrees C/watt.

Jack K8ZOA

1364. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 13:14:46 UTC
From: Dilon Earl <"dilon _earl"@mail.com>
Message-ID: <3f16a0ec.90695913@140.99.99.130>
Source record: 112509

On Wed, 16 Jul 2003 14:41:34 -0500, "William E. Sabin"
<sabinw@mwci-news> wrote:

>Roy Lewallen wrote:
>>
>> There is a term called "mismatch loss".
>
>If a 50 ohm generator is connected to a 50 ohm
>resistor (or resistance), the maximum possible
>power is delivered to the load.
>
>If the load is greater than or less than than 50
>ohms resistor (or resistance) the power delivered
>to the load is less than the maximum possible.
>
>The ratio of maximum power (50 ohm load) to actual
>power (<50 ohms or >50 ohms) is the mismatch loss.
>It is almost always expressed in dB.
>
>The ARRL Handbook Chapter 17 discusses this topic.
>
>Bill W0IYH

Where does the loss occur? If you have 3 db of mismatch loss, is it
in the coax, tank circuit?

1365. WTB-TOWER

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 13:32:16 UTC
From: n2ion@aol.com
Message-ID: <20030717093216.27580.00000053@mb-m23.aol.com>
Source record: 112510

I'M LOOKING TO BUY A 3-4 SECTION HEAVY DUTY CRANK UP TOWER. MUST BE WITHIN DRIVING DISTANCE OF N.Y.C.

EMAIL WITH THE DETAILS

1366. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 14:06:32 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F16AD68.3000908@mwci-news>
Source record: 112511

Dilon Earl wrote:
>
>
> Where does the loss occur? If you have 3 db of mismatch loss, is it
> in the coax, tank circuit?
>

The loss in "mismatch loss" refers only to the fact that the power delivered by the generator to the load is less than it would be if the load resistance were the same value as the generator resistance, in other words if the load and generator were "matched".

The best way to get a handle on this subject is to draw a diagram of a generator with voltage V=10, an internal resistance of 50 ohms, and a load resistor of R ohms. Let R vary from 1 ohm to 100 ohms and calculate the power dissipated in the generator resistance (50 ohms), the power in the load resistance (R), and the total power. Plot a graph of the three quantities. The load power goes through a maximum when R=50 ohms.

The maximum power dissipated in the generator resistance is 10^2/50=2 W, which occurs when R=0 ohms. The minimum power dissipated in the generator resistance is 3.33^2/50=0.22 W which occurs when R=100 ohms. When R=50 ohms, the load power is 5^2/50=0.5 W (the maximum value), the dissipation in the generator resistance is 5^2/50=0.5 W and the total power is 10^2/100=1 W.

Bill W0IYH

1367. basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 14:35:01 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f16b377@shknews01>
Source record: 112515

Below is a paragraph - from a known book -
which I have difficulties understanding. Please
somebody explain in more clear terms the
phenomenon.

< the context was about dipole antennas,
however the comment has a general nature >

"Radiation of electromagnetic waves is created
when the alternating electric and magnetic fields
attempt to collapse back toward the antenna.
However, new fields being created by the next
half cycle push the preceding fields into space,
which is the mechanism of radiation."

- from "The Beginner's Handbook of Amateur
Radio" by Clay Laster, page 260

Cordially,

Nic. Santean
http://www.csd.uwo.ca/~nic/

1368. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 14:48:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f16b81a$1_8@corp.newsgroups.com>
Source record: 112512

Dr. Slick wrote:
> Do you know of anyone who has mathematically derived the 73 Ohms
> of a dipole in free space?

_Fields_and_Waves_in_Communication_Electronics_, Ramo, Whinnery,
& Van Duzer. Pages 647, 648, sections 12.05, 12.06.

The feedpoint current of a dipole is caused by the in-phase superposition
of the forward current and reflected current at the balanced feedpoint
of a standing wave antenna. A 1/2WL dipole and an open 1/4WL stub have
similarities. The deviation of the feedpoint impedance from zero ohms
gives an indication of the losses due to dissipation and radiation.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1369. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 14:56:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f16ba14_8@corp.newsgroups.com>
Source record: 112513

W7TI wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>Assuming one whip is pointing up, which way is the other whip pointing?
>
> The way I saw it done, the other whip was at the other end of the car
> and also pointing up. I have no knowledge of whether this was actually
> useful, but apparently the user thought it was.

In which case, it is a phased vertical array, not a dipole. With
a spacing of 1/8WL, one can get 4 dB gain that way.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1370. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 14:57:20 UTC
From: "Dan, danl, danny boy, Redbeard, actually Greybeard now" <danlx@execpc.com>
Message-ID: <u9edhv8hk2aus67oajc1orkgcf686ktlr1@4ax.com>
Source record: 112514

On Wed, 16 Jul 2003 21:15:13 -0500, 'Doc <w5lz@cwis.net> sent into the ether:

>
>
>Henry,
> Don't waste your time, won't work as intended. Did
>you really ask someone where to put/stick that other
>half of the antenna??
> 'Doc
Nice restraint on your part Doc :<}
Dan, N9JBF
Amateur radio - What a hobby!
Remove left x for direct reply

1371. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 16:03:19 UTC
From: richardharrison@webtv.net
Message-ID: <27591-3F16C8C7-147@storefull-2312.public.lawson.webtv.net>
Source record: 112517

What does Terman say in Sec. 4-11?

"The distance l1 from the load, and length "a" of the stub, are chosen that the reflected wave produced by the shunting impedance of the shunt line is equal in magnitude and opposite in phase to the reflected wave existing on the line at this point as a result of the reflection from the load impedance ZL, there is no reflected wave on the generator side of the stub line as a result of cancellation of the two reflected waves."

Terman said about the same thing about cancellation of the reflected wave in a waveguide. Terman offered several methods to generate the offsetting wave in a waveguide, and there are several ways to generate a wave which produces cancellation on a transmission line, too.

Best regards, Richard Harrison, KB5WZI

1372. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 16:03:45 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <bJKdna9K6Yt1VYuiXTWJjw@comcast.com>
Source record: 112516

Kraus comes up with Z=73 + j42.5. He then goes on to say that an actual dipole is made a few % shorter, which yields 65 + j0. When I did an EZNEC calculation on a 1/2 wave dipole at 3MHz, I did not quite get that. For a #30 wire in free space I got 76.81 + j43.89 at 3 MHz, and 72.88 + j0.3465 at 2.94 MHz.

I let EZNEC tell me what the wavelength was, and used 1/2 of that for the length of the dipole.

Tam/WB2TT
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f16b81a$1_8@corp.newsgroups.com...
> Dr. Slick wrote:
> > Do you know of anyone who has mathematically derived the 73 Ohms
> > of a dipole in free space?
>
> _Fields_and_Waves_in_Communication_Electronics_, Ramo, Whinnery,
> & Van Duzer. Pages 647, 648, sections 12.05, 12.06.
>
> The feedpoint current of a dipole is caused by the in-phase superposition
> of the forward current and reflected current at the balanced feedpoint
> of a standing wave antenna. A 1/2WL dipole and an open 1/4WL stub have
> similarities. The deviation of the feedpoint impedance from zero ohms
> gives an indication of the losses due to dissipation and radiation.
> --
> 73, Cecil http://www.qsl.net/w5dxp

1373. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 16:22:05 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <h9fdhv8qlkkntarncc04c6sovlir2pnotc@4ax.com>
Source record: 112518

On Thu, 17 Jul 2003 07:49:40 -0400, Jack Smith <jsmith@mnsinc.com>
wrote:
>Do we worry about matching 8 ohms of electrical speaker impedance to
>413 Rayleighs? C.f. Paul Klipsch and the Horn speaker.
>

Hi Jack,

Someone must, or we would see more 600 Ohm speakers.

It is facile by half to simply accept the end product of design and anoint it as an example of a general solution. There are many antennas that are NOT 50 Ohms. What they ARE is actually of no consequence except in the sense of efficiency and mission (the antenna cares not a whit about either).

I have many examples of 2 Ohm antennas (and lower) and of 600 Ohm antennas (and easily higher) and ALL can be induced to radiate all of the power applied to them. The distinguishing factor across the board is that each hi-Z antenna presents similar, physical characteristics to all other hi-Z antennas; and each low-Z antenna presents similar, physical characteristics to all other low-Z antennas. All couple power to the same load of the ï¿½ther. Clearly impedance and size are correlated and it is up to the designer to accommodate losses to achieve similar performance. The same statement is equally applicable to speakers of any impedance.

Is the antenna transforming its Z to that of the ï¿½ther? Of course it is just as the speaker is. Are they both transducers? Of course they are when transducer is applied loosely (but strictly speaking - no). Injecting this notion that transducers are a class distinct from transformers is simply myopic to force an argument. No sooner is the notion introduced than we find the correlative transducer of the receive antenna introduced to recover the power - now transformed (and very inefficiently one might add). The remainder of that power becomes part of the background noise of the cosmos (far more of it than is ever recovered for actual use).

Transducers, as a class, are far more prone to the loss through resistance than transformers - by definition. The speaker is feeding a lossy medium of air, and the sonar is feeding the less lossy medium of water. The difference is in the compression characteristics that turns power into heat. Core loss of the transformer is not due to compression, but is a direct analog (and electrons bumping into each other and atoms does constitute a form of compressive loss). There is no loss in space/ï¿½ther but neither are there any phonons, the classic

transport of transducer emission and coupling. If an antenna is to qualify as transducer, it must be with the proviso that it is distinctly different from every other transducer in lacking the common transport mechanism of phonons. This is like say walking is a form of mass transportation if you simply ignore the word mass. To support these specious forms requires enormous exaggerations.

Another transducer available as a common example (or perhaps not for less well-heeled equipment) is found in the Collins mechanical filter for interstage coupling. It has both input and output transducers that couple the mechanical (and thus heat-prone) energy into nickel-steel resonant disks. Nickel-steel is obviously less compressive than either air or water, and exhibits far higher Q (which is a factor of both antennas and transducers - in their medium) to the advantage of the circuit. To any bench tech working on receivers, they would unhesitatingly call these IF Transformers.

Does an antenna "transform" any Z to another Z? The process is obviously performed with concomitant and equivalent issues of efficiency regardless of the term inserted between quotes. Does the term substitution bring any change, or does it correct any error? No. It is a tautology to suggest that "transducer" is appropriate when every presumption finds a corresponding "transducer" necessitated by the force of discussing fields (how does one know these fields exist without the absolute necessity of completing the transformer action?). One may "know" in the purely abstract sense, but such knowledge through the centuries has rarely preceded the actuality of observation in the real transformed world.

The distinction between transduction and transformation does not preclude the sense of an antenna serving as a bridge between two system impedances. Neither hi-Z nor low-Z structures have a stranglehold on design, except through economy. We commonly employ very low-Z sources (transistors) to feed modest-Z loads (a common quarterwave antenna). The economic factor of that load (a quarterwave at 160M) is sometimes unsupportable and yet we find very few short, low-Z antennas designed with direct feed from the same low-Z transistor. Economy again forces some form of transformation (I would hesitate to call a Tuner a transducer) in that the commercial market sees very little sense in building low-Z sources for an incredibly small niche who would refuse to pay the price. Instead, commercial design accommodates to one Z and expects the user to transform it along the way. The same logic extends to, and through the antenna.

73's
Richard Clark, KB7QHC

1374. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 16:26:03 UTC
From: jder8745@aol.com
Message-ID: <20030717122603.21696.00000144@mb-m07.aol.com>
Source record: 112419

Someone sed:

"I wrote that if the antenna is operated off-resonance (excited by a
frequency other than its resonant frequency) it works but with less
vigor etc."

I have referred to my various engineering texts on antennas ans transmission
lines and can not find any discussion of antenna "vigor".

Jack K9CUN

1375. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 16:35:37 UTC
From: snarf <snarf@hotmail.com>
Message-ID: <P5ARa.5404$C71.4060@fe01.atl2.webusenet.com>
Source record: 112420

It is incorrect.

Snarf

"Nic. Santean" <nic@csd.uwo.ca> wrote in message news:3f16b377@shknews01...
>
> Below is a paragraph - from a known book -
> which I have difficulties understanding. Please
> somebody explain in more clear terms the
> phenomenon.
>
> < the context was about dipole antennas,
> however the comment has a general nature >
>
> "Radiation of electromagnetic waves is created
> when the alternating electric and magnetic fields
> attempt to collapse back toward the antenna.
> However, new fields being created by the next
> half cycle push the preceding fields into space,
> which is the mechanism of radiation."
>
> - from "The Beginner's Handbook of Amateur
> Radio" by Clay Laster, page 260
>
> Cordially,
>
> Nic. Santean
> http://www.csd.uwo.ca/~nic/
>
>

1376. BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 16:37:36 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f16d0d7$0$15031$cc9e4d1f@news.dial.pipex.com>
Source record: 112421

I'm intending to have a go at building this antenna. The only problem I have is that I cannot find a supplier of aluminium tubing that stocks single lengths long enough for a 8.3 metre boom. I therefore need to join two lengths of 25 x 25mm square tube together. Any one recommend a suitable method of doing this please ?. I'd rather avoid welding as I would have to buy the kit to do it.

Regards

Steve

1377. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 16:44:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <j0kdhv40gug9166fjrti4gssb7njf5osrf@4ax.com>
Source record: 112422

On Thu, 17 Jul 2003 10:35:01 -0400, "Nic. Santean" <nic@csd.uwo.ca>
wrote:

>
>Below is a paragraph - from a known book -
>which I have difficulties understanding. Please
>somebody explain in more clear terms the
>phenomenon.
>
>< the context was about dipole antennas,
> however the comment has a general nature >
>
>"Radiation of electromagnetic waves is created
>when the alternating electric and magnetic fields
>attempt to collapse back toward the antenna.
>However, new fields being created by the next
>half cycle push the preceding fields into space,
>which is the mechanism of radiation."
>
>- from "The Beginner's Handbook of Amateur
> Radio" by Clay Laster, page 260
>
>Cordially,
>
>Nic. Santean
>http://www.csd.uwo.ca/~nic/
>

Hi Nic,

It would seem that there is the necessity of a lag introduced
somewhere for this to make sense. In other words, some delay between
successive emissions of energy.

RF already being time sensitive in the sense of the common 360ï¿½
alternation of polarity would suggest that the previous field must not
follow the successive field in time order (otherwise there is nothing
to push as the former has already collapsed in synchrony to that which
follows). This thus presumes that the "first" field found nothing to
impede it; and it pushed free, but began to collapse some distance
out. As it did so, its transit space added lag and the original found
itself in competition with the next field emerging and they both
jostle out like passengers entering an airport moving walkway (or
escalator).

Mind you, this is simply my guess at the intent of the author's words. I would suspect they are more the product of his having seen or his having presented you with an illustration of fields that demands this discussion. You may find this more illuminating if you were to search for illustrations of field activity close to the antenna (or the discussion of magnetic lines emanating from the sun).

73's
Richard Clark, KB7QHC

1378. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 17:00:55 UTC
From: Dilon Earl <dilon_earl@mail.com>
Message-ID: <3f16d49f.103931205@news.easynews.com>
Source record: 112423

On Thu, 17 Jul 2003 09:06:32 -0500, "William E. Sabin"
<sabinw@mwci-news> wrote:

>Dilon Earl wrote:
>>
>>
>> Where does the loss occur? If you have 3 db of mismatch loss, is it
>> in the coax, tank circuit?
>>
>
>The loss in "mismatch loss" refers only to the
>fact that the power delivered by the generator to
>the load is less than it would be if the load
>resistance were the same value as the generator
>resistance, in other words if the load and
>generator were "matched".
>
>The best way to get a handle on this subject is to
>draw a diagram of a generator with voltage V=10,
>an internal resistance of 50 ohms, and a load
>resistor of R ohms. Let R vary from 1 ohm to 100
>ohms and calculate the power dissipated in the
>generator resistance (50 ohms), the power in the
>load resistance (R), and the total power. Plot a
>graph of the three quantities. The load power goes
>through a maximum when R=50 ohms.
>
>The maximum power dissipated in the generator
>resistance is 10^2/50=2 W, which occurs when R=0
>ohms. The minimum power dissipated in the
>generator resistance is 3.33^2/50=0.22 W which
>occurs when R=100 ohms. When R=50 ohms, the load
>power is 5^2/50=0.5 W (the maximum value), the
>dissipation in the generator resistance is
>5^2/50=0.5 W and the total power is 10^2/100=1 W.
>
>Bill W0IYH

Bill;
Thanks, that all makes sense. Can you consider a Transmitter to
have an internal resistance like the generator that changes with the
plate and tune controls?
If I have a 100 watt transmitter and my wattmeter shows 3 watts
reflected. Is 3 watts actually being dissipated in the tank and final
PA?

Sorry to ask such simple questions. I did search through Google on posts on this subject, just never could find the answer I was looking for.

1379. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 17:12:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <boldhvc4frjjs2dmj8huqk02dal4jfarb6@4ax.com>
Source record: 112424

On Thu, 17 Jul 2003 17:00:55 GMT, Dilon Earl <dilon_earl@mail.com>
wrote:
> If I have a 100 watt transmitter and my wattmeter shows 3 watts
>reflected. Is 3 watts actually being dissipated in the tank and final
>PA?

Hi Dilon,

Does it become 3 watts hotter under the same drive conditions without the reflected power? You would be surprised how few pundits actually discuss this in these terms. Of course everyone would be surprised if anyone attempted to perform this chore.

I like to include this jab at those who rave on about the impossibility of knowing the internal resistance of a transmitter and are satisfied to squeak out 100W RF for 250W DC in.

73's
Richard Clark, KB7QHC

1380. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 17:43:38 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <bf6n8a$bb5$1@news1.tribune.com>
Source record: 112426

When a car body is not available to provide the "other half" of the antenna,
you provide the other half of the dipole.

http://user.mc.net/~jdewey/sleeve_dipole/long_view_of_car.jpg

A commercial version is also available

http://www.antenna.com/lm_cat/lmrpg10.html

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:vh8rctbpa2n40d@corp.supernews.com...
> I wonder if radiated energy would increase measureably if one were to try
to
> balance mobile whip antenna by having another whip connected directly to
the
> body and tuning it. If it would, how would one locate, size, and tune
it?
> tnx
> hank wd5jfr
>
>

1381. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 17:49:46 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307170949.5f0737f3@posting.google.com>
Source record: 112425

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bf4l6l$i3k$1@hercules.btinternet.com>...

> I didn't say they were unimportant. I said they served only to add to the
> confusion when considering operation of the usual amateur installation when
> the generator internal resistance is unknown.

Indeed, and not only that, the generator (ham transmitter) is commonly
neither a linear system nor time invariant. Also, maximum power
(conjugate-matched load) from a linear generator is generally not the
most efficient case. A great many generators and amplifiers are
distincly NOT designed to deliver power to a matched load, but rather
to deliver power efficiently to a specific load which is mismatched
with respect to the output impedance of the generator/amplifier.

There are times when knowing that a generator is a linear 50 ohm
source (within some small tolerance) is important--I deal with them
all the time in the work I do--but in a typical ham transmitter
application, that's very seldom if ever the case.

Cheers,
Tom

1382. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:01:48 UTC
From: richardharrison@webtv.net
Message-ID: <27592-3F16E48C-64@storefull-2312.public.lawson.webtv.net>
Source record: 112428

Nic Santean wrote:
"-from "The Beginners`s Handbook of Amateur Radio" by Clay Laster, page 260."

Clay used many words to say the signal propagates too far to get back to the radiator. It continues its journey away from the radiator.

Radiation is really caused by exchange of energy between alternating magnetic and electric fields. They produce each other when they alternate. Static fields don`t radiate. They soon fade away.

J.C. Maxwell speculated that displacement current produces the same alternating magnetic lines as conduction current does. He was proved right.

"Static" magnetic and electric fields move out into space when current flows and charge builds. When they are no longer changing, the fields at some distance have reached practical limits and stop expanding. Alternate these fields, and the fields can build each other and travel on and on.

Best regards, Richard Harrison, KB5 WZI

1383. Re: SGC-235 Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:40:27 UTC
From: kf4tun <kf4tun@adelphia.net>
Message-ID: <v4CRa.59$gi.105515@news2.news.adelphia.net>
Source record: 112429

A dumb question, if you want run 700 watts why not buy a tuner designed to handle 900~1000 watts. That watt rating is the maximum it was designed to handle. I know that you have heard that X run his xxx watt tuner, xxx watts over it's rating and has been doing for whatever, But sooner or later, more likely sooner, you will hear about the catastrophic failure his system had, and he can't figure out what caused it. But, always remember "You paid for it, you have right to destroy it"

Jim, kf4tun

"M Wilson" <3518693@mail.com> wrote in message
news:740cebc3.0307161328.7c12d272@posting.google.com...
> Folks,
>
> Okay, I think my decision is in... The SGC-235 tuner. Does anyone
> have experience running power into this tuner, in excess of the
> "rated" 500 watts?
>
>
> Cecil had a good idea, initial tune with low power, and then add full
> smoke later on. My operation will be SSB, peaks at 600-700 watts,
> give or take. And yes, I am willing to cap power output at around
> 600, if need be ;-)
>
> Also, what configuration are you all using? Dipole, or long wire?
>
> Thanks in advance again, and yes, Roy, here I go with the considerable
> expense... thanks!

1384. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:44:51 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307171044.7d7c5297@posting.google.com>
Source record: 112430

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<tvBBkbFE2kF$EAbj@ifwtech.co.uk>...
>
> A transducer is any gadget that converts energy from one form into a
> *different* form. Examples include a loudspeaker (electrical energy to
> sound/mechanical energy), a microphone (the reverse), a light bulb and a
> photocell.
>
>
> It's a useful word for a useful idea.
>
> > If an antenna is not a transformer of some type, then why is it
> >affected by it's surroundings so much? They obviously are, just like
> >the primary's impedance is affected by what the secondary sees in a
> >transformer.
>
> That's a perfect example of the trap, because in reality it's not "just
> like". An antenna also has E-field interactions with its environment
> that a transformer doesn't have, so any resemblance will literally be
> only half-true.

Roy has clarified this adequately already.

Ok, I was half correct then. Two transducers make up one
transformer.

Certainly two dipoles very close to one another will affect each
other's impedance.

And a regular transformer with a core can definitely be affected
by a close EM-field.

Slick

1385. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:47:30 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <6bCRa.83215$Ph3.10407@sccrnsc04>
Source record: 112431

Dr. Slick wrote:

>
>
> Do you know of anyone who has mathematically derived the 73 Ohms
> of a dipole in free space?
>

Antennas, John Kraus, McGraw Hill 1950, Chapter 5-6, pages 143 to 146
gives a complete derivation for a 1/2 wavelength Antenna.

You need some Calculus and infinite series to understand the derivation.

Deacon Dave, W1MCE

1386. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:48:32 UTC
From: richardharrison@webtv.net
Message-ID: <6544-3F16EF80-166@storefull-2316.public.lawson.webtv.net>
Source record: 112443

Jack, K9CUN wrote:
"I have referred to my various engineering texts on antennas and transmission lines and can not find any discussion of antenna "vigor"."

I did not copy my statement. Vigor is defined in my "American College Dictionary as: "1. active strength or force---".

A rod in free space becomes excited and accepts energy, which it must re-radiate, when it is swept by a passing wave of its resonant frequency. Its first resonance is near a 1/2-wavelength. At frequencies slightly off-resonance, little current flows in the rod due to the opposition of its reactance.

You may have seen a mechanical analogy in the vibrating reed frequency meter.

Best regards, Richard Harrison, KB5WZI

1387. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:48:35 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307171048.46ff4df5@posting.google.com>
Source record: 112432

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<7827-3F167EC4-147@storefull-2311.public.lawson.webtv.net>...
> Ian, G3SEK wrote:
> "Examples include a loudspeaker---."
>
> Good transducer example. Its problem is abysmal efficiency, even if
> better than the usual incandescent lamp.
>
> The loudspeaker`s efficiency can be improved by a better match to its
> medium. The usual loudspeaker is small in terms of wavelength. A result
> is that it is capable of exerting much force on a small area of a very
> compliant medium, air. Air could better accept power exerted over a much
> larger area, especially at low frequencies, with less force required to
> make the air move..
>
> We have a high-Z source and a low-Z sink in the loudspeaker and air.
> Conversion from electric power to mechanical power can be more efficient
> through better impedance matching. Two solutions are often used for a
> better match, a larger loudspeaker or a horn between the loudspeaker and
> its air load. The larger speaker is directly a better match. The horn is
> an acoustic transformer. They both improve energy conversion efficiency.
>

But a speaker is designed for broadbanded operation, 20-22kHz, not
just one frequency like many antennas.

I'm sure a speaker optimized for one frequency alone will be much
different than a broadband one.

Slick

1388. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:52:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhds42ssu0vldc@corp.supernews.com>
Source record: 112433

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhbuf4i5pqkn05@corp.supernews.com>...
>
>>Dr. Slick wrote:
>>
>>>Roy Lewallen <w7el@eznec.com> wrote in message
news:<vh9untfnbtf294@corp.supernews.com>...
>>>
>>>
>>>>> What if the antenna was a wire shorting the transmission line?
>>>>>Then there would be very little radiated power, and a lot of reflected
>>>>>power.
>>>
>>> Actually mostly reflected back to the source, so not radiated or
>>>dissipated assuming ideal lossless transmission lines.
>>>
>>
>>No. "Reflected" power isn't delivered to the wire. It's an analytical
>>function that exists only on the feedline. If the feedline has no loss,
>>the same amount of power entering the line exits the line. You can have
>>any amount of "reflected power" you want by simply changing the
>>characteristic impedance of the line -- with no effect on the power
>>either exiting or leaving the line.
>>
>
>
> My point is that a lossless short will not radiate much and will
> also not dissipate heat, but much of the forward wave will be
> reflected.
> This is common knowledge.

Yes, but of no relevance that I can see to the subject at hand.
>
> . . .
>>>
>>> But an antenna must be performing some sort of transformer action.
>>> If you were designing an antenna to radiate underwater, or though
>>>Jell-o, or any other medium of a different dielectric constant than
>>>free space, you would have to change it's geometry. Even if it is E
>>>to H, and not V to I.
>>
>>Not transformer, transducer. More like a speaker than a megaphone.
>>

>
>
> Understood. But you have to admit that transformers and
> transducers have some similarities. You will still have to optimize
> the windings and magnets and size/shape of the speaker cone for
> optimum power tranfer of a single tone. And you will have to have to
> change the design if you decide to transmit sound underwater.
>

And transducers and automobiles have some similarities. You have to
optimize the engine of a car for optimum acceleration, and change the
tire tread design if you decide you want to drive on wet roads. So
really, an antenna is like an automobile.

>
>>It is true that the equations describing coupling between two antenna
>>elements are the same as the for the coupling between windings of a
>>transformer. But a single antenna element isn't a transformer any more
>>than a single inductor is a transformer. When you apply V and I to an
>>antenna, it creates E and H fields. When you apply V and I to an
>>inductor, it creates E and H fields. Both the antenna and inductor are
>>acting as transducers, converting the form of the applied energy. If you
>>put a secondary winding in the field of the primary inductor, the field
>>induces a voltage in the secondary. If (and only if) the secondary is
>>connected to a load, causing current to flow in it, that current
>>produces a field which couples back to the primary, altering its
>>current. Coupled antennas, or an antenna coupled to any other conductor,
>>work the same way -- although localized currents can flow in the absence
>>of an intentional load if the antenna is a reasonable fraction of a
>>wavelength long.
>>
>>But the single antenna isn't a transformer, any more than the single
>>inductor is. Each is a transducer, and the secondary winding, or coupled
>>conductor, is another transducer.
>>
>
>
> I see your point, that the primary could be considered one
> antenna, and the core material like free space, and the secondary
> would be the receive antenna. But i suspect even a single
> transducer/antenna can be optimized for maximum lines of flux through
> a core at a particular frequency, or max ERP in the case of the
> antenna. Otherwise we wouldn't have to tune these things.
>

Yep, and an automobile can be optimized for maximum acceleration. Good
argument for considering an antenna a type of automobile, no?

Y'see, if you really, really want an antenna to be a kind of automobile,
you can cook up a bunch of reasons to convince yourself that it is. The
same method works for astrology and fortune telling, too.

>
>
>>> Well, I'm not sure, but you would start off at an open, which
>>>would be transformed to a virtual short. But from there, it sounds
>>>like a complex mathematical derivation to get the 73 Ohms.
>>
>>And it's really, really tough and requires some *really* creative (read:
>>bogus) math to derive it from simply transmission line phenomena.
>>
>
>
> Do you know of anyone who has mathematically derived the 73 Ohms
> of a dipole in free space?
>
Yes, the following people, plus others:

E. Hallen
S. A. Schelkunoff
Ronold King
F. G. Blake Jr.
David Middleton
Charles W. Harrsion Jr.
C. J. Bouwkamp
M. C. Gray

These people have published papers on the topic in the Proceedings of the I.R.E., Journal of Applied Physics, Quarterly of Applied Mathematics, and in the case of Hallen's classical paper, Nova Acta (Denmark). Schelkunoff and King and Harrison, at least, have written books. Simplified derivations that are valid for a limited range of antenna lengths and make certain assumptions about the current distribution can be found in any antenna text. I believe Reg uses an method similar to one of those in some of his programs.

>
>
>
>>One of my favorites is King, Mimno, and Wing, _Transmission Lines,
>>Antennas, and Waveguides_, and that's probably the one I'd choose if I
>>had to select just one. It was reprinted as a paperback by Dover in
>>1965, and the paperback be found as a used book pretty readily and
>>inexpensively. Kraus' _Antennas_ is my favorite text on antennas, and is
>>certainly one of the most, if not the most, highly regarded. It's now in
>>its third edition, and you can often find used copies of earlier
>>editions at reasonable prices. For transmission lines, there's an
>>excellent treatment in Johnson's _Transmission Lines and Networks_. I
>>refer to Kraus' _Electromagnetics_ particularly when dealing with waves
>>in space. And Holt's _Introduction to Magnetic Fields and Waves_ is
>>pretty good for both.
>>
>>There are a lot of others, each with its strong and weak points. But you
>>can't go wrong with these.

>>
>>Roy Lewallen, W7EL
>
>
>
> Thanks Roy, someone else mentioned the Kraus book (German dude,
> eh?)

John Kraus (W8JK) is an American, born in Michigan, who received his Ph.D. in physics from the University of Michigan in 1933. After WWII he went to Ohio State University, where he's been a professor since. For some time, he was also director of the radio observatory there. He's written a number of books, including _Big Ear_, about radio astronomy. He was made a Fellow of the IEEE in 1954 and elected to the National Academy of Engineering in 1972. Among his awards are the U.S. Navy Meritorious Civilian Service Award (1946), Sullivant Medal (OSU's top award, 1970), Outstanding Achievement Award of the University of Michigan (1981), IEEE Edison Medal (1985), and Distinguished Achievement Award of the IEEE Antennas and Propagation Society (1985).

He's now in his 90's and, by a recent account, still active and sharp.

Roy Lewallen, W7EL

1389. Re: ATAS 120

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:54:51 UTC
From: alcca@aol.com
Message-ID: <20030717145451.27544.00000061@mb-m23.aol.com>
Source record: 112435

Rich and Bob thanks for the suggestions. I don't have a balcony that is wht I have been struggling with a good set up. The ground plate is rather large 2 feet X 2 feet and it is a 1/4 inch thick and according to MFJ provides the equivalent ground of a car. I think using an extension probably is a bad idea since the ATAS requires to be in direct contact with the ground. I am now thinking of mounting the ATAS directly to the ground plate and if I need to add some radials. What do you guys think.
Al Casanova
KE4MNF

1390. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:54:58 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F16F102.8090308@mwci-news>
Source record: 112434

Dilon Earl wrote:
>
> Bill;
> Thanks, that all makes sense. Can you consider a Transmitter to
> have an internal resistance like the generator that changes with the
> plate and tune controls?
> If I have a 100 watt transmitter and my wattmeter shows 3 watts
> reflected. Is 3 watts actually being dissipated in the tank and final
> PA?
>

No.

If the transmitter output is 100 W and the
reflected power is 3 W, then the 100 W is the
difference between 100+3=103 W (forward power) and
3 W (reflected power).

The question "where does the reflected power go?"
never seems to have an acceptable answer. Very
strange.

A good way to look at is as follows: The junction
of the transmitter output jack and the coax to the
antenna is a "node", which is just a "point" or
"location" where the jack and the coax meet. At
this node the voltage is exactly equal to the
voltage output of the amplifier (VPA) and also the
voltage across the input of the coax (VCOAX). The
voltage VCOAX) across the coax is equal to the
phasor sum of a forward voltage wave that travels
toward the antenna and a reverse voltage wave that
is traveling from the antenna backward toward the
transmitter.

Also, at the node, IPA is the current from the PA
and ICOAX is the phasor sum of a current wave that
travels to the antenna and a return current wave
that travels toward the transmitter.

At the node, the IPA current and the ICOAX current
are exactly equal and in the same direction
(toward the antenna). At the node the IPA current
is equal to the ICOAX coax forward current minus
the ICOAX reflected current. In other words there
is an *EQUILIBRIUM* at the node between VPA

voltage and VCOAX voltage, and an *EQUILIBRIUM* between IPA current and ICOAX (forward and reflected) current.

This explanation accounts for everything that is going on at the node. The answer to the question "where does the reflected power go?" is the following: "It is a nonsense question that has caused nothing but misery". The reflected power does not actually *GO* anywhere. The correct answer is that forward and reflected coax waves always combine precisely and exactly with the voltage and current that is delivered by the PA. The voltage and current at the junction are correctly accounted for. The basic principles here are Kirchhoff's voltage law and Kirchhoff's current law, as applied to the node. You can study Kirchhoff's laws in the textbooks.

If we apply these laws and calculate the 100 W power out of the PA and the 100 W power that is dumped into the coax, they are exactly equal. They cannot possibly be unequal. The power delivered is the real part of the product of VPA and IPA (100 W), which is identical to the real part of the product of VCOAX and ICOAX (100 W).

Observe carefully the following: We do not need to know anything about the PA and its circuitry. The PA is nothing more than an anonymous "black box". In other words, any 100 W (output) PA will perform exactly as I have described.

Bill W0IYH

1391. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:56:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhdsbc7b5sku33@corp.supernews.com>
Source record: 112436

I agree that it makes some sort of sense to call radiation resistance a "ficticious resistor". It makes no sense to call it a "ficticious resistance" -- any more than you'd call the capacitance of a short antenna a "ficticious capacitance". It only advertises a lack of knowlege of the principles of basic electricity.

Roy Lewallen, W7EL

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhbojfroo1fhb0@corp.supernews.com>...
>
>>I'd be one of the people arguing. Radiation resistance fits every
>>definition of resistance. There's no rule that a resistance has to
>>dissipate power. The late Mr. Carr was quite apparently confusing
>>resistance with a resistor, a common mistake.
>>
>
>
> Your point has been well taken, Roy. But you have to admit that
> radiation resistance is not a easily understood concept (which is why
> it may be a common mistake), so for someone to call it a "fictitious"
> resistance can make sense, in the sense that it is not a dissipated
> resistance. After all, "Imaginary" numbers are well accepted. And
> from an arguing sematics point of view (which is unfortunately
> necessary sometimes), even you call it "radiation resistance", which
> means that it is obviously not the same thing as a dissipative
> resistance like a 50 Ohm resistor.
>
> That being said, rest assured, Roy, that you have convinced me!
>
>
>
> Slick

1392. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 18:57:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhdsdfc3dvn4e@corp.supernews.com>
Source record: 112437

Yes, he died not long ago, within the last year I believe.

Roy Lewallen, W7EL

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhbojfroo1fhb0@corp.supernews.com>...
>
>>I'd be one of the people arguing. Radiation resistance fits every
>>definition of resistance. There's no rule that a resistance has to
>>dissipate power. The late Mr. Carr was quite apparently confusing
>>resistance with a resistor, a common mistake.
>>
>
>
> BTW, did Joseph Carr really pass away? Sad, his book is very practical.
>
>
> Slick

1393. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:02:17 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307171102.2d039772@posting.google.com>
Source record: 112438

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<6240-3F166508-20@storefull-2315.public.lawson.webtv.net>...
>
> Bailey says the surge impedance of an antenna is inversely proportional
> to the capacitance per unit length. Reminds one of a transmission line.
> This is non-uniform, so Bailey has an empirical equation which says the
> larger the periphery of the rod, ther smaller the average surge
> impedance.
>

I was going to point this out as a relationship: Zo=SQRT(L/C) for a
transmission line. You adjust the ground radials of a 1/4 WL vertical
to go from 37 Ohms to 50 Ohms, by bending them 45 degrees, which is
reducing the shunt capacitance (radial to ground), thereby increasing
the impedance, similar to the transmission line equation (impedance
inversely proportional to distributed capacitance).

Thanks for pointing this out, Richard.

> The ratio of the electric field to the magnetic field surrounding an
> antenna must be related to the ratio of volts to amps in the antenna
> wire (the surge impedance).
>
> The surge impedance of a thin-wire 1/2-wave dipole from page 500 is 610
> ohms (average).
>
> The surge impedance of a fat-cylinder 1/2-wave dipole from page 502 is
> 240 ohms (average).
>
> Pattern and gain are identical for both antennas. But, Dr. Slick may be
> on to something after all. The bandwidth of the fat antenna is about 3X
> that that of the thin. In antennas, bandwidth is often an indicator of
> match.
>

I'm not sure what you are getting at here. I understand that the
thicker radials give you broadbandedness. What's the definition of
"surge impedance" versus regular old "impedance"?

Slick

1394. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:05:01 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F16F35D.BA38796F@uci.edu>
Source record: 112440

W5DXP wrote:

> The
> 33.33W that makes a round trip to the impedance discontinuity and back
> to the load is not the same 33.33W that is reflected by the load. TV
> ghosting proves that to be true.

TV ghosting is primarily the result of multipathing, which is external
to the antenna system.

> The only voltage phase reversal in the given example is in the re-reflected
> wave associated with the 8.33W.

How are you determining your phase reversals? Don't forget that phase
reversal on reflection occurs when a wave encounters a more dense medium
(or a higher impedance).

73, AC6XG

1395. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:05:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhdsrm3lt0he07@corp.supernews.com>
Source record: 112439

Most simple derivations for the input impedance of a dipole assume it's infinitely thin. The general problem of a dipole made from wire of finite diameter is a lot tougher, and is the topic of the papers by the authors I listed in another recent posting. With EZNEC, you'll find that the dipole impedance will continue to change as you make the wire diameter smaller and smaller, until it gets too small for the program to handle at all.

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> Kraus comes up with Z=73 + j42.5. He then goes on to say that an actual
> dipole is made a few % shorter, which yields 65 + j0. When I did an EZNEC
> calculation on a 1/2 wave dipole at 3MHz, I did not quite get that. For a
> #30 wire in free space I got 76.81 + j43.89 at 3 MHz, and 72.88 + j0.3465
> at 2.94 MHz.
>
> I let EZNEC tell me what the wavelength was, and used 1/2 of that for the
> length of the dipole.
>
> Tam/WB2TT

1396. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:11:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhdt80m0ui3gde@corp.supernews.com>
Source record: 112441

When the "co-phased" CB whips were introduced into the market years ago, I saw it for the master stroke it was -- a whole lot of CB'ers who in the past would have bought only one antenna now bought two, effectively doubling the revenue of the antenna manufacturers. A brilliant move. And the placebo effect guarantees that the users will see superior results. Makes everyone happy, manufacturers and users alike.

Sounds like we're on the nexus of another breakthrough.

Roy Lewallen, W7EL

1397. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:13:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhdtadijt6k0b@corp.supernews.com>
Source record: 112442

The correct technical term for this is "oomph".

Roy Lewallen, W7EL

JDer8745 wrote:
> Someone sed:
>
> "I wrote that if the antenna is operated off-resonance (excited by a
> frequency other than its resonant frequency) it works but with less
> vigor etc."
>
> ----------
>
> I have referred to my various engineering texts on antennas ans transmission
> lines and can not find any discussion of antenna "vigor".
>
> Jack K9CUN

1398. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:19:38 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <j8-dndfgvMl0a4uiU-KYgw@comcast.com>
Source record: 112444

Steve,

25 mm is rather skinny to go 8.3 meters with. However, the following should work. I assume the tubing is available in 3 meter lengths. 10 foot lengths would be even better.

Get four 3 meter pieces, and cut one down to 2.3 meters. Now bolt and center this 2.3 meter piece to the side of one 3 meter pieces. The 2.3 meter piece will be the top of your antenna, the 3 meter piece the bottom. Now bolt the remaining 3 meter pieces to the bottom piece, and you should have an 8.3 meter boom. Whatever you do, do not use brass or copper hardware. You might want add a strap to the top side where each of the 3 meter pieces butts up to the 2.3 meter piece.

Tam/WB2TT

"Steve" <steve6690@hotmail.com> wrote in message news:3f16d0d7$0$15031$cc9e4d1f@news.dial.pipex.com...
> I'm intending to have a go at building this antenna. The only problem I have
> is that I cannot find a supplier of aluminium tubing that stocks single
> lengths long enough for a 8.3 metre boom. I therefore need to join two
> lengths of 25 x 25mm square tube together. Any one recommend a suitable
> method of doing this please ?. I'd rather avoid welding as I would have to
> buy the kit to do it.
>
> Regards
>
> Steve
>
>

1399. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:35:21 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <ZTCRa.84613$H17.25976@sccrnsc02>
Source record: 112447

Is that as in: "Oomph, oomph, omphpapa"? Oh! My poor tuba!!

Deacon Dave :-), W1MCE

Roy Lewallen wrote:
> The correct technical term for this is "oomph".
>
> Roy Lewallen, W7EL
>
> JDer8745 wrote:
>
>> Someone sed:
>>
>> "I wrote that if the antenna is operated off-resonance (excited by a
>> frequency other than its resonant frequency) it works but with less
>> vigor etc."
>>
>> ----------
>>
>> I have referred to my various engineering texts on antennas ans
>> transmission
>> lines and can not find any discussion of antenna "vigor".
>> Jack K9CUN
>
>

1400. Wanted: SWAN Mobile Antenna Info

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 19:44:09 UTC
From: Norm VE3CZI <ve3czi@arrl.net>
Message-ID: <u8DRa.1913$tJ4.167399@read1.cgocable.net>
Source record: 112449
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

I recently "saw" a very interesting Mobile Antenna Designed and Made by SWAN Electronics in the '60s era.

It covers 80 - 40 - 20 Meters. Has One coil with two variable Capacitor arrangements tapped on the coil for adjustment for 40 & 20 Meters. There is access through a plastic cover to tune the capacitors.
It has a 4 ft rod below the coil, with this switching assy in center and a CB Whip on top.
It is totally automatic ie: electronic switching..no manual or relays...very interesting design.

** Can anyone recollect what the model Number is of this Antenna might be? There are NO markings on the Antenna.
** Has anyone got any information on this Antenna?

Tnx & 73...Norm VE3CZI

1401. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 20:00:32 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf6v90$3o7$1@titan.btinternet.com>
Source record: 112451

"Tom Bruhns" wrote
> "Reg Edwards" wrote
> >
> > I didn't say they were unimportant.
> > I said they served only to add to the
> > confusion when considering operation of the usual amateur installation
when
> > the generator internal resistance is unknown.
>
> Indeed, and not only that, the generator (ham transmitter) is commonly
> neither a linear system nor time invariant. Also, maximum power
> (conjugate-matched load) from a linear generator is generally not the
> most efficient case. A great many generators and amplifiers are
> distincly NOT designed to deliver power to a matched load, but rather
> to deliver power efficiently to a specific load which is mismatched
> with respect to the output impedance of the generator/amplifier.
>
> There are times when knowing that a generator is a linear 50 ohm
> source (within some small tolerance) is important--I deal with them
> all the time in the work I do--but in a typical ham transmitter
> application, that's very seldom if ever the case.
>
==========
Tom, To add a bit more -

50-ohm generators as used in laboratories (so that measured reflexion loss, mismatch loss etc, mean something) are effectively constant voltage generators in series with a 50-ohms resistor, or constant current generators in shunt with a 50-ohm resistor. They may be followed by an ampifier whose output impedance is held constant at 50-ohms by some automatic means. None of these circuits bear much resemblance to a pair of 807's and a tuned tank.

The best that can be said about Rg of the usual HF radio transmitter is that Rg is indeterminate. IT EVEN VARIES AS THE LOAD IMPEDANCE IS CHANGED which most of the Guru's contributing to this newsgroup appear to be unaware of or at least choose to disregard. So what does "adjusting RL to equal Rg" mean? To use it in a description of feeder + antenna behaviour further propagates myths, including those surrounding SWR, forward power, reflected power, SWR meters, etc.

Does Terman ever bother to mention Rg of a Tx PA? If he doesn't it can't matter very much to him. The ARRL handbook, when numerically designing a transistor linear HF PA, makes no mention of Rg.

Reg, G4FGQ

1402. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 20:04:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f16e58e$1_2@corp-news.newsgroups.com>
Source record: 112427

Richard Harrison wrote:
> Terman said about the same thing about cancellation of the reflected
> wave in a waveguide. Terman offered several methods to generate the
> offsetting wave in a waveguide, and there are several ways to generate a
> wave which produces cancellation on a transmission line, too.

Trouble is, Terman didn't say anything about what happens to the
intrinsic energy that existed in the waves before they were
canceled. I say the energy in rearward-traveling canceled reflected
waves is reflected back toward the load. Jim (and others) disagree
even though we know that all the energy winds up incident upon the
load.
--
73, Cecil, W5DXP

1403. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 20:05:36 UTC
From: richardharrison@webtv.net
Message-ID: <6238-3F170190-276@storefull-2315.public.lawson.webtv.net>
Source record: 112452

Dr. Slick wrote:
"What`s the definition of "surge impedance" versus regular old
"impedance"?"

Arnold B. Bailey treats this better than anybody I`ve seen. But, there are many treatments. The regular old impedance of an antenna depends upon its termination.

Surge impedance of an antenna depends on its conductor`s inductance per unit length and capacitance per unit length. In the antenna these are not uniform as they are in a transmission line, and average values have been found useful.

Best regards, Richard Harrison, KB5WZI

1404. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 20:28:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qp0ehvc37dv7q9filt484rvmabonneq48h@4ax.com>
Source record: 112453

On Thu, 17 Jul 2003 12:05:19 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Most simple derivations for the input impedance of a dipole assume it's
>infinitely thin. The general problem of a dipole made from wire of
>finite diameter is a lot tougher, and is the topic of the papers by the
>authors I listed in another recent posting. With EZNEC, you'll find that
>the dipole impedance will continue to change as you make the wire
>diameter smaller and smaller, until it gets too small for the program to
>handle at all.
>
>Roy Lewallen, W7EL

Hi All,

The derivation of dipole electrical characteristics comes by neither
thin nor thick (cylindrical) elements but through a simpler
(conceptually, not mathematically) work described by S.A. Schelkunoff
in "Advanced Antenna Theory," John Wiley and Sons, 1952.

Schelkunoff approaches the design as merely the extension of the
transmission line and he answers the issue of the antenna (the thin
wire form) being non-linear (the presumed incremental
inductance/capacitance is not constant along the length of the split
transmission line) by simply employing conical structures.

The Biconical Dipole "develops a transverse spherical (TEM) wave
analogous to that on a conventional transmission line" (reference
"Antennas and Radiowave Propagation," Robert E. Collin, McGraw Hill,
1985). "Thus the biconical antenna theory provides a theoretical
basis for assuming a sinusoidal current distribution on thin-wire
antennas."

Like any transmission line terminated in its own character impedance,
the Biconical Dipole (within limits imposed by size and apex angle)
also presents a wide frequency range exhibiting a constant radiation
resistance (about 160 Ohms across three octaves, by my margin notes).

The easiest validation of this is found in the Discone.
http://www.qsl.net/kb7qhc/antenna/Discone/discone.htm

73's
Richard Clark, KB7QHC

1405. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 20:50:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhe30ifpapqg7e@corp.supernews.com>
Source record: 112454

Schelkunoff's method is elegant, and one that lends itself to relatively simple calculation -- in closed form -- with a computer. However, it doesn't give results which are in as good agreement with measurements than some other methods, so some assumptions made in his derivation aren't completely correct. A good summary of various methods and their validity appears in David Middleton and Ronold King, "The Thin Cylindrical Antenna: A Comparison of Theories", _Journal of Applied Physics_, Vol. 17, April, 1946.

The program for calculation of the "Field Day Special" antenna (ftp://eznec.com/pub/fdsp~.exe) uses Schelkunoff's method, and it's perfectly adequate for the purpose.

Of course, these days we can easily do very accurate calculations from very fundamental equations with a computer using the method of moments or other methods. There's a very good description of the method of moments in the second edition of Kraus' _Antennas_. I assume it's also in the third edition, which I don't yet have.

Roy Lewallen, W7EL

Richard Clark wrote:
> On Thu, 17 Jul 2003 12:05:19 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>Most simple derivations for the input impedance of a dipole assume it's
>>infinitely thin. The general problem of a dipole made from wire of
>>finite diameter is a lot tougher, and is the topic of the papers by the
>>authors I listed in another recent posting. With EZNEC, you'll find that
>>the dipole impedance will continue to change as you make the wire
>>diameter smaller and smaller, until it gets too small for the program to
>>handle at all.
>>
>>Roy Lewallen, W7EL
>
>
> Hi All,
>
> The derivation of dipole electrical characteristics comes by neither
> thin nor thick (cylindrical) elements but through a simpler
> (conceptually, not mathematically) work described by S.A. Schelkunoff
> in "Advanced Antenna Theory," John Wiley and Sons, 1952.
>
> Schelkunoff approaches the design as merely the extension of the

> transmission line and he answers the issue of the antenna (the thin
> wire form) being non-linear (the presumed incremental
> inductance/capacitance is not constant along the length of the split
> transmission line) by simply employing conical structures.
>
> The Biconical Dipole "develops a transverse spherical (TEM) wave
> analogous to that on a conventional transmission line" (reference
> "Antennas and Radiowave Propagation," Robert E. Collin, McGraw Hill,
> 1985). "Thus the biconical antenna theory provides a theoretical
> basis for assuming a sinusoidal current distribution on thin-wire
> antennas."
>
> Like any transmission line terminated in its own character impedance,
> the Biconical Dipole (within limits imposed by size and apex angle)
> also presents a wide frequency range exhibiting a constant radiation
> resistance (about 160 Ohms across three octaves, by my margin notes).
>
> The easiest validation of this is found in the Discone.
> http://www.qsl.net/kb7qhc/antenna/Discone/discone.htm
>
> 73's
> Richard Clark, KB7QHC

1406. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 21:08:42 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030717170842.14676.00000065@mb-m02.aol.com>
Source record: 112455

>
>I have referred to my various engineering texts on antennas ans transmission
>lines and can not find any discussion of antenna "vigor".
>
>Jack K9CUN
>
>

It is Viagora, it makes all antennas resonanted and transmission lines SWRless.
Add some Fractals, CFAs, EH?

Bada BUm

1407. Amendment to previous message -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 21:27:49 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf74ck$da2$1@titan.btinternet.com>
Source record: 112456

I referred to Terman as "him".

It should, of course, have been "HIM". ;o)

Reg.

1408. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 21:30:31 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f16f9ad$1_2@corp-news.newsgroups.com>
Source record: 112445

Jim Kelley wrote:

>
> W5DXP wrote:
>>The
>>33.33W that makes a round trip to the impedance discontinuity and back
>>to the load is not the same 33.33W that is reflected by the load. TV
>>ghosting proves that to be true.
>
> TV ghosting is primarily the result of multipathing, which is external
> to the antenna system.

:-) I'm talking about TV ghosting due to reflections on the transmission line between a TV test generator and a TV receiver. The only "multipathing" involved is the different paths taken by the reflected waves inside the transmission line.

>>The only voltage phase reversal in the given example is in the re-reflected
>>wave associated with the 8.33W.
>
> How are you determining your phase reversals? Don't forget that phase
> reversal on reflection occurs when a wave encounters a more dense medium
> (or a higher impedance).

Nope, a voltage phase reversal occurs when a wave encounters a *lower* impedance. A voltage wave encountering a higher impedance does not reverse phase. In the earlier example, the only lower impedance encountered is by the rearward-traveling wave flowing back into the impedance discontinuity. I repeat, Vref2(-rho) is the only voltage phase reversal.
--
73, Cecil, W5DXP

1409. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 21:31:18 UTC
From: "F. Feeney" <nononospam@spamless.com>
Message-ID: <bf74j6$62v$1@news01.cit.cornell.edu>
Source record: 112457

>>>Assuming one whip is pointing up, which way is the other whip pointing?
>>
>> The way I saw it done, the other whip was at the other end of the car
>> and also pointing up. I have no knowledge of whether this was actually
>> useful, but apparently the user thought it was.
>
>In which case, it is a phased vertical array, not a dipole. With
>a spacing of 1/8WL, one can get 4 dB gain that way.
>--
>73, Cecil http://www.qsl.net/w5dxp
>
>

Actually, I read about this in Don Johnson of Screwdriver antenna fame's book on mobile radio operation. IIRC, the folks experimenting with it put the second whip on the far end of the car - tied to the frame, ie grounded - not driven. When tuned to resonance an increase in RF current in the car body was noticed and I think they also saw about a 3db increase in radiated signal. I imagine it's not very popular because of the difficulty of tuning two antennas instead of one, and the visual aspect of a second large antenna on the vehicle. It just isn't that practical even for a 3 db increase in signal.

It wasn't presented as being a dipole or any form of phased array. Just as empirical data that picked up along the way that was interesting.

73,
Kevin, WB2EMS

1410. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 21:33:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f16fa58$1_2@corp-news.newsgroups.com>
Source record: 112446

Roy Lewallen wrote:
> When the "co-phased" CB whips were introduced into the market years ago,
> I saw it for the master stroke it was -- a whole lot of CB'ers who in
> the past would have bought only one antenna now bought two, effectively
> doubling the revenue of the antenna manufacturers. A brilliant move. And
> the placebo effect guarantees that the users will see superior results.
> Makes everyone happy, manufacturers and users alike.
>
> Sounds like we're on the nexus of another breakthrough.

They could have done a lot better if they had co-phased them front
to back instead of side to side.
--
73, Cecil, W5DXP

1411. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 21:42:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f16fc84_2@corp-news.newsgroups.com>
Source record: 112448

William E. Sabin wrote:
> If the transmitter output is 100 W and the reflected power is 3 W, then
> the 100 W is the difference between 100+3=103 W (forward power) and 3 W
> (reflected power).

If the source is a signal generator equipped with a circulator and
load, the generator is putting out 103 watts, and the circulator
load is dissipating 3 watts, is the generator still only putting
out 100 watts by definition?
--
73, Cecil, W5DXP

1412. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 21:43:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhe643se6ba4a5@corp.supernews.com>
Source record: 112458

W5DXP wrote:
>
> In which case, it is a phased vertical array, not a dipole. With
> a spacing of 1/8WL, one can get 4 dB gain that way.

In your dreams.

Roy Lewallen, W7EL

1413. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 22:10:56 UTC
From: snarf <snarf@hotmail.com>
Message-ID: <90FRa.5915$C71.53@fe01.atl2.webusenet.com>
Source record: 112459

Without sounding like too much of a wise guy, please explain the single electromagnetic pulse generated during a nuclear or other type of large explosion.

Does a certain degree of oscillation (ringing) occur to explain the vast distances travelled by what one would assume was a single large pulse?

Snarf

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:27592-3F16E48C-64@storefull-2312.public.lawson.webtv.net...
> Nic Santean wrote:
> "-from "The Beginners`s Handbook of Amateur Radio" by Clay Laster, page
> 260."
>
> Clay used many words to say the signal propagates too far to get back to
> the radiator. It continues its journey away from the radiator.
>
> Radiation is really caused by exchange of energy between alternating
> magnetic and electric fields. They produce each other when they
> alternate. Static fields don`t radiate. They soon fade away.
>
> J.C. Maxwell speculated that displacement current produces the same
> alternating magnetic lines as conduction current does. He was proved
> right.
>
> "Static" magnetic and electric fields move out into space when current
> flows and charge builds. When they are no longer changing, the fields at
> some distance have reached practical limits and stop expanding.
> Alternate these fields, and the fields can build each other and travel
> on and on.
>
> Best regards, Richard Harrison, KB5 WZI
>

1414. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 22:25:25 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f17226e$0$3135$cc9e4d1f@news.dial.pipex.com>
Source record: 112460

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:j8-dndfgvMl0a4uiU-KYgw@comcast.com...
> Steve,
>
> 25 mm is rather skinny to go 8.3 meters with. However, the following
should
> work. I assume the tubing is available in 3 meter lengths. 10 foot lengths
> would be even better.
>
> Get four 3 meter pieces, and cut one down to 2.3 meters. Now bolt and
center
> this 2.3 meter piece to the side of one 3 meter pieces. The 2.3 meter
piece
> will be the top of your antenna, the 3 meter piece the bottom. Now bolt
the
> remaining 3 meter pieces to the bottom piece, and you should have an 8.3
> meter boom. Whatever you do, do not use brass or copper hardware. You
might
> want add a strap to the top side where each of the 3 meter pieces butts up
> to the 2.3 meter piece.
>
> Tam/WB2TT
>
Thanks Tam,

the tubing comes in 5m lengths - so I could cut one down to 3.3m and place it end-to-end with the remaining 5m tube. Then use the 1.7m offcut bolted to the underside of the 5m and 3.3m tubes. I could go to 30mm tube if needed. All I need now is the plans for the antenna but I should have those soon. I have some 25mm wide earthing strap I could use between the sections.

Steve
G1FQD

1415. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 22:56:41 UTC
From: Dilon Earl <dilon_earl@mail.com>
Message-ID: <07aehvgu0mr2q0mopu28q23o0i769i4754@4ax.com>
Source record: 112461

On Thu, 17 Jul 2003 17:12:33 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:

>On Thu, 17 Jul 2003 17:00:55 GMT, Dilon Earl <dilon_earl@mail.com>
>wrote:
>> If I have a 100 watt transmitter and my wattmeter shows 3 watts
>>reflected. Is 3 watts actually being dissipated in the tank and final
>>PA?
>
>Hi Dilon,
>
>Does it become 3 watts hotter under the same drive conditions without
>the reflected power? You would be surprised how few pundits actually
>discuss this in these terms. Of course everyone would be surprised if
>anyone attempted to perform this chore.
>
>I like to include this jab at those who rave on about the
>impossibility of knowing the internal resistance of a transmitter and
>are satisfied to squeak out 100W RF for 250W DC in.
>
>73's
>Richard Clark, KB7QHC

Richard;
I'm not sure if it does get 3 watts hotter. I was always under
the impression that operating a transmitter with a high reflected
power was unhealthy for my PA.

1416. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:00:00 UTC
From: Dilon Earl <dilon_earl@mail.com>
Message-ID: <7gaehvouhfoah9jclfeqh0mg1v9va3kmh6@4ax.com>
Source record: 112462

On Thu, 17 Jul 2003 14:42:37 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>William E. Sabin wrote:
>> If the transmitter output is 100 W and the reflected power is 3 W, then
>> the 100 W is the difference between 100+3=103 W (forward power) and 3 W
>> (reflected power).
>
>If the source is a signal generator equipped with a circulator and
>load, the generator is putting out 103 watts, and the circulator
>load is dissipating 3 watts, is the generator still only putting
>out 100 watts by definition?

No, you just said it was putting 103 watts.. :-)

Was that the right answer?

1417. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:00:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf79qvhh1@sparta.btinternet.com>
Source record: 112463

> Do you know of anyone who has mathematically derived the 73 Ohms
> of a dipole in free space?
>
==========

Anybody, such as an 18-year old Japanese student, can do it who can integrate the power radiated by each elemental length of wire over a surrounding sphere.

The radiation pattern comes out in the wash. It's an elementary matter. Hopefully you are able to do it for yourself.

It is likely Heaviside was the first, mostly in his head, but because it was so obvious he never bothered to write it down.

The Ph.D's of his age would have ridiculed the idea anyway on the grounds that some of his other more important work lacked rigor. MFJ-259B's and Viagra were yet to come.

1418. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:06:33 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bf7a5rnkd1@slb6.atl.mindspring.net>
Source record: 112464
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

"Dick Carroll" <dickc58@att.net> wrote in message
news:3F162516.8E4BEC41@att.net...
>
>
> Jim Warner wrote:
>
> > Yeah, you know I just took a quick scan of the HF spectrum. Looks like
most
> > of the modern world has relinquished HF spectrum for more consistant,
secure
> > means of long range communications.
>
> There's always a helluva wrangle over most every aspect of
> HF at each and every WARC, gotta be some serious interest there somewhere.
>
>
>
> >
> > My argument is that BPL should be high pass filtered with a 30MHz
> > cut-off.
>
> There are a number of public safety agencies who still make serious use
of lowband
> VHF below 50 mHz, all the trunked systems nothwithstanding. Converting
those to
> UHF or up is a big $$$$$ proposition which just aint gonna happen iin the
financial
> climate facing those users for the forseeable future
> . The state I worked a career for that uses a series of frequencies in
the 42mhz
> region for statewide public safety comms
> would love to abandon it all in favor of a trunked UHF or above system but
can't find
> the ~$250mil it'd take to do the job. I'd expect that state and several
others that
> I know are on low VHF to have some pretty strong language for the FCC on
the BPL
> issue.
>
>
>
>

> > When the leakage of data begins to propagate erratically in the
> > lower
> > HF region, there may be fragmented co-node interference that may be a
> > duplicate color code match, causing network disruptions.
> > Another more basic issue is, Commonwealth Edison can't keep thier 60Hz
> > primary product from leaking. How the hell are they going to handle a
sub
> > carrier service on ratty grids maintained by employees that think the
power
> > is
> > good because your lights are on?
> > And finally, the sacrifice of the lower 28MHz (2-30) that is alleged to
be
> > affected
> > will not drastically affect the massive volume of throughput that will
be
> > crammed
> > down the throats of so many, or the massive volume of cashflow that will
be
> > enjoyed by so few.
>
>
>
> If FCC wants a real hornets nest to descend on DC they can assure it by
approving
> the
> BPL docket without many very serious limits, big chunks of frequency
exemptions and
> much other machinations to releive in advance a huge amount of what will
be real
> trouble for them if they don't. And no one knows if it would even work
acceptably
> then, much less if there will ever be a viable business plan stem from it
all. Who
> knows what emerging technology will render the whole scheme obsolete
sometime next
> week?
>
> Dick
>

There will be a big market is 'serious' amplifiers. BPL will be knocked for
a loop so often it will be rendered useless.

Not to mention the court cases that I HOPE will follow. We are the LICENSED
service.

Dan/W4NTI

1419. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:08:53 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bf7aa7$n2$1@slb4.atl.mindspring.net>
Source record: 112465
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

"Dick Carroll" <dickc58@att.net> wrote in message
news:3F162516.8E4BEC41@att.net...
>
>
> Jim Warner wrote:
>
> > Yeah, you know I just took a quick scan of the HF spectrum. Looks like
most
> > of the modern world has relinquished HF spectrum for more consistant,
secure
> > means of long range communications.
>
> There's always a helluva wrangle over most every aspect of
> HF at each and every WARC, gotta be some serious interest there somewhere.
>
>
>
> >
> > My argument is that BPL should be high pass filtered with a 30MHz
> > cut-off.
>
> There are a number of public safety agencies who still make serious use
of lowband
> VHF below 50 mHz, all the trunked systems nothwithstanding. Converting
those to
> UHF or up is a big $$$$$ proposition which just aint gonna happen iin the
financial
> climate facing those users for the forseeable future
> . The state I worked a career for that uses a series of frequencies in
the 42mhz
> region for statewide public safety comms
> would love to abandon it all in favor of a trunked UHF or above system but
can't find
> the ~$250mil it'd take to do the job. I'd expect that state and several
others that
> I know are on low VHF to have some pretty strong language for the FCC on
the BPL
> issue.
>
>
>
>

> > When the leakage of data begins to propagate erratically in the
> > lower
> > HF region, there may be fragmented co-node interference that may be a
> > duplicate color code match, causing network disruptions.
> > Another more basic issue is, Commonwealth Edison can't keep thier 60Hz
> > primary product from leaking. How the hell are they going to handle a
sub
> > carrier service on ratty grids maintained by employees that think the
power
> > is
> > good because your lights are on?
> > And finally, the sacrifice of the lower 28MHz (2-30) that is alleged to
be
> > affected
> > will not drastically affect the massive volume of throughput that will
be
> > crammed
> > down the throats of so many, or the massive volume of cashflow that will
be
> > enjoyed by so few.
>
>
>
> If FCC wants a real hornets nest to descend on DC they can assure it by
approving
> the
> BPL docket without many very serious limits, big chunks of frequency
exemptions and
> much other machinations to releive in advance a huge amount of what will
be real
> trouble for them if they don't. And no one knows if it would even work
acceptably
> then, much less if there will ever be a viable business plan stem from it
all. Who
> knows what emerging technology will render the whole scheme obsolete
sometime next
> week?
>
> Dick
>
One more thing. Remember the FCC and their decision to increase a owners amount of radio/tv stations he could hold? Well a committee in congress has put a kink in that plan.

I think we hams and other HF users should do the same thing. Write ALL your reps in congress. The FCC is obviously not qualified to do what it is doing. Anyone that even considers deploying BPL is braindead.

Dan/W4NTI

1420. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:09:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <93behvchokt00uoqdhagjai56abskpsi9i@4ax.com>
Source record: 112466

On Thu, 17 Jul 2003 22:56:41 GMT, Dilon Earl <dilon_earl@mail.com>
wrote:
>
>Richard;
> I'm not sure if it does get 3 watts hotter. I was always under
>the impression that operating a transmitter with a high reflected
>power was unhealthy for my PA.
>
>
Hi Dilon,

Some would suggest not, but then they wouldn't warrant their own
advice.

73's
Richard Clark, KB7QHC

1421. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:23:45 UTC
From: dplatt@radagast.org
Message-ID: <vhec01ap09s22f@corp.supernews.com>
Source record: 112467
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

In article <bf7a5rnkd1@slb6.atl.mindspring.net>,
Dan/W4NTI <w4nti@NOSPAMmindspring.com> wrote:

>There will be a big market is 'serious' amplifiers. BPL will be knocked for
>a loop so often it will be rendered useless.

Wouldn't surprise me. The FCC requires the use of the least amount of
power needed to establish a given mode of communication. If BPM fills
the whole HF spectrum with S9-level fog, then QRP will go out the
door, and maximum-legal power will become technically necessary to
"burn through".

I'd hate that. So would our neighbors. Expect a big increase in
TVI/RFI complaints.

Similar things might happen with other licensed HF services... they
may also have to crank up their power.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1422. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:29:29 UTC
From: Raphael Clancy <rafemonkey@yah00.c0m>
Message-ID: <MPG.1980d0fc69b19c0989680@netnews.comcast.net>
Source record: 112468

Hi Bob,

my plan was to go with the fixed antenna, and let the motion of the
earth sweep out a path in the sky.

I'm still trying to figure out the frequency, and from that the size. I
was looking at RadioJove (http://radiojove.gsfc.nasa.gov/) and they use
a 7.09m simple dipole antenna to listen to radio storms from Jupiter. I
think, at least for my first experiments, I might try something in this
range. Eventually it would be nice to listen at 1420mhz, but from what
I've read simple dipoles aren't too good for high frequency signals. I
also checked out Mag-loop antennas, and they look pretty interesting. I
wish I could be more specific about my antenna plans, but my radio
experience wouldn't fill a 3x5 card. I think I'll start with a small
simple dipole, and just hook that up to my multi-meter to see what comes
over the line. but after that I think I might try a mag-loop, this place
(http://www.iri.tudelft.nl/~geurink/magnloop.htm) has a pretty good
howto. But, I need to do a bit of spectrum research, and see where I'm
most likely to find "natural" signals.

I'm planning on direct sampling. Since this project is all happening
under my wife's watchful eye, my funds are limited. If I can get my
hands on a cheap, low noise RF amplifier I'll go that way, otherwise, I
have a cookbook with some schematics I can copy. As far as the A/D
converter I was going to build something along these lines:
http://dbserv.maxim-ic.com/appnotes.cfm?appnote_number=151

thanks for all the info!

R.

In article <c5l5fb-k5c.ln@p400bob.lse.com.au>, bcnntp@optusnet.com.au
says...
> Hi Raphael
>
> Okay understand a bit more now..
>
> The question I have to then ask is in mapping the sky are you hoping to see
> higher and lower areas of RF density? To do this you will need some kind of
> steerable system and poll for signal strengths at a series of given
> co-ordinates. This would be very ambitious as making a narrow steerable
> beams is a science in itself. (You can do it mechanically or electrically.
> ie a dish/steerable yagi or by changing the phasing relationship between
> the antenna elements. With a computer the second method can achieve very
> narrow beamwidths by using the signal null instead of a peak. Very fiddly
> though. Never seen the software to do it...)

>
> If you are only intending to capture information with it pointed in one
> direction and using the earths rotation to build a east-west traverse then
> this would be a lot simpler. What you havent mentioned is the frequency of
> operation as this governs the antennas size and design. You said an A/D..
> Is this after a receiver or are you direct sampling and building up FFT
> buckets to get a VLF spectrum display? At such low frequencies antenna
> directivity is an entirely different exercise. If you are talking about
> (say) 3-30MHz a shielded magnetic loop will give you some directivity and
> reduction of man made noise. Not sure about VLF antennas. A guy I use to
> work with has done some work in this area
> (http://www.zeta.org.au/~ollaneg). It has some excellent info on data in
> noise techniques as well.
>
> I realise I have digressed a little. Maybe I should read what you have said
> <grin>
>
> Cheers Bob
>

1423. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:29:53 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf7bhg$q1j$1@hercules.btinternet.com>
Source record: 112369

> I like to include this jab at those who rave on about the
> impossibility of knowing the internal resistance of a transmitter and
> are satisfied to squeak out 100W RF for 250W DC in.
>
> 73's
> Richard Clark, KB7QHC

Rich, I'm reminded of Laurel and Hardy. Here's another fine mess you've
got yourself into.

From your favourite Italian Clown.

1424. Re: ATAS 120

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:45:59 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <c1dehvst6i22ohg25l8mi0mbib3ih1dqp1@4ax.com>
Source record: 112508

On 16 Jul 2003 18:20:37 GMT, alcca@aol.com (ALCCA) wrote:

>Hi, I am thinking of getting a Yaesu 897 with the ATAS 120 antenna for both
>mobile and base operation. My problem is that I live in a condo which does not
>allow antennas on the roof. I have been thinking of getting the MFJ 1904 which
>is a 2' X 2" stainless steel base and mounting the ATAS 120 with an extension
>(to keep RF away from me and also to get it as close as possible to the
>cathedral ceiling). What do you guys think of such an arrangement.
>Thanks
>Al Casanova
>KE4MNF

I'm not that familiar with the atas antennas, but you might look at
some kind of ground -- a counterpoise wire(s), radials, whatever, to
replace the ground the car normally provides. I'm not sure the little
steel plate will be much of a ground. Maybe you can use it as a
gathering point for some radials.

Bob
k5qwg

1425. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-17 23:51:49 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f173613@shknews01>
Source record: 112370

I have put some thoughts on this stuff - about
RF radiation . Probably what is written in that
book is not correct - I found some other glitches
there as well.

I have tried to develop my own intuition about
radiation, and I've come up with this. What do
you think about the follwoing scenario :

The antenna (say dipole) is fed with some
electrical RF energy (voltage, basically). Take
a snapshot of the antenna when it peaks - say -
on its magnetic field (the two fields are 90 degrees
out of phase, in the case of a dipole). Now, what
would happen if we decouple the source of RF
energy at this moment? This field would collapse
creating some current in the antenna... and from
here we would experience amortized oscillations,
similar to those of an LC tank - no significant
propagation whatsoever !! However, we actually
do not interrupt the RF source. Then, this source
(changing its voltage) does exactly what the magnetic
field would do if was left alone : it creates the current
which would have been created by the magnetic field
otherwise. So, the magnetic field "has lost its job".
Well, now we should invoke the energy conservation
laws (I'm not an expert, but I know that "nothing gets
lost" when we talk about energy) which tells us that
we have some energy left in the magnetic field, energy
which has not done any "useful work" yet. Where does
this energy go?! Well, this "potentiality" manifests as a
propagated magnetic field: if some proper medium is
brought in its "relative proximity", the field will happily
collapse there and induce some current in that medium
(a receiver antenna - hopefully). It seems to me that
propagation in this sense is about manifesting some
spatial property at relative distance from the source -
say, a "proximity property".

Unfortunately I am missing something here, since
it seems that "the cooperation" bwetween the electric
field and magnetic field plays an important role in RF
radiation - and I don't know what this role is yet.

Please opinionate : does this get close to an intuition
about radiation? I am not a physicist , and I am not
even an alleged radio amateur (I can hardly call myself
a computer scientist); however, I am dead curious
about the matter.

Cordially,

Nic.
http://www.csd.uwo.ca/~nic

"snarf" <snarf@hotmail.com> wrote in message
news:90FRa.5915$C71.53@fe01.atl2.webusenet.com...
> Without sounding like too much of a wise guy, please explain the single
> electromagnetic pulse generated during a nuclear or other type of large
> explosion.
>
> Does a certain degree of oscillation (ringing) occur to explain the vast
> distances travelled by what one would assume was a single large pulse?
>
> Snarf
>
>
> "Richard Harrison" <richardharrison@webtv.net> wrote in message
> news:27592-3F16E48C-64@storefull-2312.public.lawson.webtv.net...
> > Nic Santean wrote:
> > "-from "The Beginners`s Handbook of Amateur Radio" by Clay Laster, page
> > 260."
> >
> > Clay used many words to say the signal propagates too far to get back to
> > the radiator. It continues its journey away from the radiator.
> >
> > Radiation is really caused by exchange of energy between alternating
> > magnetic and electric fields. They produce each other when they
> > alternate. Static fields don`t radiate. They soon fade away.
> >
> > J.C. Maxwell speculated that displacement current produces the same
> > alternating magnetic lines as conduction current does. He was proved
> > right.
> >
> > "Static" magnetic and electric fields move out into space when current
> > flows and charge builds. When they are no longer changing, the fields at
> > some distance have reached practical limits and stop expanding.
> > Alternate these fields, and the fields can build each other and travel
> > on and on.
> >
> > Best regards, Richard Harrison, KB5 WZI
> >
>
>
>

1426. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 00:42:16 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f1741c1@shknews01>
Source record: 112371

Sorry guys, I have just realized that there are
replies to my posting, which I somehow lost
(from Richard Harrison, for example).

I am using the NNTP server 203.99.143.60
Does this server have problems ??

Nic.

1427. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 00:52:36 UTC
From: Ron <rmrippy@hotmail.com>
Message-ID: <oxHRa.247043$nr.9867522@twister.southeast.rr.com>
Source record: 112372

It helps me understand reflected power to think of a 50 ohm source of 10 volts connected to a half wave lossless line. In this situation the line can be removed from the equation and the load can be considered connected directly to the 50 ohm 10 volt source. If the load R is either a short or open circuit, there will be zero power transferred to the load, but there will be a big difference in the power dissipated in the source, two watts with the short and zero watts with the open.

If we bring the transmission line back into the picture, nothing changes, so the reflected power must be not be of any consequence as long as 1) the line is lossless, 2) we ignore transients, and 3) we do not use a circulator to separate the forward and reflected waves.

1) If the line is lossy, then the reflected voltage will not exactly cancel the forward voltage and there will be some power dissipated in the line from both the forward and the reverse waves.

2) If we consider transients, the initial conditions will be the same as if we connected a 50 ohm load to the source (instead of the short or the open). Things won't revert to the "line removed" case until the reflected wave reaches the input of the line. I'm not sure what happens to the reflected power. I'm guessing that is remains stored in the line until the source is removed and then (since the line is lossless) travels back and forth along the line forever. Since the voltage and current are 90 degrees out of phase, the stored power is purely reactive but could become real dissipated power if any resistance is reconnected to the line.

3) If we place a circulator at the line input, it's like connecting a 50 ohm load on the source i.e., it transfers 0.5 watts to the line and the reflected wave dumps the 0.5 watts into the circulator termination.

Any comments or corrections?

Ron, W4TQT

1428. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 00:58:48 UTC
From: Old DXer <"Old DXer"@connectnet.net>
Message-ID: <cDHRa.2572$ff.2194@fed1read01>
Source record: 112373

A simple explanation at URL:
http://ihome.cuhk.edu.hk/%7Es016969/physproj/index.htm

Or the math at URL:
http://www.phys.virginia.edu/classes/109N/more_stuff/Maxwell_Eq.html

1429. Re: 40 m inverted vee question?????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 01:23:49 UTC
From: KC1DI <elbc2@gwi.net>
Message-ID: <UgidnQKTyru80YqiU-KYuQ@gwi.net>
Source record: 112374

capo wrote:

> My 40 m reson. iv used to be completely horizontal at 30 ft.
>
> I had to bend one end (while leaving the other horizontal) at
> about a 45 deg angle to about 10 ft above the ground.
>
> The SWR seems to be higher. 1.5:1 at its lowest. I can't remember
> what it was before but I know it wasn't this high.
>
> Will this cause an efficiency problem or any other?????

you have lowered the resonance of the system.. you will need to shorten the
antenna a bit to bring the swr down.. though 1:5:1 is not that bad.
73 dave kc1di

--
RED HAT LINUX 8.0

1430. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 01:35:30 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F174EE2.6050106@mwci-news>
Source record: 112375

William E. Sabin wrote:
> Dilon Earl wrote:
>
>>
>> Bill;
>> Thanks, that all makes sense. Can you consider a Transmitter to
>> have an internal resistance like the generator that changes with the
>> plate and tune controls?
>> If I have a 100 watt transmitter and my wattmeter shows 3 watts
>> reflected. Is 3 watts actually being dissipated in the tank and final
>> PA?
>>
>
>
> No.
>
> If the transmitter output is 100 W and the reflected power is 3 W, then
> the 100 W is the difference between 100+3=103 W (forward power) and 3 W
> (reflected power).
>
> The question "where does the reflected power go?" never seems to have an
> acceptable answer. Very strange.
>
> A good way to look at is as follows: The junction of the transmitter
> output jack and the coax to the antenna is a "node", which is just a
> "point" or "location" where the jack and the coax meet. At this node the
> voltage is exactly equal to the voltage output of the amplifier (VPA)
> and also the voltage across the input of the coax (VCOAX). The voltage
> VCOAX) across the coax is equal to the phasor sum of a forward voltage
> wave that travels toward the antenna and a reverse voltage wave that is
> traveling from the antenna backward toward the transmitter.
>
> Also, at the node, IPA is the current from the PA and ICOAX is the
> phasor sum of a current wave that travels to the antenna and a return
> current wave that travels toward the transmitter.
>
> At the node, the IPA current and the ICOAX current are exactly equal and
> in the same direction (toward the antenna). At the node the IPA current
> is equal to the ICOAX coax forward current minus the ICOAX reflected
> current. In other words there is an *EQUILIBRIUM* at the node between
> VPA voltage and VCOAX voltage, and an *EQUILIBRIUM* between IPA current
> and ICOAX (forward and reflected) current.
>
> This explanation accounts for everything that is going on at the node.

> The answer to the question "where does the reflected power go?" is the
> following: "It is a nonsense question that has caused nothing but
> misery". The reflected power does not actually *GO* anywhere. The
> correct answer is that forward and reflected coax waves always combine
> precisely and exactly with the voltage and current that is delivered by
> the PA. The voltage and current at the junction are correctly accounted
> for. The basic principles here are Kirchhoff's voltage law and
> Kirchhoff's current law, as applied to the node. You can study
> Kirchhoff's laws in the textbooks.
>
> If we apply these laws and calculate the 100 W power out of the PA and
> the 100 W power that is dumped into the coax, they are exactly equal.
> They cannot possibly be unequal. The power delivered is the real part of
> the product of VPA and IPA (100 W), which is identical to the real part
> of the product of VCOAX and ICOAX (100 W).
>
> Observe carefully the following: We do not need to know anything about
> the PA and its circuitry. The PA is nothing more than an anonymous
> "black box". In other words, any 100 W (output) PA will perform exactly
> as I have described.
>
> Bill W0IYH
>

This discussion assumes that we want the 100 W PA
to actually deliver 100 W to the coax. Assume a
Bird model 43 wattmeter in the line. If the PA is
actually delivering 100 W to the coax, then the
forward power must be 103 W and the reflected
power must be 3 W. The PA output power is
103-3=100 W. This is how we use the Bird
wattmeter. The Bird instruction manual tells us this.

Keeping everything simple and not getting into
peripheral issues is desirable at this point. For
example, a circulator will dissipate the 3 W, but
the above discussion does not assume a circulator.
The circulator's job is to force a 50 ohm load on
the PA, despite the fact that the coax input
impedance is not 50 ohms.

Bill W0IYH

1431. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 01:53:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f175422_5@corp.newsgroups.com>
Source record: 112376

Roy Lewallen wrote:
> W5DXP wrote:
>> In which case, it is a phased vertical array, not a dipole. With
>> a spacing of 1/8WL, one can get 4 dB gain that way.
>
> In your dreams.

I'm dreaming of The ARRL Antenna Book, 15th edition, page 8-6. Spacing 1/8WL, phasing=135 deg, Gain = 4.1 dB. Remember, this is for two 10m verticals mounted in line with the vehicle, not one on each side of the vehicle. It is essentially a two element vertical beam with a cardioid radiation pattern and a large front/back ratio.
--
73, Cecil http://www.qsl.net/w5dxp

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1432. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 01:57:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f17550b_5@corp.newsgroups.com>
Source record: 112377

Dilon Earl wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>If the source is a signal generator equipped with a circulator and
>>load, the generator is putting out 103 watts, and the circulator
>>load is dissipating 3 watts, is the generator still only putting
>>out 100 watts by definition?
>
> No, you just said it was putting 103 watts.. :-)
> Was that the right answer?

According to some posters, a source only puts out forward power minus
reflected power, by definition. 103W - 3W = 100W
--
73, Cecil http://www.qsl.net/w5dxp

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1433. Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:07:36 UTC
From: Paul@Rasdoc.com
Message-ID: <e4lehvkk0hv42s1q9777sgvhp5893a18d3@4ax.com>
Source record: 112378

Is it possible to build an omnidirectional receiving antenna with
gain?

Let us assume an ideal dipole Call it 0dBd

Now let us build two ideal dipole antennas and combine their outputs
we have an antenna with possibly twice the received energy or 3dBd
gain.

Now for signals from certain orientations we signals canceling in
phase for less than 0dBd gain....

Is it possible to build an antenna with more capture area, giving
gain,
without adding directivity?

Thought experiment saying it is possible......
Cover a 1 meter sphere with solar cells......

Cover a 100 mete sphere with solar cells......
It's clear that the 100 meter sphere would gther more energy than the
1 m sphere.... thus it seams it would be possible,

No what forms would an isotropic (Or at lease hemispherical) pattern
antenna with gain > 0 dBi look like?

Paul (Kl7JG)

1434. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:09:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1757eb$1_5@corp.newsgroups.com>
Source record: 112379

Nic. Santean wrote:
> Please opinionate : does this get close to an intuition
> about radiation?

The RF energy from the source accelerates and decelerates free electrons.
The changing energy levels of the free electrons causes the excess energy
to be radiated as coherent photons.
--
73, Cecil http://www.qsl.net/w5dxp

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1435. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:21:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f175aa9_5@corp.newsgroups.com>
Source record: 112380

Ron wrote:
> It helps me understand reflected power to think of a 50 ohm source of 10
> volts connected to a half wave lossless line. In this situation the line
> can be removed from the equation and the load can be considered
> connected directly to the 50 ohm 10 volt source. If the load R is either
> a short or open circuit, there will be zero power transferred to the
> load, but there will be a big difference in the power dissipated in the
> source, two watts with the short and zero watts with the open.

Not with a Norton source. :-) Quoting _Fields_and_Waves_in_Communication_
Electronics_, by Ramo, Whinnery, & Van Duzer, page 721: "It must be
emphasized, as in any Thevenin equivalent circuit, that the equivalent
circuit was derived to tell what happens in the *LOAD* under different
load conditions, and significance cannot be automatically attached to
a calculation of power loss in the internal impedance of the equivalent
circuit." Seems your above assertion violates that sage admonition.
--
73, Cecil http://www.qsl.net/w5dxp

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1436. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:35:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f175de1$1_5@corp.newsgroups.com>
Source record: 112381

Paul@Rasdoc.com wrote:
> Is it possible to build an omnidirectional receiving antenna with
> gain?

Of course, the Aug. 2003 QST has some of them on page 19 & 108. The
Comet GP-24 for 2.4GHz is twenty end-to-end 1/2WL antennas.
--
73, Cecil http://www.qsl.net/w5dxp

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1437. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:47:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhenv7ldf01052@corp.supernews.com>
Source record: 112382

If by omnidirectional you mean truly the same in all directions, up, down, and in azimuth, the answer is no.

Consider this. If you put 100 watts into a perfectly efficient antenna, 100 watts is radiated. If the antenna is omnidirectional (isotropic), the 100 watts is spread evenly out in all directions, and we can readily calculate the power density at any point in space:

Power density (watts/square meter) = P / A

where P is the power applied to the antenna and therefore radiated, and A is the area over which the power is evenly spread. The area of a sphere is 4 * pi * r^2, where r is the radius of the sphere (in meters, for power density in watts per square meter), so the power density from an isotropic source at any distance r is

P / (4 * pi * r^2)

So far, I haven't said a word about what kind of antenna is doing the radiating, only that it distributes the applied power evenly in all directions.

To get gain, you need greater power density for a given power input P at a given distance r (which is, in fact, the definition of gain). So what you need in order to get 3 dB gain is an antenna that, if you apply 100 watts of power to it, it radiates 200 watts.

When you figure out how to do that, let us know.

If you look into the meaning of "capture area", you'll soon find it's ham-speak for "effective aperture" which, for a lossless antenna, is the same as gain, and the same as directivity. So if two lossless antennas have the same gain, they have the same "capture area", regardless of their physical sizes or shapes.

Roy Lewallen, W7EL

Paul@Rasdoc.com wrote:
> Is it possible to build an omnidirectional receiving antenna with
> gain?
>
> Let us assume an ideal dipole Call it 0dBd
>
> Now let us build two ideal dipole antennas and combine their outputs
> we have an antenna with possibly twice the received energy or 3dBd
> gain.
>

> Now for signals from certain orientations we signals canceling in
> phase for less than 0dBd gain....
>
>
>
> Is it possible to build an antenna with more capture area, giving
> gain,
> without adding directivity?
>
>
> Thought experiment saying it is possible......
> Cover a 1 meter sphere with solar cells......
>
> Cover a 100 mete sphere with solar cells......
> It's clear that the 100 meter sphere would gther more energy than the
> 1 m sphere.... thus it seams it would be possible,
>
> No what forms would an isotropic (Or at lease hemispherical) pattern
> antenna with gain > 0 dBi look like?
>
>
> Paul (Kl7JG)
>
>
>

1438. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:49:18 UTC
From: richardharrison@webtv.net
Message-ID: <9475-3F17602E-368@storefull-2318.public.lawson.webtv.net>
Source record: 112384

Snarf wrote:
"Without sounding like too much of a wise guy, please explain the single pulse generated during the single electromagnetic pulse generated during a nuclear or other type of large explosion."

Can`t shed much light though my posting was referenced above.

Had a course in "Non-Sinusoidal Waveforms" 50-some years ago. It included finding sinusoidal constituents of various waveforms. A single bang event can excite resonances which decline a certain percentage of the remaining energy with each cycle. These are called damped oscillations. These can be generated by simply opening a switch.

But, I am ignorant of neuclear physics. Surely someone in this group has studied what makes lightning strike when an A-bomb detonates. All Hiroshima and Nagasaki meant to me was that I might soon be going home. I soon got to walk through Nagasaki before coming home. EMP was almost the least of the targets` problems. Over a large area, about all that was left standing were "fireproof" safes. Nagasaki`s 1940 population was 252,630. Its 1946 population was 174,141. The bomb dropped on August 9, 1945. We thought the Japs richly deserved what they got, and we all cheered when we heard the news. The life saved may have been my own. The bombs saved many more Japanese lives than they took.

The amazing thing is that the Japs hesitated after Hiroshima and the second bomb had to be dropped. It is tragically like the old Jack Benny joke when the mugger demands: "Come on now, your money or your life, what`s it going to be?" Benny replies: "I`m thinking, I`m thinking!"

Best regards, Richard Harrison, KB5WZI

1439. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:50:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vheo4ldqpdh5b3@corp.supernews.com>
Source record: 112383

I'll relent. You might be able to pull it off on 10 meters.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> W5DXP wrote:
>>
>>> In which case, it is a phased vertical array, not a dipole. With
>>> a spacing of 1/8WL, one can get 4 dB gain that way.
>>
>>
>> In your dreams.
>
>
> I'm dreaming of The ARRL Antenna Book, 15th edition, page 8-6. Spacing
> 1/8WL,
> phasing=135 deg, Gain = 4.1 dB. Remember, this is for two 10m verticals
> mounted
> in line with the vehicle, not one on each side of the vehicle. It is
> essentially
> a two element vertical beam with a cardioid radiation pattern and a large
> front/back ratio.

1440. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:51:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f17619f_5@corp.newsgroups.com>
Source record: 112385

William E. Sabin wrote:
> Keeping everything simple and not getting into peripheral issues is
> desirable at this point.

The assumption that the source is outputting (forward power
minus reflected power) is essentially saying that all amplifiers
are perfectly matched and re-reflect all reflected power.
That seems like a stretch to me.
--
73, Cecil http://www.qsl.net/w5dxp

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1441. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 02:59:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vheok18dktkmc6@corp.supernews.com>
Source record: 112386

Sometimes "omnidirectional" means "equally radiating in all azimuth directions", which is the interpretation Cecil has used. In that case, yes, of course, you can achieve gain by concentrating the power in the vertical direction, i.e., increasing the power density at some elevation angles at the expense of others. A collinear antenna (linear antennas placed end-to-end as Cecil describes) is a common way of achieving that.

I inferred from the original posting that the intended meaning was truly omnidirectional, as in isotropic, the same in all directions in three dimensional space. If that's correct, the answer is no.

The explanation in my response was in terms of a transmitting antenna. It's well established (the reciprocity principle) that the gain of an antenna is the same for transmitting and receiving, so the conclusion is equally valid for a receiving antenna.

Roy Lewallen, W7EL

W5DXP wrote:
> Paul@Rasdoc.com wrote:
>
>> Is it possible to build an omnidirectional receiving antenna with
>> gain?
>
>
> Of course, the Aug. 2003 QST has some of them on page 19 & 108. The
> Comet GP-24 for 2.4GHz is twenty end-to-end 1/2WL antennas.

1442. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:00:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1763cd$1_5@corp.newsgroups.com>
Source record: 112389

Roy Lewallen wrote:
> If by omnidirectional you mean truly the same in all directions, up,
> down, and in azimuth, the answer is no.

From the IEEE Dictionary:

"omnidirectional antenna - An antenna having an essentially non-
directional pattern in a given plane of the antenna and a directional
pattern in any orthogonal plane. Note: For ground-based antennas, the
omnidirectional plane is usually horizontal."

"isotropic radiator - a hypothetical, lossless antenna having equal
radiation intensity in all directions."
--
73, Cecil http://www.qsl.net/w5dxp

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1443. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:00:33 UTC
From: Ron <rmrippy@hotmail.com>
Message-ID: <lpJRa.247367$nr.9888633@twister.southeast.rr.com>
Source record: 112387

I agree equivalent circuits are invalid when it comes to calculating either efficiency or internal power loss. The circuit in my example was the ACTUAL circuit, i.e., a 10 volt source with a series 50 ohm resistor, not a Thevenin nor a Norton equivalent. With this restriction, I don't see anything wrong with my statement. Depending on what the ACTUAL circuit is in a power amplifier, I believe the current drawn can either increase of decrease when the load is removed.

Ron

W5DXP wrote:

> Ron wrote:
>
>> It helps me understand reflected power to think of a 50 ohm source of
>> 10 volts connected to a half wave lossless line. In this situation the
>> line can be removed from the equation and the load can be considered
>> connected directly to the 50 ohm 10 volt source. If the load R is
>> either a short or open circuit, there will be zero power transferred
>> to the load, but there will be a big difference in the power
>> dissipated in the source, two watts with the short and zero watts with
>> the open.
>
>
> Not with a Norton source. :-) Quoting _Fields_and_Waves_in_Communication_
> Electronics_, by Ramo, Whinnery, & Van Duzer, page 721: "It must be
> emphasized, as in any Thevenin equivalent circuit, that the equivalent
> circuit was derived to tell what happens in the *LOAD* under different
> load conditions, and significance cannot be automatically attached to
> a calculation of power loss in the internal impedance of the equivalent
> circuit." Seems your above assertion violates that sage admonition.

1444. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:04:19 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F1763B3.6808BA90@cwis.net>
Source record: 112388

Paul,
If you mean 'omnidirectional' in the commonly used
fassion of ham radio, then the answer is yes. If you
mean 'omnidirectional' as in an isotropic antenna, then
no. To date, and to the best of my knowledge, I have
never used an isotropic antenna, nor have I ever heard
one used. So, I guess the answer is yes...
'Doc

1445. Re: Wanted: SWAN Mobile Antenna Info

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:06:16 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F176428.DE0EA7F2@cwis.net>
Source record: 112390
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

Norm,
I remember it was called a 'Swantenna', but thats
all. Sorry 'bout that...
'Doc

1446. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:06:21 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhep1o82gnsnc4@corp.supernews.com>
Source record: 112391

So do you suppose the original poster has an IEEE dictionary?

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> If by omnidirectional you mean truly the same in all directions, up,
>> down, and in azimuth, the answer is no.
>
>
> From the IEEE Dictionary:
>
> "omnidirectional antenna - An antenna having an essentially non-
> directional pattern in a given plane of the antenna and a directional
> pattern in any orthogonal plane. Note: For ground-based antennas, the
> omnidirectional plane is usually horizontal."
>
> "isotropic radiator - a hypothetical, lossless antenna having equal
> radiation intensity in all directions."

1447. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:18:40 UTC
From: Paul@Rasdoc.com
Message-ID: <hfpehv8fd7bi01bvb34ad0ni8tjgifp3sm@4ax.com>
Source record: 112392

I was implying iostropic in 3 dimensions....

Now for a paradox.....

If RX==TX as for as antenna gain

And 100W is 100W.... then isotropic had dBi =0 be the laws of
conservation of energy.....

No suppose we have an antenna that captures all of the energy passing
though a 1M square.......

Now make that a 10M square.....

Clearly a 10M "Fishing net" can capture more than a 1M net, but

Then RXgain != TXgain

So what gives where is this wrong?

1448. Re: ATAS 120

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:27:07 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F17690B.D0DE0E9B@cwis.net>
Source record: 112393

Al,
If that 2 x 2 plate were sitting on the ground is might
be equivalent to the 'ground' furnished by a typical car
body. That's a long way from it being adequate if raised
above ground level such as in your attic. A car body, like
the 2 x 2 plate, is coupled to the 'dirt' it's on top of, and
which furnishes additional 'grounding' besides just the car's
body. A 2' x 2' metal plate laying on the ground ~may~ have
the same coupling that a car body raised 6-8" above ground
level.
(I have no idea if that's true or not, but I'm willing to go
along
with it.) But if you raise that car 10 feet off the ground, I
think the 'ground' furnished by the car's body will be quite a
bit 'less' than before you jacked it up. Same for the 2 x 2
plate. The plate should make a pretty good place to tie into
with a few radials/counterpoise'z, though. (But so would the
'pull-tab' from a Pepsi can, if you can solder to it...)
'Doc

1449. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:27:41 UTC
From: richardharrison@webtv.net
Message-ID: <6545-3F17692D-77@storefull-2316.public.lawson.webtv.net>
Source record: 112397

Ron, W4TQT wrote:
"Since the voltage and current are 90 degrees out of phase, the stored power is purely reactive but could become real diissipated power if any resistance is reconnected to the line."

Ron specified a "half wave lossless line" with complete reflection at each end.

Forward power into Ro creates a current in-phase with the voltage. Ro rigorously enforces it. An open or a short at the load end of the line creates a complete reflection in which the volts and amps are 180-degrees out-of-phase. The line again rigorously enforces it.

The only 90-degree phase angle is in the standing wave pattern.

Best regards, Richard Harrison, KB5WZI

1450. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:30:31 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F1769D7.35301282@cwis.net>
Source record: 112394

Kevin,
It would also be directional, and probably usless
at least 50% of the time on a mobile...
'Doc

1451. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:35:04 UTC
From: Raphael Clancy <rafemonkey@yah00.c0m>
Message-ID: <MPG.19810ab47589b82989681@netnews.comcast.net>
Source record: 112395

I just realized, all the hardware I need for direct saoling is already built into the PC I'll be using... the sound card has a microphone in, with a good amp, and A/D converter. though, I think I might install an isolation transformer, or at least a couple of diodes, to keep the machine from getting zapped right away.

R.

1452. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:35:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f176c12_5@corp.newsgroups.com>
Source record: 112396

Roy Lewallen wrote:
> So do you suppose the original poster has an IEEE dictionary?

If he used to have $120. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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1453. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:45:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vherakt95b14af@corp.supernews.com>
Source record: 112398

What relative gain do you think the two antennas have?

Are you still talking about isotropic antennas, or have you moved on to
accommodate other patterns?

How do you conclude that the receiving gain of your hypothetical antenna
is different from the transmitting gain?

Roy Lewallen, W7EL

Paul@Rasdoc.com wrote:
> I was implying iostropic in 3 dimensions....
>
> Now for a paradox.....
>
>
> If RX==TX as for as antenna gain
>
> And 100W is 100W.... then isotropic had dBi =0 be the laws of
> conservation of energy.....
>
>
> No suppose we have an antenna that captures all of the energy passing
> though a 1M square.......
>
> Now make that a 10M square.....
>
>
> Clearly a 10M "Fishing net" can capture more than a 1M net, but
>
> Then RXgain != TXgain
>
>
> So what gives where is this wrong?
>
>
>

1454. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:54:15 UTC
From: tdonaly@aol.com
Message-ID: <20030717235415.06235.00000101@mb-m03.aol.com>
Source record: 112399

```
>
>According to some posters, a source only puts out forward power minus
>reflected power, by definition. 103W - 3W = 100W
>--
>73, Cecil http://www.qsl.net/w5dxp
>

Which posters, Cecil?
73,
Tom Donaly, KA6RUH
```

1455. Re: Tower rates

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 03:57:54 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f17744f_4@news1.prserv.net>
Source record: 112400

Both. There was a fairly inclusive thread on this a couple of weeks ago.
Do a Google Groups search. I contributed, use tower and my handle, and june
and july.

--
Crazy George
Remove NO and SPAM from return address
"Bressler Communications" <bresslercomm@bellsouth.net> wrote in message
news:CunRa.12023$oa4.9608@fe02.atl2.webusenet.com...
> Looking for info on the going rate for tower work. (ie. light bulb
> changeouts, coax runs, etc.) Is it usually by the hour, by the foot, or
> both?
>
> Thanks
>
>
>

1456. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 04:04:30 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f177450_4@news1.prserv.net>
Source record: 112401

The "pulse" is the envelope of the RF energy. Lots of frequencies more like
white noise actually, start suddenly, trail off not quite so quickly.
Similar to a radar pulse. Two things. RF, pulse modulated.
Omnidirectionally radiated. Does that help?

--
Crazy George
Remove NO and SPAM from return address
"snarf" <snarf@hotmail.com> wrote in message
news:90FRa.5915$C71.53@fe01.atl2.webusenet.com...
> Without sounding like too much of a wise guy, please explain the single
> electromagnetic pulse generated during a nuclear or other type of large
> explosion.
>
> Does a certain degree of oscillation (ringing) occur to explain the vast
> distances travelled by what one would assume was a single large pulse?
>
> Snarf
>
>
> "Richard Harrison" <richardharrison@webtv.net> wrote in message
> news:27592-3F16E48C-64@storefull-2312.public.lawson.webtv.net...
> > Nic Santean wrote:
> > "-from "The Beginners`s Handbook of Amateur Radio" by Clay Laster, page
> > 260."
> >
> > Clay used many words to say the signal propagates too far to get back to
> > the radiator. It continues its journey away from the radiator.
> >
> > Radiation is really caused by exchange of energy between alternating
> > magnetic and electric fields. They produce each other when they
> > alternate. Static fields don`t radiate. They soon fade away.
> >
> > J.C. Maxwell speculated that displacement current produces the same
> > alternating magnetic lines as conduction current does. He was proved
> > right.
> >
> > "Static" magnetic and electric fields move out into space when current
> > flows and charge builds. When they are no longer changing, the fields at
> > some distance have reached practical limits and stop expanding.
> > Alternate these fields, and the fields can build each other and travel
> > on and on.
> >
> > Best regards, Richard Harrison, KB5 WZI

> >
>
>
>

1457. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 04:07:50 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f177451_4@news1.prserv.net>
Source record: 112402

AHA!!! Now you found your IEEE dictionary!
--
Crazy George
Remove NO and SPAM from return address
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1763cd$1_5@corp.newsgroups.com...
> Roy Lewallen wrote:
> > If by omnidirectional you mean truly the same in all directions, up,
> > down, and in azimuth, the answer is no.
>
> From the IEEE Dictionary:
<snip>

1458. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 04:16:56 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307172016.16fe8178@posting.google.com>
Source record: 112403

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<6238-3F170190-276@storefull-2315.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "What`s the definition of "surge impedance" versus regular old
> "impedance"?"
>
> Arnold B. Bailey treats this better than anybody I`ve seen. But, there
> are many treatments. The regular old impedance of an antenna depends
> upon its termination.
>
> Surge impedance of an antenna depends on its conductor`s inductance per
> unit length and capacitance per unit length. In the antenna these are
> not uniform as they are in a transmission line, and average values have
> been found useful.
>
> Best regards, Richard Harrison, KB5WZI

So that you could find the input impedance of the antenna with an
equation like the transmission line one? Zo=SRQT(L/C)? Using the
average Henries/m and Farads/m?

How do they measure a "surge impedance"?

Slick

1459. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 04:35:34 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307172035.63d4b4f8@posting.google.com>
Source record: 112404

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhds42ssu0vldc@corp.supernews.com>...
> >
> > Understood. But you have to admit that transformers and
> > transducers have some similarities. You will still have to optimize
> > the windings and magnets and size/shape of the speaker cone for
> > optimum power tranfer of a single tone. And you will have to have to
> > change the design if you decide to transmit sound underwater.
> >
>
> And transducers and automobiles have some similarities. You have to
> optimize the engine of a car for optimum acceleration, and change the
> tire tread design if you decide you want to drive on wet roads. So
> really, an antenna is like an automobile.
>

Your sarcasm doesn't make your points as well as your logic.

How about this: An antenna is a transducer, and a transformer is
made up of two transducers.

So you need two antennas to make a transformer. And stick them
close together so they couple well, just for arguments sake.

Fair enough.

> >
> >
> > I see your point, that the primary could be considered one
> > antenna, and the core material like free space, and the secondary
> > would be the receive antenna. But i suspect even a single
> > transducer/antenna can be optimized for maximum lines of flux through
> > a core at a particular frequency, or max ERP in the case of the
> > antenna. Otherwise we wouldn't have to tune these things.
> >
>
> Yep, and an automobile can be optimized for maximum acceleration. Good
> argument for considering an antenna a type of automobile, no?
>
> Y'see, if you really, really want an antenna to be a kind of automobile,
> you can cook up a bunch of reasons to convince yourself that it is. The
> same method works for astrology and fortune telling, too.
>

Shall i call this a Straw man argument? Or putting words in
someone's mouth?

Ok, an antenna is a transducer. But you can still optimize it for ERP, and that will depend on the impedance of free space or water or whatever. Why not throw out the whole concept of free space impedance if it doesn't matter?>

Slick

1460. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 04:42:10 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307172042.793926ba@posting.google.com>
Source record: 112406

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhdsbc7b5sku33@corp.supernews.com>...
> I agree that it makes some sort of sense to call radiation resistance a
> "ficticious resistor". It makes no sense to call it a "ficticious
> resistance" -- any more than you'd call the capacitance of a short
> antenna a "ficticious capacitance". It only advertises a lack of
> knowlege of the principles of basic electricity.
>
> Roy Lewallen, W7EL
>

Actually, you are correct. I mis-quoted him somewhat. He calls
the radiation resistance of an antenna as the value of a ficticious
resistor that would dissipate the same amount of power that is
radiated by said antenna.

Wouldn't want to denigrate the reputation of a cool dude...

Slick

1461. Re: SGC-235 Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 04:45:30 UTC
From: "km6ab[nospam]" <"km6ab[nospam]"@pacbell.net>
Message-ID: <3F177A1A.4060406@pacbell.net>
Source record: 112405

I looked over the insides of an SG-235 and initially thought it was capable of much higher power than the 200w rated SG-230 which I am very familiar with. Then I looked inside a Harris RF-382 series tuner rated at 500w like the SG-235. Either the Harris will handle several KW or SGC is stretching the ratings a bit.

M Wilson wrote:
> Folks,
>
> Okay, I think my decision is in... The SGC-235 tuner. Does anyone
> have experience running power into this tuner, in excess of the
> "rated" 500 watts?
>
>
> Cecil had a good idea, initial tune with low power, and then add full
> smoke later on. My operation will be SSB, peaks at 600-700 watts,
> give or take. And yes, I am willing to cap power output at around
> 600, if need be ;-)
>
> Also, what configuration are you all using? Dipole, or long wire?
>
> Thanks in advance again, and yes, Roy, here I go with the considerable
> expense... thanks!

1462. Re: Wanted: SWAN Mobile Antenna Info

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 04:58:47 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <89vehvccv4p2jksqbcinlbdduae8v2dmpp@4ax.com>
Source record: 112407

From Don Johnson's, "40+5 Years of HF Mobileering." The Swantenna came in two models, the 45 and 55. They covered from 75 to 10-meters. On the less expensive one, you had to get out of the car and adjust the coil for each band. The more expensive one had a motor that could be controlled from inside the vehicle.

The antenna in question is a Swan Deluxe 742 Tri-Band Mobile HF Antenna. It covered 3 bands automatically. Swan sold this antenna to Cubic, who sold it to Barker and Williamson. The B&W number was 370-19.

Dick - W6CCD

On Thu, 17 Jul 2003 22:06:16 -0500, 'Doc <w5lz@cwis.net> wrote:

>
>
>Norm,
> I remember it was called a 'Swantenna', but thats
>all. Sorry 'bout that...
> 'Doc

1463. Remodeling with fluorescent lights - HF noise ahead?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 05:07:43 UTC
From: cauchy128@yahoo.com
Message-ID: <de2635ad.0307172107.176e31c0@posting.google.com>
Source record: 112408

It appears our remodel in our single-family home will have a number of fluorescent light fixtures.

Does anyone out there have these in your home and experience any noise that bothers your 160-10 m operation?

Should a new installation and new bulbs produce very little noise?

I would like to hear any experiences, including any work-arounds.

Regards,
Ted, K6KIM

1464. Re: LQQKing for article

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 05:10:48 UTC
From: WavyDave <nowaynowhere@yahoo.com>
Message-ID: <bf7vm40h32@enews1.newsguy.com>
Source record: 112410

I think you mean fractal? Last time I saw someone mention that word here he was flamed to a crisp.

"NEDROG" <nedrog@aol.comNOSPAM> wrote in message news:20030716215016.27503.00001115@mb-m24.aol.com...
> Hey there - anybody still have a copy of the article - I think it was in 73 mag
> a couple of years back - reference a:
>
> 2 element FRACTUAL 10 M QUAD?
>
> 73's
>
> Howard W3CQH

1465. 2 meter tv twin (300ohm) J pole question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 05:12:51 UTC
From: WavyDave <nowaynowhere@yahoo.com>
Message-ID: <bf7vq00h81@enews1.newsguy.com>
Source record: 112411

Would this antenna accept 30 watts without melting? How does one go about figuring that sort of thing anyway?
Thanks

1466. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 05:31:36 UTC
From: Dick Carroll <dickc58@att.net>
Message-ID: <3F1776A9.59934323@att.net>
Source record: 112409

"Dr. Slick" wrote:

> richardharrison@webtv.net (Richard Harrison) wrote in message
news:<7827-3F167EC4-147@storefull-2311.public.lawson.webtv.net>...
> > Ian, G3SEK wrote:
> > "Examples include a loudspeaker---."
> >
> > Good transducer example. Its problem is abysmal efficiency, even if
> > better than the usual incandescent lamp.
> >
> > The loudspeaker`s efficiency can be improved by a better match to its
> > medium. The usual loudspeaker is small in terms of wavelength. A result
> > is that it is capable of exerting much force on a small area of a very
> > compliant medium, air. Air could better accept power exerted over a much
> > larger area, especially at low frequencies, with less force required to
> > make the air move..
> >
> > We have a high-Z source and a low-Z sink in the loudspeaker and air.
> > Conversion from electric power to mechanical power can be more efficient
> > through better impedance matching. Two solutions are often used for a
> > better match, a larger loudspeaker or a horn between the loudspeaker and
> > its air load. The larger speaker is directly a better match. The horn is
> > an acoustic transformer. They both improve energy conversion efficiency.
> >
>
> But a speaker is designed for broadbanded operation, 20-22kHz, not
> just one frequency like many antennas.
>
> I'm sure a speaker optimized for one frequency alone will be much
> different than a broadband one.
>

You can be just as sure that the speaker presents its rated impedance only
at one frequency, too.

1467. Re: SGC-235 Tuner

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 05:59:27 UTC
From: Bruce in Alaska <bruceg@btpost.net>
Message-ID: <bruceg-E4C92A.21584817072003@netnews.worldnet.att.net>
Source record: 112412

In article <3F177A1A.4060406@pacbell.net>,
"km6ab[nospam]" <"km6ab[nospam]"@pacbell.net> wrote:

> I looked over the insides of an SG-235 and initially thought it was
> capable of much higher power than the 200w rated SG-230 which I am very
> familiar with. Then I looked inside a Harris RF-382 series tuner rated
> at 500w like the SG-235. Either the Harris will handle several KW or SGC
> is stretching the ratings a bit.
>
> M Wilson wrote:
> > Folks,
> >
> > Okay, I think my decision is in... The SGC-235 tuner. Does anyone
> > have experience running power into this tuner, in excess of the
> > "rated" 500 watts?
> >
> >
> > Cecil had a good idea, initial tune with low power, and then add full
> > smoke later on. My operation will be SSB, peaks at 600-700 watts,
> > give or take. And yes, I am willing to cap power output at around
> > 600, if need be ;-)
> >
> > Also, what configuration are you all using? Dipole, or long wire?
> >
> > Thanks in advance again, and yes, Roy, here I go with the considerable
> > expense... thanks!
>

SGC tuners are rated a bit over what they can handle with nearly
perfect antennas and grounds. If you push the envelope, count on
burning up relay contacts, and capacitors. I speak from years of
experience with their products in the commercial markets.

Bruce in Alaska

1468. Re: 2 meter tv twin (300ohm) J pole question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 06:03:43 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F178DBF.EDE006C2@cwis.net>
Source record: 112413

WavyDave wrote:
>
> Would this antenna accept 30 watts without melting? How does one go about
> figuring that sort of thing anyway?
> Thanks

I would think it would handle 30 watts with no problem. I
don't
know of any way of telling about how much power any particular
antenna can handle except by experience.
'Doc

1469. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 06:07:10 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F178E8E.D90893A9@cwis.net>
Source record: 112414

Paul,
Never happen unless the isotropic antenna is
made with red wire...
'Doc

1470. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 06:19:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhf4blim59e3b1@corp.supernews.com>
Source record: 112415

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhds42ssu0vldc@corp.supernews.com>...

. . .

>>>
>>> I see your point, that the primary could be considered one
>>>antenna, and the core material like free space, and the secondary
>>>would be the receive antenna. But i suspect even a single
>>>transducer/antenna can be optimized for maximum lines of flux through
>>>a core at a particular frequency, or max ERP in the case of the
>>>antenna. Otherwise we wouldn't have to tune these things.
>>>
>>
>>Yep, and an automobile can be optimized for maximum acceleration. Good
>>argument for considering an antenna a type of automobile, no?
>>
>>Y'see, if you really, really want an antenna to be a kind of automobile,
>>you can cook up a bunch of reasons to convince yourself that it is. The
>>same method works for astrology and fortune telling, too.
>>
>
>
> Shall i call this a Straw man argument? Or putting words in
> someone's mouth?

Feel free to call it what you want. I believe I've made as valid an
argument for an antenna being an automobile as you did for it being a
transformer, and based on the same criteria.

> Ok, an antenna is a transducer. But you can still optimize it for
> ERP, and that will depend on the impedance of free space or water or
> whatever. Why not throw out the whole concept of free space impedance
> if it doesn't matter?

The optimization of an antenna depends on many factors, only one of
which is the nature of the medium in which it's immersed. And among the
medium's important properties are its permeability, permittivity, and
the velocity of a wave propagating in it. The phase velocity and
characteristic impedance can both be calculated from the permeability
and permittivity, so you can't really say any one of these is more
important than the other.

It doesn't make any sense to throw out the concept of free space
impedance just because it confuses people who don't know what it means.

It's an extremely useful and well-understood concept. For example, reflection of a wave from a plane conductor or the ground can easily be found by calculating a reflection coefficient based on the impedance of the reflecting surface and the impedance of the impinging wave. (The impedance of a wave can be quite different close to an antenna than it is after it's traveled some distance.) If you look in some of those texts I recommended, you'll find the impedance of free space cropping up all over the place.

What needs to be thrown away is the belief that all impedances are the ratio of a voltage to a current, along with the notion that only resistors can have resistance.

Roy Lewallen, W7EL

1471. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 07:20:54 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <CS1arCHW$5F$EAsa@ifwtech.co.uk>
Source record: 112322

William E. Sabin wrote:
>This explanation accounts for everything that is going on at the node.
>The answer to the question "where does the reflected power go?" is the
>following: "It is a nonsense question that has caused nothing but
>misery".

Well said, Bill !

Every time that question is asked, this newsgroup goes into the same major convulsions. The same people produce the same arguments... and after a period of weeks to months, all the threads (they always multiply) grind to a halt from sheer exhaustion.

Nobody wins (though the last man left standing may think he has) because nobody has managed to convince anybody else to change his mind.

The innocent person who first asked the question has usually bailed out after the first three days. He just can't follow all the twists, turns and mistakes on both sides... but neither can anybody else, if truth be told.

Whenever someone asks that question, this newsgroup behaves like mice in a maze. We take different twists and turns each time, but overall, we always react the same. The perfect experiment!

Very few people seem to realise that the fault lies in the question itself. Any question that contains a built-in misconception can have *no* correct answer - except, "Sorry, that's not a valid question;" to which one might helpfully add, "What did you really mean to ask about?"

"Where does the reflected power go?" is even worse because it contains at least two built-in misconceptions: that reflected power waves exist, and that they have to "go" somewhere.

That question has *no* correct answer - and this newsgroup is living proof that none can be found.

(Douglas Adams' white mice must be absolutely delighted.... you know, the ones who are actually in charge of all this, running the whole planet Earth as a behavioral experiment. "Where does the reflected power go?" is their master stroke.)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1472. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 07:28:44 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <JyLYDJIsG6F$EA+u@ifwtech.co.uk>
Source record: 112323

Steve wrote:
>All I need now is the plans for the antenna but I should have those
>soon.

In about as long as it takes to go to the 'VHF/UHF Long Yagi Workshop'
on the site below. Some other questions will be answered there too.

Certainly a shorter sub-boom centred on the balance point is one good
way to go. Another is to use quarter-inch larger square tube for the
middle section, with the inch-square boom running right through, and
hard aluminium shims driven into the end. Don't forget to use a larger
boom correction for that centre section.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1473. Re: ATAS 120

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 07:46:15 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <v39fhvse4g43junl9006t1rdge0kiugt5b@4ax.com>
Source record: 112450

On 17 Jul 2003 18:54:51 GMT, alcca@aol.com (ALCCA) wrote:

>Rich and Bob thanks for the suggestions. I don't have a balcony that is wht I
>have been struggling with a good set up. The ground plate is rather large 2
>feet X 2 feet and it is a 1/4 inch thick and according to MFJ provides the
>equivalent ground of a car. I think using an extension probably is a bad idea
>since the ATAS requires to be in direct contact with the ground. I am now
>thinking of mounting the ATAS directly to the ground plate and if I need to add
>some radials. What do you guys think.
>Al Casanova
>KE4MNF

I'd try one or the other. Attach a single 1/4 wave counterpoise wire
to the ground side of your antenna, and compare that to what happens
with the plate, by itself. In the past, in an apartment, I used a
short vertical with a loading coil, and tuned it by adjusting a single
counterpoise wire to 1/4-wavelength for the band being used. Worked
pretty good with 100 watts, tho' the wire was hot with rf :-)

Bob
k5qwg

1474. Re: Amendment to previous message -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 08:10:33 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <ViOfXUL5t6F$EAcs@ifwtech.co.uk>
Source record: 112324

Reg Edwards wrote:
>I referred to Terman as "him".
>
>It should, of course, have been "HIM". ;o)

Not really - "Him" will do nicely. Just spell his surname in capitals
:-)

Seriously, people like Terman, Kraus and Jasik do deserve our respect,
for developing textbooks that have become 'standards'. Over several
editions they have been subject to searching examination from thousands
of teachers and students, so there aren't many errors left in there.

That's the valid reason for using those names as touchstones. To
contradict one of those standard texts, you'd better have some good
arguments prepared.

- BUT -

Never quote a textbook as a substitute for doing your own thinking. That
is the ultimate disrespect to the original authors.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1475. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 09:16:01 UTC
From: Bob <bcnntp@optusnet.com.au>
Message-ID: <hsd8fb-t9.ln@p400bob.lse.com.au>
Source record: 112417

Hi Raphael

I doubt you'll see much on a multimeter by itself. Most measuring devices like that would have a hard time measuring AC past 20kHZ!

I think it was the Parkes radio telescope site (you know the movie "The Dish") that has a list of freqs used for radio astronomy. Be a handy place to start as you'd be able to avoid "human" band users. Sorry dont know the URL. It has "csiro" in it somewhere. I'm going to be driving past Parkes in a month or so. Might go have another look...

One of the nice things about magloops is their very narrow bandwidth. You may even be able to get away with a simple diode and capacitor detector. Kind of like an AM receiver (aka crystal set) but with a longer time constant so the DC voltage can be measured. You'll need an amplifier somewhere. I saw a magloop article with a built in preamp, cant remember where. If you are using a soundcard note that it will be AC coupled. ie wont be able to measure slow moving DC voltages. Back to an A-D converter or make up a voltage controlled oscillator feeding from the detector! (Noted the comment in the your other post. The sound card sampling rate isnt going to be so good for direct data capture. Hence my suggestion of the VCO)

Remember that a magloop bandwidth will be a percentage thing so if you go to high in frequency it may become too broad. Maybe the thing to do might be to build one on the Jove freq (abt 21.5MHz). Also protect the magloop tuning from the weather. Rain/changes in humidy will affect it and your measurements will change.

You might find it cheaper to build an A/D plugged into the parallel port. You could even write a 4 line DOS debug/bat script to read the port and dump the value to a file. Simple.. Only issue would be only 8 bits. From memory the port has 3-4 more control lines that could also be used for more. (Or get another printer interface card) I use to use a parallel port to drive a stepper motor and ez-al antenna for satellite tracking using the debug script method. Remember that the data acquisition speed deosnt need to be fast. (ie more $$$)

Okay good luck!

Cheers Bob

> Hi Bob,
>
> my plan was to go with the fixed antenna, and let the motion of the
> earth sweep out a path in the sky.
>

> I'm still trying to figure out the frequency, and from that the size. I
> was looking at RadioJove (http://radiojove.gsfc.nasa.gov/) and they use
> a 7.09m simple dipole antenna to listen to radio storms from Jupiter. I
> think, at least for my first experiments, I might try something in this
> range. Eventually it would be nice to listen at 1420mhz, but from what
> I've read simple dipoles aren't too good for high frequency signals. I
> also checked out Mag-loop antennas, and they look pretty interesting. I
> wish I could be more specific about my antenna plans, but my radio
> experience wouldn't fill a 3x5 card. I think I'll start with a small
> simple dipole, and just hook that up to my multi-meter to see what comes
> over the line. but after that I think I might try a mag-loop, this place
> (http://www.iri.tudelft.nl/~geurink/magnloop.htm) has a pretty good
> howto. But, I need to do a bit of spectrum research, and see where I'm
> most likely to find "natural" signals.
>
> I'm planning on direct sampling. Since this project is all happening
> under my wife's watchful eye, my funds are limited. If I can get my
> hands on a cheap, low noise RF amplifier I'll go that way, otherwise, I
> have a cookbook with some schematics I can copy. As far as the A/D
> converter I was going to build something along these lines:
> http://dbserv.maxim-ic.com/appnotes.cfm?appnote_number=151
>
> thanks for all the info!

1476. Re: 2 meter tv twin (300ohm) J pole question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 09:30:16 UTC
From: Chuck / KE4ETH <chuck_hawks@hotmail.com>
Message-ID: <ufNRa.14073$r35.637@fe03.atl2.webusenet.com>
Source record: 112416

For what it's worth, My 2 meter J-Pole is up about 30 feet and encased in a PVC pipe. It handles 50 watts (nominal) with no problems for the last 10 years.

YMMV

Chuck
"WavyDave" <nowaynowhere@yahoo.com> wrote in message
news:bf7vq00h81@enews1.newsguy.com...
> Would this antenna accept 30 watts without melting? How does one go about
> figuring that sort of thing anyway?
> Thanks
>
>

1477. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 10:10:48 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0307180210.31ce8910@posting.google.com>
Source record: 112418
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

dplatt@radagast.org (Dave Platt) wrote in message
news:<vhec01ap09s22f@corp.supernews.com>...
> In article <bf7a5rnkd1@slb6.atl.mindspring.net>,
> Dan/W4NTI <w4nti@NOSPAMmindspring.com> wrote:
>
> >There will be a big market is 'serious' amplifiers. BPL will be knocked for
> >a loop so often it will be rendered useless.
>
> Wouldn't surprise me. The FCC requires the use of the least amount of
> power needed to establish a given mode of communication. If BPM fills
> the whole HF spectrum with S9-level fog, then QRP will go out the
> door, and maximum-legal power will become technically necessary to
> "burn through".
>
> I'd hate that. So would our neighbors. Expect a big increase in
> TVI/RFI complaints.
>
> Similar things might happen with other licensed HF services... they
> may also have to crank up their power.

Output suds don't mean squat. "Ya can't work 'em if ya can't hear
'em." Wherein lies the whole problem.

w3rv

1478. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 10:18:51 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <fQPRa.89475$H17.27894@sccrnsc02>
Source record: 112319
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Dan/W4NTI wrote:
>
> There will be a big market is 'serious' amplifiers. BPL will be knocked for
> a loop so often it will be rendered useless.
>
> Not to mention the court cases that I HOPE will follow. We are the LICENSED
> service.
>
> Dan/W4NTI
>
>
There's a much easier solution!! Have the FCC propose a rule that
communication receivers cannot have receivers with sensitivity lower
than 50 microvolts!

If 60 dB noise levels are real an amplifier won't help me hear the weak
ones! So, simply eliminate the ability to hear the weak ones and we will
all be happy, NO? It's much easier to install a 60 dB pad on a receiver
than pushing amplifiers and Long John Yagis. Hmmm ... ;-)

Deacon Dave, W1MCE

1479. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 11:32:52 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <EVQRa.88227$N7.11599@sccrnsc03>
Source record: 112320

Cecil, is that not a driven collinear array?

Deacon Dave, W1MCE

W5DXP wrote:

> Roy Lewallen wrote:
>
>> W5DXP wrote:
>>
>>> In which case, it is a phased vertical array, not a dipole. With
>>> a spacing of 1/8WL, one can get 4 dB gain that way.
>>
>>
>> In your dreams.
>
>
> I'm dreaming of The ARRL Antenna Book, 15th edition, page 8-6. Spacing
> 1/8WL,
> phasing=135 deg, Gain = 4.1 dB. Remember, this is for two 10m verticals
> mounted
> in line with the vehicle, not one on each side of the vehicle. It is
> essentially
> a two element vertical beam with a cardioid radiation pattern and a large
> front/back ratio.

1480. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 11:50:07 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307180350.4f3836f6@posting.google.com>
Source record: 112321

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bf6v90$3o7$1@titan.btinternet.com>...
...
> ====================================
> Tom, To add a bit more -
>
> 50-ohm generators as used in laboratories (so that measured reflexion loss,
> mismatch loss etc, mean something) are effectively constant voltage
> generators in series with a 50-ohms resistor, or constant current generators
> in shunt with a 50-ohm resistor. They may be followed by an ampifier whose
> output impedance is held constant at 50-ohms by some automatic means. None
> of these circuits bear much resemblance to a pair of 807's and a tuned tank.
>
> The best that can be said about Rg of the usual HF radio transmitter is that
> Rg is indeterminate. IT EVEN VARIES AS THE LOAD IMPEDANCE IS CHANGED which
> most of the Guru's contributing to this newsgroup appear to be unaware of or
> at least choose to disregard. So what does "adjusting RL to equal Rg" mean?
> To use it in a description of feeder + antenna behaviour further propagates
> myths, including those surrounding SWR, forward power, reflected power, SWR
> meters, etc.
>
> Does Terman ever bother to mention Rg of a Tx PA? If he doesn't it can't
> matter very much to him. The ARRL handbook, when numerically designing a
> transistor linear HF PA, makes no mention of Rg.

Amen, brother. I was thinking after making my last posting to this
thread that the one thing I DON'T bother thinking about when designing
a PA is what source impedance it will present. I worry about
currents, voltages, efficiency, distortion, a network to present the
proper load to the active device(s)... but not Rg.

In precision instrumentation systems, the output is commonly levelled
or monitored through a levelling splitter (not to be confused with a
power divider), so that a virtual zero-impedance point can be
established, with a 50-ohm (or other Zo) resistor from that point to
each output. And network analyzers are commonly calibrated with
precision loads so that the imperfections in their outputs and
reflectometers and cabling can be backed out by the calibration
software.

Cheers,
Tom

1481. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 12:13:24 UTC
From: --Bill-- <exray.is.tired@of.spam>
Message-ID: <vhfovkkbqigmcb@corp.supernews.com>
Source record: 112325
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Dave Shrader wrote:
>
>
> Dan/W4NTI wrote:
>
>>
>> There will be a big market is 'serious' amplifiers. BPL will be
>> knocked for
>> a loop so often it will be rendered useless.
>>
>> Not to mention the court cases that I HOPE will follow. We are the
>> LICENSED
>> service.
>>
>> Dan/W4NTI
>>
>>
> There's a much easier solution!! Have the FCC propose a rule that
> communication receivers cannot have receivers with sensitivity lower
> than 50 microvolts!
>
> If 60 dB noise levels are real an amplifier won't help me hear the weak
> ones! So, simply eliminate the ability to hear the weak ones and we will
> all be happy, NO? It's much easier to install a 60 dB pad on a receiver
> than pushing amplifiers and Long John Yagis. Hmmm ... ;-)
>
> Deacon Dave, W1MCE
>
Shoot, propose simultaneously that hams be allowed 50 kilowatts output.
Not that either of these are remedies for the potential problem but
maybe it will help the FCC understand whats going on.
-Bill

1482. Quagi 70cm design

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 12:37:36 UTC
From: Roberto <pippu@excite.com>
Message-ID: <kSRRa.185359$Ny5.5223011@twister2.libero.it>
Source record: 112326
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

Hi, I re-designed a 8 el. Quagy for 70cm because I had problems with the original design. I thought it might interest to someone so I put it on www.qsl.net/ik1hge/homebrew/homebrew.html
It seems that the antenna works fine (gain looks outstanding for such a small antenna, but I can't measure it accurately), however I'd like to get some feedbacks from someone else. It's very easy to build.

Thanks
Bye
Roberto

1483. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 12:41:21 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f17ea5d@shknews01>
Source record: 112329

I thought that only light (and not radio waves) has a dual nature.
Are U sure that photons play a role in radio waves radiation ??
U sure?

Nic.

> The RF energy from the source accelerates and decelerates free electrons.
> The changing energy levels of the free electrons causes the excess energy
> to be radiated as coherent photons.

1484. Re: Remodeling with fluorescent lights - HF noise ahead?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 12:43:17 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <FXRRa.973$IL.112722@nnrp1.ptd.net>
Source record: 112327

"John Brown" <cauchy128@yahoo.com> wrote in message
news:de2635ad.0307172107.176e31c0@posting.google.com...
> It appears our remodel in our single-family home will have a number of
> fluorescent light fixtures.
>
> Does anyone out there have these in your home and experience any noise
> that bothers your 160-10 m operation?
>
> Should a new installation and new bulbs produce very little noise?
>
> I would like to hear any experiences, including any work-arounds.
>
> Regards,
> Ted, K6KIM

I guess it may depend to some extent on the quality and type of
fixtures/bulbs
that you install.

My shack is in a finished "walk-out" basement (the house is dug into
the slope at the top of the hill, such that from the front it appears to
be a 1-story structure, but from the back side, it's 2-story).

The entire basement area, ham shack, electronics lab, office, family room,
woodshop, etc. is VERY well illuminated by an array of fixtures set in the
grid of a suspended ceiling. Area is about 2000 sq. ft. and there are 14
4 ft., 4-tube fixtures.

I have checked and I can't see a noticable change in RX noise in the HF
bands between all lights off and all lights on.

If you get a tube that's starting to go, or a bad ballast, that could cause
a dramatic change ... something that bodes in favor of replacing bad
tubes.

(Of course, my antennas are outside, away from the lighting, and the
house is covered with aluminum siding for low maintenance, which
may help to contain any noise from the lighting ... YMMV, depending
on such shielding, antenna placement relative to the lighting, etc.)

73,
Carl - wk3c

1485. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 12:47:42 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f17ebcd@shknews01>
Source record: 112330

> If by omnidirectional you mean truly the same in all directions, up,
> down, and in azimuth, the answer is no.

I agree. The gain measures the "performance difference"
between a directional antenna and an isotropic one. Since
the isotropic antenna is a reference point, the gain can
not be more than zero. You can experience loss though,
by badly designing your omnidirectional antenna.

Nic.

1486. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 12:54:50 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <NvacneKZ8oa8c4qiU-KYvA@comcast.com>
Source record: 112328

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vhdsrm3lt0he07@corp.supernews.com...
> Most simple derivations for the input impedance of a dipole assume it's
> infinitely thin.

That is why I used #30 wire

The general problem of a dipole made from wire of
> finite diameter is a lot tougher, and is the topic of the papers by the
> authors I listed in another recent posting. With EZNEC, you'll find that
> the dipole impedance will continue to change as you make the wire
> diameter smaller and smaller, until it gets too small for the program to
> handle at all.

When I switched to #14, the impedance did not change more than a few tenths
of an Ohm. However, resonance went down about 10 KHz.

BTW, when I took my first Junior level EE Fields & Waves course I asked my
prof about the same question that Slick brought up. Was convinced that 300
Ohm TV antennas were really 377 Ohms!

Tam/WB2TT

1487. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 13:03:38 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <xv-dne2J1e1yalqiU-KYvw@comcast.com>
Source record: 112332

Any transducer I can think of offhand converts between mechanical energy and electrical energy, as for instance a loudspeaker, microphone, mechanical filter, etc.

As for the impedance of free space, one way to build a stealth aircraft is to cover it with material that has a resistivity of 377 Ohms/square. Then there is no reflection

Tam/WB2TT

1488. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 13:28:07 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <xv-dneyJ1e1taIqiU-KYvw@comcast.com>
Source record: 112331

"Dilon Earl" <dilon_earl@mail.com> wrote in message
news:3f16d49f.103931205@news.easynews.com...
> On Thu, 17 Jul 2003 09:06:32 -0500, "William E. Sabin"
> <sabinw@mwci-news> wrote:
> If I have a 100 watt transmitter and my wattmeter shows 3 watts
> reflected. Is 3 watts actually being dissipated in the tank and final
> PA?
>
That would depend on the output impedance of the transmitter. If it is 50
Ohms, all the reflected power would be absorbed by the transmitter. If it is
0 Ohms or its Norton equivalent, it is all reflected, and none is
dissipated.

Tam/WB2TT

1489. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 13:47:32 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <2nWdnfGGY7bnZ4qiXTWJhw@comcast.com>
Source record: 112333

This whole discussion points out the fallacy of trying to understand
reflections by sending a CW signal. Consider a 100W pulse radar transmitter.
Also, assume the transmitter rurns off between pulses (a good assumption),
and that the antenna mismatch causes 3% of the power to be reflected.

When the pulse reaches the antenna, 97W is transmitted, and 3W is returned.
All of this 3 W is reflected by the transmitter, and a second pulse is
produced where 2.91W is radiated and .09 W is reflected back. This is
re-reflected, and a third pulse is produced where .0873 W is radiated and
.0027 W is reflected, etc, etc.

Tam/WB2TT
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f17619f_5@corp.newsgroups.com...
> William E. Sabin wrote:
> > Keeping everything simple and not getting into peripheral issues is
> > desirable at this point.
>
> The assumption that the source is outputting (forward power
> minus reflected power) is essentially saying that all amplifiers
> are perfectly matched and re-reflect all reflected power.
> That seems like a stretch to me.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1490. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 13:57:56 UTC
From: snarf <snarf@hotmail.com>
Message-ID: <dUSRa.11$mo4.3@fe01.atl2.webusenet.com>
Source record: 112334

Yes, it does help. It helps to disprove that one wave does not push the preceding wave along. Each is an independent event which does not interact with other waves from the same source until a boundary or other interface is encountered, resulting in interference patterns. Then they will affect each other, both positively and negatively, regarding amplitude.

Snarf

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message news:3f177450_4@news1.prserv.net...
> The "pulse" is the envelope of the RF energy. Lots of frequencies more like
> white noise actually, start suddenly, trail off not quite so quickly.
> Similar to a radar pulse. Two things. RF, pulse modulated.
> Omnidirectionally radiated. Does that help?
>
> --
> Crazy George
> Remove NO and SPAM from return address
> "snarf" <snarf@hotmail.com> wrote in message
> news:90FRa.5915$C71.53@fe01.atl2.webusenet.com...
> > Without sounding like too much of a wise guy, please explain the single
> > electromagnetic pulse generated during a nuclear or other type of large
> > explosion.
> >
> > Does a certain degree of oscillation (ringing) occur to explain the vast
> > distances travelled by what one would assume was a single large pulse?
> >
> > Snarf
> >
> >
> > "Richard Harrison" <richardharrison@webtv.net> wrote in message
> > news:27592-3F16E48C-64@storefull-2312.public.lawson.webtv.net...
> > > Nic Santean wrote:
> > > "-from "The Beginners`s Handbook of Amateur Radio" by Clay Laster, page
> > > 260."
> > >
> > > Clay used many words to say the signal propagates too far to get back to
> > > the radiator. It continues its journey away from the radiator.
> > >
> > > Radiation is really caused by exchange of energy between alternating
> > > magnetic and electric fields. They produce each other when they
> > > alternate. Static fields don`t radiate. They soon fade away.

> > >
> > > J.C. Maxwell speculated that displacement current produces the same
> > > alternating magnetic lines as conduction current does. He was proved
> > > right.
> > >
> > > "Static" magnetic and electric fields move out into space when current
> > > flows and charge builds. When they are no longer changing, the fields
at
> > > some distance have reached practical limits and stop expanding.
> > > Alternate these fields, and the fields can build each other and travel
> > > on and on.
> > >
> > > Best regards, Richard Harrison, KB5 WZI
> > >
> >
> >
> >
>
>

1491. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 13:59:03 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <unednS2pfeKwYIqiU-KYgg@comcast.com>
Source record: 112335

Steve,

Here is something else you might want to do. I did this to a KLM50-7 which has a boom a bit less than 7 meters long. Took 2 pieces of 3/8 inch Al tubing, about 5 feet long, and flattened both ends in a vise, then bent at 45 degrees. Drilled holes in the flattened portion, and bolted one end of each to the boom, the other end to the mast through one hole, and a long bolt, about 3 mm. Makes the boom absolutely stable in a wind.

Tam/WB2TT

1492. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 14:08:14 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F17FF4E.301@mwci-news>
Source record: 112336

Tarmo Tammaru wrote:
> This whole discussion points out the fallacy of trying to understand
> reflections by sending a CW signal.

There is nothing wrong with considering the
steady-state solution. We do that all the time.
The steady-state is achieved mathematically by
considering an infinite sum of forward and
reflected waves (for a CW signal) until it
converges to a steady state. In the final solution
the source impedance is found to have no effect on
the standing wave pattern (the SWR).

Reference: W.C. Johnson "Transmission Lines and
Networks", McGraw-Hill 1950, chapter 4, Equation 4.23.

In the steady state the final result is according
to my discussion.

Bill W0IYH

1493. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 14:18:05 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <xkTRa.89612$ye4.65057@sccrnsc01>
Source record: 112337

Among the numerous effects of a nuclear explosion in the atmosphere are X-rays and Gamma Rays. These are photons of two greatly different wavelengths. These photons interact with the atmosphere in a very complex manner depending on the frequency of the photons. Narratively, these can be thought of in the following way.

The atmosphere absorbs the photons. The energy in the photons causes ionization of the air molecules, primarily Nitrogen and Oxygen. The ionization strips the electrons off of these molecules. This leaves the nucleus positively charged and creates an electron shower that blasts away from the nucleus.

So, the electrons, being much lighter than the nucleus, move further away from the nucleus causing a electromagnetic wave. There is a time varying electric field between the nucleus and the electrons: and, the motion of the electrons creates a simultaneous time varying magnetic field. The electrons 'curve' back to the nucleus to recombine and produce no net charge in the time period of 10s of microseconds after the nuclear event.

Now, the X-rays are absorbed by the atmosphere over the distance of several meters from the blast source. While the Gamma rays are absorbed over the distance of several kilometers. X-rays and Gamma rays travel at the speed of light so the resulting waveform of the EM field has a very fast rise time from the X-rays, a longer rise time for the Gamma rays and a slower fall time from the Gamma rays.

The EM Pulse has a very fast rise time, typically less than 10 nanoseconds [10 MHz], and a longer fall time typically 10s of microseconds [< 1 MHz]. A Fourier analysis of the frequency components shows the EM energy ranges from 100 KHz to in excess of 200 MHz.

So, the resulting EM wave then can propagate in accordance with the characteristics of the Low Frequency, Medium Frequency, High Frequency and Very High Frequency propagation characteristics in effect when the explosion occurs.

Unclassified data indicates the EMP Pulse has field intensities in excess of 25,000 volts per meter in the HF portion of the spectrum! [Hmmm ... a ten meter dipole antenna could be in an EM field in excess of 125,000 volts!! WOW! Talk about ESD susceptibility with the new IC 746 Pro. Not much would survive this unless specifically designed to do so.]

This is a far as I'll go with the explanation.

Deacon Dave, W1MCE

PS: The Rev. Deacon spent many years designing equipment to MIL Specs
including nuclear effects.

[SNIP]
> Snarf wrote:
> "Without sounding like too much of a wise guy, please explain the single
> pulse generated during the single electromagnetic pulse generated during
> a nuclear or other type of large explosion."
>
[SNIP]

1494. Re: 2 meter tv twin (300ohm) J pole question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 14:21:52 UTC
From: gmz79@aol.comnospam
Message-ID: <20030718102152.06855.00000150@mb-m06.aol.com>
Source record: 112339

>Would this antenna accept 30 watts without melting? How does one go about
>figuring that sort of thing anyway?
>Thanks
>

I've run 75watts on high duty cycle,(net control,announcements,ect)
and 130w for short periods. (rg-8x feed)
I run 50w on my Rg-174 models with no problems.
YMMV
KC*VIF
Greg Z
to thine own sound be true

1495. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 14:34:46 UTC
From: K7JEB <k7jeb@arrl.no_spam.net>
Message-ID: <aATRa.61581$3o3.4043261@bgtnsc05-news.ops.worldnet.att.net>
Source record: 112341

Paul@Rasdoc wrote:

> I was implying iostropic in 3 dimensions....
> Now for a paradox.....
> If RX==TX as for as antenna gain
> And 100W is 100W.... then isotropic had dBi =0 be the laws of
> conservation of energy.....
> No suppose we have an antenna that captures all of the energy passing
> though a 1M square.......
> Now make that a 10M square.....
> Clearly a 10M "Fishing net" can capture more than a 1M net, but
> Then RXgain != TXgain
> So what gives where is this wrong?

The only application that I have seen in which this was true
was the so-called Rectenna - an array of low-gain dipoles,
each of which had a diode detector at its feedpoint terminals.
The direct-current diode outputs were summed to produce the
"signal" which was more-or-less proportional to the area of
the array. But the array itself had very low directivity -
pretty much that of a single dipole element - making it
unnecessary to beam-steer it.

This was proposed as the Earthside end of a space-based power
satellite system that would convert sunlight in geosynchronous
orbit to microwave energy and beam it down to the rectenna. There
it would be "detected" to DC which would then be converted to
60-Hertz HV sine waves for injection into the power grid.

The thing that makes this work was, of course, the non-linear,
non-coherent rectification process at each array element. And
it only works for DC. If a higher-bandwidth modulation is
imposed on the RF energy, a point is reached due to travel-time
delay where the detected signal at one end of the array is out
of phase with that detected at the opposite end. If synchronous
detection is attempted, the highly undesireable array directivity
is immediately restored - much to the chagrin of the system designers.

--
Jim Bromley, K7JEB k7jeb(at)arrl(dot)net
Glendale, Arizona

1496. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 15:23:30 UTC
From: Andy Cowley <andy.cowley@uwe.ac.uk>
Message-ID: <3F181150.11048758@uwe.ac.uk>
Source record: 112345

Tarmo Tammaru wrote:
>
> Any transducer I can think of offhand converts between mechanical energy and
> electrical energy, as for instance a loudspeaker, microphone, mechanical
> filter, etc.
>
> As for the impedance of free space, one way to build a stealth aircraft is
> to cover it with material that has a resistivity of 377 Ohms/square. Then
> there is no reflection
>
> Tam/WB2TT

Ssh. You aren't allowed to export ideas like that.

;-)

vy 73

Andy, M3ABC

1497. Re: Attaching wire to tubing??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 15:33:35 UTC
From: Andy Cowley <andy.cowley@uwe.ac.uk>
Message-ID: <3F1813AD.CE6C9FD5@uwe.ac.uk>
Source record: 112348

Dave Platt wrote:
>
> In article <Hx4Oa.10419$Hw.7535985@news2.news.adelphia.net>,
> kf4tun <kf4tun@adelphia.net> wrote:
>
> >Where does one buy aluminum solder?
>
> See http://www.rcfaq.com/answers/engines/solderalum.htm for some
> suggestions. It's definitely available.
>
> I've even heard people report that they've been able to solder
> reliably to aluminum using a combination of ordinary 64/40 solder,
> activated rosin flux, and a bit of trickery involving a dentist's
> pick. The trick is this: flux the joint well, heat thoroughly, apply
> some solder (it'll bead up and won't stick). Then, take the dentist's
> pick, and while continuing to heat the solder and junction, scrape the
> pick _through_ the bead of molten solder and scratch the surface of
> the aluminum underneath (naturally, the pick has to be hot enough that
> it doesn't cause the solder to congeal).
>
> The scratching action breaks up the layer of oxide on the surface of
> the aluminum. If the molten solder is lying right on the metal, it
> (and the remnants of the flux) will exclude oxygen long enough to
> allow the solder to fuse with the aluminum.
>

Tin a file and use that to do the scratching. Works for bigger
stuff. Makes a better contact. Seal the joint from the weather
or you may get bad electrolytic corrosion at the joint.

vy 73

Andy, M3ABC

1498. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 15:36:53 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tr4ghvgdq1qc8gh4u1meerc2d54udtugda@4ax.com>
Source record: 112346

On Fri, 18 Jul 2003 09:03:38 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>Any transducer I can think of offhand converts between mechanical energy and
>electrical energy, as for instance a loudspeaker, microphone, mechanical
>filter, etc.

That seems to be ignored to complement its use as analogy.

>
>As for the impedance of free space, one way to build a stealth aircraft is
>to cover it with material that has a resistivity of 377 Ohms/square. Then
>there is no reflection
>
>Tam/WB2TT
>

Hi Tam,

That material has been around for a couple of decades, but is quite
heavy. You might find yourself with a fleet of stealth bumper cars as
a result.

73's
Richard Clark, KB7QHC

1499. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 15:46:20 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u05ghv4nc40k1t3oscks6d29e7cbdu26mf@4ax.com>
Source record: 112350

On Fri, 18 Jul 2003 09:51:35 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Dick Carroll wrote:
>> You can be just as sure that the speaker presents its rated impedance only
>> at one frequency, too.
>
>Is it still 1000 Hz?

Hi All,

Such easy things to confirm.....

I have a pair of Pioneer speakers, looked at their spec.s pasted to
the back, rated flat from 10Hz to 25KHz (flat being order of two from
nominal 10 Ohms) with a small (BW) peak at 80Hz.

Years ago in my metrology lab, we abandoned laboratory grade
amplifiers and speakers for commercial ones as the market offered far
better product at much cheaper rates.

Sound, like light, makes virtual experts of everyone through their
misperception of its common features. Eyes and ears are fine
instruments clouded by the brain.

73's
Richard Clark, KB7QHC

1500. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 15:54:51 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <gfCcnbII6MnMhYWiXTWJiA@comcast.com>
Source record: 112351

<Paul@Rasdoc.com> wrote in message
news:e4lehvkk0hv42s1q9777sgvhp5893a18d3@4ax.com...
> Is it possible to build an omnidirectional receiving antenna with
> gain?
TV transmitting antennas are generally omnidirectional, and have gain. They do this by concentrating all energy along the horizon. In fact, some work so well that they put up a secondary antenna at 100ft or so to take care of people who live close by.

If you want to talk about practicality, it would be easy to build one at 2 meters. Forget about it on 160m.

Tam/WB2TT

1501. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 15:55:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <el5ghv4hgo3p8sruijni2cfju3icdg2gup@4ax.com>
Source record: 112352

On 18 Jul 2003 04:50:07 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>
>In precision instrumentation systems, the output is commonly levelled
>or monitored through a levelling splitter (not to be confused with a
>power divider), so that a virtual zero-impedance point can be
>established, with a 50-ohm (or other Zo) resistor from that point to
>each output. And network analyzers are commonly calibrated with
>precision loads so that the imperfections in their outputs and
>reflectometers and cabling can be backed out by the calibration
>software.
>
>Cheers,
>Tom

Hi Tom,

H.W. Bode describes these characteristics through "Noise" Gain. It is
that portion of the "Open Loop" gain (or GBWP) that is returned to the
input.

The amount of "Noise" Gain is directly responsible for the significant
benefits (control over) of:
Input Impedance;
Output Impedance;
Noise (within the system);
Linearity (distortion);
Phase Response;
Gain variation;
Stability;
Frequency Response.

73's
Richard Clark, KB7QHC

1502. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 15:55:58 UTC
From: wp20032@aol.com
Message-ID: <20030718115558.02452.00000136@mb-m21.aol.com>
Source record: 112353

>Is it possible to build an omnidirectional receiving antenna with
>gain?

Yes. Assuming isotropic and assuming that negative values of gain are
permitted :)

--Wayne

1503. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:03:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8a6ghv0qaupctacp3np9mpo8vgfqevjsqd@4ax.com>
Source record: 112354

On Fri, 18 Jul 2003 09:47:32 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:
>Consider a 100W pulse radar transmitter.

Hi Tarmo,

Was this a speculation or borne of actual experience? (I am not
talking about the obvious, exceptionally low power.)

I understand the significance of what you wrote following it,
>.0027 W is reflected, etc, etc.
but in my experience with radars (megawatt models that I serviced,
calibrated and offered formal training in), this does not happen.

73's
Richard Clark, KB7QHC

1504. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:11:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <li6ghvkojg10eqlgutdr4h0lp6agjr1952@4ax.com>
Source record: 112355

On Fri, 18 Jul 2003 08:20:54 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:
>The same people produce the same arguments...

Hi Ian,

Your statement is a self-fulfilling example.

What purpose does it serve to merely say t'ain't so in place of
commenting on data taken in the field?

There are equipment operators.

There are bench techs.

There are some of both.

And then there are cut-and-paste theoreticians.

73's
Richard Clark, KB7QHC

1505. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:17:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <q27ghvkr2hbm5smeg4g9sg95gkjb0033m4@4ax.com>
Source record: 112356

On Fri, 18 Jul 2003 09:28:07 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>
>"Dilon Earl" <dilon_earl@mail.com> wrote in message
>news:3f16d49f.103931205@news.easynews.com...
>> On Thu, 17 Jul 2003 09:06:32 -0500, "William E. Sabin"
>> <sabinw@mwci-news> wrote:
>> If I have a 100 watt transmitter and my wattmeter shows 3 watts
>> reflected. Is 3 watts actually being dissipated in the tank and final
>> PA?
>>
>That would depend on the output impedance of the transmitter. If it is 50
>Ohms, all the reflected power would be absorbed by the transmitter. If it is
>0 Ohms or its Norton equivalent, it is all reflected, and none is
>dissipated.
>
>Tam/WB2TT
>

Hi Tam,

This is painfully obvious. It is also painfully demonstrative. It
also appears to be painfully avoided in lieu of providing an actual
value (Punchinello seems to wholly ignore his own cries that lacking
numbers renders such whining as ignorance).

I've read for years that the common RF rig is NOT a 50Ohm source, and
absolutely none dare commit themselves to just what value it is (much
less offer their own measure). Being a physical reality, the rig must
present some real value, but vacuous theory seems to bar that
discussion.

73's
Richard Clark, KB7QHC

1506. Re: Mobile antenna balancing ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:17:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1801d4_2@corp-news.newsgroups.com>
Source record: 112338

F. Feeney wrote:
> Actually, I read about this in Don Johnson of Screwdriver antenna fame's
> book on mobile radio operation. IIRC, the folks experimenting with it
> put the second whip on the far end of the car - tied to the frame, ie
> grounded - not driven. When tuned to resonance an increase in RF current
> in the car body was noticed and I think they also saw about a 3db
> increase in radiated signal. I imagine it's not very popular because of
> the difficulty of tuning two antennas instead of one, and the visual
> aspect of a second large antenna on the vehicle. It just isn't that
> practical even for a 3 db increase in signal.
>
> It wasn't presented as being a dipole or any form of phased array. Just
> as empirical data that picked up along the way that was interesting.

It would be a vertical beam with the boom (vehicle) capacitively
coupled to ground. It would work best on 10m-11m but should work
pretty well all the way down to 14 MHz. Probably not very useful
except for stationary use.

Actually, I experienced the same effect from a rear bumper mounted
screwdriver on my pickup. At the frequency where the truck is 1/4WL,
I experienced considerable gain in the direction the front of the
truck was pointed compared to off the sides of the truck. On one
Alaska contact from Arizona, it made the difference in being able
to carry on a QSO or not. It was a V-beam effect.
--
73, Cecil, W5DXP

1507. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:26:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18040d$1_2@corp-news.newsgroups.com>
Source record: 112340

Tdonaly wrote:

>>According to some posters, a source only puts out forward power minus
>>reflected power, by definition. 103W - 3W = 100W
>
> Which posters, Cecil?

Whoever wrote: "The PA output power is 103-3=100 W."
--
73, Cecil, W5DXP

1508. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:48:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f180916$1_2@corp-news.newsgroups.com>
Source record: 112342

Dr. Slick wrote:
> How do they measure a "surge impedance"?

For a transmission line, it is the same as the characteristic impedance. For a traveling wave antenna, it is the same as the feedpoint impedance. So for a center-fed standing wave antenna, like a dipole, you could terminate the ends of the antenna to eliminate reflections and then measure the feedpoint impedance.

Standing wave antennas are like transmission lines with standing waves. The impedance at any point is the (forward voltage wave plus the reflected voltage wave) divided by the (forward current wave plus the reflected current wave). The feedpoint impedance of traveling wave antennas is usually about 600-800 ohms according to The ARRL Antenna Book.
--
73, Cecil, W5DXP

1509. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:51:35 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1809d3_2@corp-news.newsgroups.com>
Source record: 112343

Dick Carroll wrote:
> You can be just as sure that the speaker presents its rated impedance only
> at one frequency, too.

Is it still 1000 Hz?
--
73, Cecil, W5DXP

1510. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:57:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f180b32_2@corp-news.newsgroups.com>
Source record: 112344

Roy Lewallen wrote:
> What needs to be thrown away is the belief that all impedances are the
> ratio of a voltage to a current, along with the notion that only
> resistors can have resistance.

I agree, Roy, but what can we do about it? I had been using "virtual impedance" to differentiate a voltage to current ratio from an intrinsic physical impedance. How would you differentiate an intrinsic physical impedance from a voltage to current ratio?
--
73, Cecil, W5DXP

1511. Re: Remodeling with fluorescent lights - HF noise ahead?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 16:58:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qd7ghv0vuf8g26l5asc2r39bovtcbbjmr6@4ax.com>
Source record: 112357

On Fri, 18 Jul 2003 12:43:17 GMT, "Carl R. Stevenson"
<wk3cqth@wk3c.com> wrote:
>
>I guess it may depend to some extent on the quality and type of
>fixtures/bulbs
>that you install.

Doesn't really matter much. Most noise optimized tubes are really
audio noise issues.

>My shack is in a finished "walk-out" basement (the house is dug into
>the slope at the top of the hill, such that from the front it appears to
>be a 1-story structure, but from the back side, it's 2-story).
>
>The entire basement area, ham shack, electronics lab, office, family room,
>woodshop, etc. is VERY well illuminated by an array of fixtures set in the
>grid of a suspended ceiling. Area is about 2000 sq. ft. and there are 14
>4 ft., 4-tube fixtures.
>
>I have checked and I can't see a noticable change in RX noise in the HF
>bands between all lights off and all lights on.
>
>If you get a tube that's starting to go, or a bad ballast, that could cause
>a dramatic change ... something that bodes in favor of replacing bad
>tubes.
>
>(Of course, my antennas are outside, away from the lighting, and the
>house is covered with aluminum siding for low maintenance, which
>may help to contain any noise from the lighting ... YMMV, depending
>on such shielding, antenna placement relative to the lighting, etc.)
>
>73,
>Carl - wk3c

Hi All,

My situation is very similar to Carl's, and my experience is very much
like his as well.

I went a little further to provoke problems to confirm all sources of
noise within my home.

The first was to establish a noise baseline (done at various times of
day and night and time of year, across the many bands) by using my rig
on battery power (it is actually always battery powered, but employs a
floating charger) with the charger and all accessories disconnected

and ground removed (no ground loops). I also throw the main breaker. There are any number of hidden power loads that you cannot disable or otherwise isolate. One of the most egregious examples is the doorbell transformer that in older homes can turn into an S9 noise generator that will plague many "experts."

That was Step One. There is not much point in going to Step Two if you cannot isolate sources. Many succeed however, through weeks of hair pulling and a magical connection (or break) that could also kill them.

Step Two is to throw the breaker back on. If this seems a huge chore of having you go through the house resetting clocks, let me console you with the evidence that that end of the gene pool has been thinned out considerably by the twice annual event of daylight savings and the invention of the digital clock. Survivors of that Darwinian task can now take another noise reading (again observing the list of times and frequencies already mentioned).

Step Three (this is a progression back toward your conventional shack design) is to start adding loads to the house circuit. Again, take readings (you need not note times as you are now introducing correlated noise). Remove power from all such loads.

Step Four is to add back your conventional ground (that is, the ground through which power, not RF arrives). This introduces the possibility of a ground loop. Repeat Step Three.

Step Five is to add back your conventional accessories. This too introduces the possibility of a ground loop. Repeat Step Four (which recursively repeats Step Three, of course).

All told, this should result in a grid of readings with several dozen (maybe 100) data points. This will take far less time than trying to solve a noise problem that persists for more than a day (and possibly on the WRONG day).

Any one of these tests could result in the appearance of noise. Sometimes this is correlated to the last addition of a load, but as tantalizing as that is, it too refuses cure (and you cannot live without that load).

Such problems then need to be isolated as to being over the air, or through conduction.

Over the air problems are often fixed by Carl's observation of having the antenna away from the house. More telling is the addition of a choke BalUn at all feed points (even those remote from the house, this is especially true for long wavelengths).

Problems of conduction are in fact ground loop based. You are sharing the same circuit as the noisy load. I have fluorescents above my station, and dimmers on every incandescent bulb in my house and yet I

suffer very little noise arriving by conduction (and find it perturbs over the air by 3 or 4 dB above baseline before I go turn off that light I rarely do that because atmospherics and remote noise often overwhelm this local contribution).

A simple way to confirm this noise path is to break it by powering your equipment off another circuit (circuit meaning the wire path to a separate breaker at the distribution panel). This can make 10-60 dB difference for dimmers alone (or the other killer, the fish tank heater). Simply employ a sufficiently long extension cord so that you do not change your shack configuration (which would also force another baseline evaluation).

The single next greatest contributor of noise is through peripheral, accessory connections. The lighted Daiwa SWR meter has a lump you plug into the wall. Both the lump and the connection are potential problems if you disregard them and one or the other turns out to be the problem. It is easy to disregard such an inconsequential item, so to are computers with modems the third most common source of ground loop.

If you wish to preserve those accessories, buffer your power through an isolation transformer with a faraday shield connection. Connecting the shield is also not obvious (there are reasons to connect it to the sink, there are reasons to connect it to the source - but never both). My battery charger is so buffered.

Well, these are the heavy hitters of noise. There are more, but their application becomes a matter of simple logic and practice when you have a basis.

73's
Richard Clark, KB7QHC

1512. Re: LQQKing for article

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 17:07:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <35aghvs2v50e28drofum40kc4b2h8ckca1@4ax.com>
Source record: 112358

On Fri, 18 Jul 2003 00:10:48 -0500, "WavyDave"
<nowaynowhere@yahoo.com> wrote:

>I think you mean fractal? Last time I saw someone mention that word here he
>was flamed to a crisp.
>
>"NEDROG" <nedrog@aol.comNOSPAM> wrote in message
>news:20030716215016.27503.00001115@mb-m24.aol.com...
>> Hey there - anybody still have a copy of the article - I think it was in
>73 mag
>> a couple of years back - reference a:
>>
>> 2 element FRACTUAL 10 M QUAD?
>>
>> 73's
>>
>> Howard W3CQH
>

Hi Howard,

Take a look at:
http://www.qsl.net/kb7qhc/antenna/fractal/index.htm

73's
Richard Clark, KB7QHC (and flame proof on the subject)

1513. Re: Dipole questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 17:12:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9daghvoqqfj435t0t25qljt9b6bhs90es2@4ax.com>
Source record: 112360

On Fri, 18 Jul 2003 03:35:04 GMT, Raphael Clancy
<rafemonkey@yah00.c0m> wrote:

>I just realized, all the hardware I need for direct saoling is already
>built into the PC I'll be using... the sound card has a microphone in,
>with a good amp, and A/D converter. though, I think I might install an
>isolation transformer, or at least a couple of diodes, to keep the
>machine from getting zapped right away.
>
>R.

Hi Raphael,

You stand more chance of measuring the noise of the computer. The
problem with dipoles is they are not shielded from earth (and some
dishes suffer equally - by degree). Try it first with Jupiter, a
known and stable source, which should give you some basis for your
further experimentation.

73's
Richard Clark, KB7QHC

1514. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 17:37:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1814ac$1_2@corp-news.newsgroups.com>
Source record: 112347

Ian White, G3SEK wrote:
> "Where does the reflected power go?" is even worse because it contains
> at least two built-in misconceptions: that reflected power waves exist,
> and that they have to "go" somewhere.

Ian, it can be proven that reflected power waves exist. Ramo & Whinnery say they exist. Standing waves in a single source, single feedline, single load system cannot exist without reflected waves. The HP Application Note AN 95-1 defines the power in reflected waves. "|a2|^2 = Power reflected from the load." Saying something is a misconception is only an opinion that differs from a lot of expert opinions.

> That question has *no* correct answer - and this newsgroup is living
> proof that none can be found.

The answer has been found but most people think they already know everything there is to know. The answer is contained in the following example. The sources are signal generators with circulator loads (SGCL). The (50) or (150) subscript is the ohmic value of the circulator load resistor. The signal generators are phase-locked and can be turned on and off independently.

100W SGCL(50)--1WL 50 ohm feedline--+--1/2WL 150 ohm feedline--33.33W SGCL(150)
Pfwd1--> Pfwd2-->
<--Pref1 <--Pref2

Step 1: With the 100W SGCL(50) on and the 33.33W SGCL(150) off, the following conditions exist:

Pfwd1 = 100W, Pref1 = 25W, Pfwd2 = 75W, Pref2 = 0W

Step 2: Now turn on the 33.33W SGCL(150). At the instant the rearward-traveling signal reaches the impedance discontinuity, the following conditions exist at the discontinuity:

Pfwd1 = 100W, Pref1 = 0W, Pfwd2 = 133.33W, Pref2 = 33.33W

All anyone has to do is figure out what happened to Pref1 = 25W in Step 1 the instant the 33.33W arrived at the impedance discontinuity in Step 2. This is not a transient buildup condition. If we ignore any distortion in the 33.33W Pref2 wavefront, this is an immediate event and Pref1 is immediately canceled by an equal magnitude and opposite phase Pref2(1-|rho|^2) wavefront at the moment it first arrives.

A few pretty bright individuals are convinced that this is what happens. That's up from zero a couple of years ago. The problem

appears to be that most people will not take the time and effort
to take a close look and understand the above example.
--
73, Cecil, W5DXP

1515. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 17:41:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18157c$1_2@corp-news.newsgroups.com>
Source record: 112349
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Brian Kelly wrote:
> Output suds don't mean squat. "Ya can't work 'em if ya can't hear
> 'em." Wherein lies the whole problem.

I think it is assumed that the guy on the other end would
also have more output suds, i.e. 100W would become obsolete.
--
73, Cecil, W5DXP

1516. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:29:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhgf3rkekco38d@corp.supernews.com>
Source record: 112361

You can do about it what you like. What I've chosen to do about it is to try and educate the people who will listen, and ignore those who won't. I find the concepts perfectly understandable without the need for additional adjectives.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> What needs to be thrown away is the belief that all impedances are the
>> ratio of a voltage to a current, along with the notion that only
>> resistors can have resistance.
>
>
> I agree, Roy, but what can we do about it? I had been using "virtual
> impedance" to differentiate a voltage to current ratio from an intrinsic
> physical impedance. How would you differentiate an intrinsic physical
> impedance from a voltage to current ratio?
> --
> 73, Cecil, W5DXP
>

1517. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:33:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhgfckju17f47a@corp.supernews.com>
Source record: 112362

And the mice are off.

Is it just my perception, or is it the fate of all threads in this
newsgroup to end up being Cecil arguing about power waves?

Cecil, have you considered starting your own newsgroup, say
alt.cecils.power.waves?

Roy Lewallen, W7EL

W5DXP wrote:
> Ian White, G3SEK wrote:
>
>> "Where does the reflected power go?" is even worse because it contains
>> at least two built-in misconceptions: that reflected power waves
>> exist, and that they have to "go" somewhere.
>
>
> Ian, it can be proven that reflected power waves exist. Ramo & Whinnery
> say they exist. Standing waves in a single source, single feedline,
> single load system cannot exist without reflected waves. The HP Application
> Note AN 95-1 defines the power in reflected waves. "|a2|^2 = Power
> reflected
> from the load." Saying something is a misconception is only an opinion
> that differs from a lot of expert opinions. . .

1518. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:42:00 UTC
From: jder8745@aol.com
Message-ID: <20030718144200.02220.00000104@mb-m21.aol.com>
Source record: 112363

Vigor is defined in my "American College
Dictionary as: "1. active strength or force---"

What is the "strength" of an antenna?

What is the "force" of an antenna?

Is it the same as the "oomph"?

73 de Jack, K9CUN

1519. How to test a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:42:37 UTC
From: David Cook <nospam.davepc4@comcast.net>
Message-ID: <xcXRa.78790$OZ2.13785@rwcrnsc54>
Source record: 112364

Hi Group, I have a balun that I believe is fried. Silly me, I tried to load up my 20 meter dipole on 40 meters with my amplifier. There was a flicker on the SWR meter then the SWR shot up to infinity. I'm sure I zapped the balun, but am curious to know if there's a way to test one, other than by connecting it to another set of wires.

Also, I'd like to cut the thing open and see what's inside. It's one of the typical kind that's in a 1 3/4" PVC tube with end caps. Is it possible to cut these things open or are these things potted with some compond on the inside?

Thanks for any advice and 73 to all,

-- Dave, WA0TTN

1520. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:45:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhgg1vb3b05456@corp.supernews.com>
Source record: 112365

Sigh. I guess one more time. A mouse in the maze.

70.7 volt RMS voltage source, 50 ohm series resistor. Connect to an open
circuited, half wavelength transmission line. Put your magic lossless
Bird wattmeter in the line and measure the forward and reverse power:

Pf = 100 watts
Pr = 100 watts

The "transmitter" is perfectly matched to the line.
The "reflected power" is 100 watts.
The dissipation of the "transmitter" source impedance is zero. Not 100
watts. Not even one watt. Zero.

No, how can anyone possibly say that when the transmitter is matched,
the reflected power is absorbed by the transmitter?

Any number of other examples can easily be found. You'll find a few
others in the "Food For Thought" series available from
ftp://eznec.com/pub/food_for_thought/.

I'm firmly in agreement with Bill and Ian on this one.

Roy Lewallen, W7EL

Richard Clark wrote:
> On Fri, 18 Jul 2003 09:28:07 -0400, "Tarmo Tammaru"
> <t-tammaru@home.com> wrote:
>
>
>>"Dilon Earl" <dilon_earl@mail.com> wrote in message
>>news:3f16d49f.103931205@news.easynews.com...
>>
>>>On Thu, 17 Jul 2003 09:06:32 -0500, "William E. Sabin"
>>><sabinw@mwci-news> wrote:
>>> If I have a 100 watt transmitter and my wattmeter shows 3 watts
>>>reflected. Is 3 watts actually being dissipated in the tank and final
>>>PA?
>>>
>>
>>That would depend on the output impedance of the transmitter. If it is 50
>>Ohms, all the reflected power would be absorbed by the transmitter. If it is
>>0 Ohms or its Norton equivalent, it is all reflected, and none is
>>dissipated.
>>
>>Tam/WB2TT
>>

>
>
> Hi Tam,
>
> This is painfully obvious. It is also painfully demonstrative. It
> also appears to be painfully avoided in lieu of providing an actual
> value (Punchinello seems to wholly ignore his own cries that lacking
> numbers renders such whining as ignorance).
>
> I've read for years that the common RF rig is NOT a 50Ohm source, and
> absolutely none dare commit themselves to just what value it is (much
> less offer their own measure). Being a physical reality, the rig must
> present some real value, but vacuous theory seems to bar that
> discussion.
>
> 73's
> Richard Clark, KB7QHC

1521. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:47:23 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3vfghvkqm2q715l4d9op9njf64osdm0mo8@4ax.com>
Source record: 112366

On 18 Jul 2003 18:42:00 GMT, jder8745@aol.com (JDer8745) wrote:

>Vigor is defined in my "American College
>Dictionary as: "1. active strength or force---"
>
>--------------------
>
>What is the "strength" of an antenna?
>
>What is the "force" of an antenna?
>
>Is it the same as the "oomph"?
>
>73 de Jack, K9CUN

Hi Jack,

Strength is often associated with potential (Volts being common here).

Force is more often associated with power (by virtue of Newton, Watts being common here).

oomph is what an old fart mutters as he stirs uncomfortably in his chair while avoiding a bench test of his mental gymnastics.

73's
Richard Clark, KB7QHC

1522. Re: How to test a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:51:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <26gghvkff9qi4ajs3t7tj0mp1rt9889knl@4ax.com>
Source record: 112367

On Fri, 18 Jul 2003 18:42:37 GMT, "David Cook"
<nospam.davepc4@comcast.net> wrote:

>Hi Group, I have a balun that I believe is fried. Silly me, I tried to load
>up my 20 meter dipole on 40 meters with my amplifier. There was a flicker on
>the SWR meter then the SWR shot up to infinity. I'm sure I zapped the balun,
>but am curious to know if there's a way to test one, other than by
>connecting it to another set of wires.
>
>Also, I'd like to cut the thing open and see what's inside. It's one of the
>typical kind that's in a 1 3/4" PVC tube with end caps. Is it possible to
>cut these things open or are these things potted with some compond on the
>inside?
>
>Thanks for any advice and 73 to all,
>
>-- Dave, WA0TTN

Hi Dave,

First connect a Dummy Load in place of the BalUn at the remote end of
the feedline and confirm 1:1.

If you can visually inspect the BalUn's guts, it should be a simple
matter to determine if it exhibits a wire opened by fusing current, or
by a shorted condition often attended by char or smoke - this may be
more dicey.

At the bench, terminate the BalUn with the load it expects to
transform (using a non-inductive resistor). Apply power and note SWR
(take care to not incinerate the resistor).

73's
Richard Clark, KB7QHC

1523. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:54:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhggk3mbo2ct39@corp.supernews.com>
Source record: 112368

How about light bulbs, solar panels, thermocouples, batteries, fuel cells, and fireflies?

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> Any transducer I can think of offhand converts between mechanical energy and
> electrical energy, as for instance a loudspeaker, microphone, mechanical
> filter, etc.
>
> As for the impedance of free space, one way to build a stealth aircraft is
> to cover it with material that has a resistivity of 377 Ohms/square. Then
> there is no reflection
>
> Tam/WB2TT
>
>

1524. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:59:18 UTC
From: dplatt@radagast.org
Message-ID: <vhggs6b4qfanee@corp.supernews.com>
Source record: 112269
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

In article <d22b54c3.0307180210.31ce8910@posting.google.com>,
Brian Kelly <kelly@dvol.com> wrote:

>> Wouldn't surprise me. The FCC requires the use of the least amount of
>> power needed to establish a given mode of communication. If BPM fills
>> the whole HF spectrum with S9-level fog, then QRP will go out the
>> door, and maximum-legal power will become technically necessary to
>> "burn through".
>>
>> I'd hate that. So would our neighbors. Expect a big increase in
>> TVI/RFI complaints.
>>
>> Similar things might happen with other licensed HF services... they
>> may also have to crank up their power.
>
>Output suds don't mean squat. "Ya can't work 'em if ya can't hear
>'em." Wherein lies the whole problem.

Agreed. I guess my point was that if BPL interference becomes a
nationwide problem, _lots_ of people in the US will boost their
transmitter power so that they can be heard - *and* they'll be limited
to working stations who can do likewise.

This leads to a rather nasty non-compromise - you'll be limited to
working a much smaller set of stations (e.g. few or no DX, no QRP),
you'll spend a lot more on equipment, *and* your neighbors (BPL-using
and otherwise) will be much more likely to experience harmful
interference.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1525. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 18:59:55 UTC
From: dplatt@radagast.org
Message-ID: <vhggtbrjcb4k17@corp.supernews.com>
Source record: 112270
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

In article <3f18157c$1_2@corp-news.newsgroups.com>,
W5DXP <Cecil.A.Moore@ieee.org> wrote:

>Brian Kelly wrote:
>> Output suds don't mean squat. "Ya can't work 'em if ya can't hear
>> 'em." Wherein lies the whole problem.
>
>I think it is assumed that the guy on the other end would
>also have more output suds, i.e. 100W would become obsolete.

Bingo.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1526. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:06:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f182982$1_2@corp-news.newsgroups.com>
Source record: 112359

Nic. Santean wrote:
> I thought that only light (and not radio waves) has a dual nature.
> Are U sure that photons play a role in radio waves radiation ??
> U sure?

Yep, radio waves and light are the same stuff (photons) just different frequencies. They are all part of the electromagnetic spectrum that extends from DC to gamma rays (and higher?)

Using particle physics to explain radiation from an antenna is easier to understand than fields, waves, and Maxwell's equations. It allows us to picture a tangible particle leaving the antenna. And lots of things are understood about photons.

>>The RF energy from the source accelerates and decelerates free electrons.
>>The changing energy levels of the free electrons causes the excess energy
>>to be radiated as coherent photons.
--
73, Cecil, W5DXP

1527. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:09:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dlgghvoetds88qmj1fu3i96socqsuh1bfe@4ax.com>
Source record: 112271

On Fri, 18 Jul 2003 11:45:13 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Sigh. I guess one more time. A mouse in the maze.

No cheese at the end of that one.

>I'm firmly in agreement with Bill and Ian on this one.
>
>Roy Lewallen, W7EL

your's and other opinions merely supports my contention:

>> I've read for years that the common RF rig is NOT a 50Ohm source, and
>> absolutely none dare commit themselves to just what value it is (much
>> less offer their own measure). Being a physical reality, the rig must
>> present some real value, but vacuous theory seems to bar that
>> discussion.
>>
>> 73's
>> Richard Clark, KB7QHC

I still find it strange that the savants and pundits will say what it
is NOT, but NOT what it IS.

Is one Ohm too much?

Is ten thousand Ohms too little?

Do anyone of you have a simple number that must exist as a physically
verifiable entity of a physical example commonly available to any Ham?

What is it that heats up in the presence of mismatch that all
manufacturers go to great length to protect against? Does it have to
be a carbon resistor to qualify? Which one? Why is it so hard to
quantify in the face of such firm agreement among you gentlemen? My
guess is that you would refuse to warrant your answer in the face of
catastrophic failure - evidence contrary to your opinions.

Sorry, but puzzles and enigmas do not answer the reality of heat and
heat does not arrive through the offices of some virtualized component
born of substituted theories of matching.

73's
Richard Clark, KB7QHC

1528. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:19:56 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F18485C.47DA9DA3@uci.edu>
Source record: 112272

W5DXP wrote:
> Point is that "maximum possible power" will cause a lot of transmitters
> to exceed their maximum power rating and overheat.

How much is the maximum possible power? H-Bomb? Gamma ray burst? Big Bang? ;-)

73, ac6xg

1529. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:23:01 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f184892@shknews01>
Source record: 112275

Well, at least one thing you guys succeeded :
made me go to the library and start reading.

An initial feeling I have is that equations and
formulas (Maxwell's and alike) do [describe]
these phenomena; however they do little to
[explain] their very nature. Hence, I guess
pretty soon I will dive into quantum physics
to look for some answers.

For example, I needed the Special Theory of
Relativity to get myself convinced of the intrinsic
reality(!) of the electric/magnetic field. And
this was tough, since is hard to comprehend
some form of physical existence without the
support of matter.

Cordially,

Nic.
http://www.csd.uwo.ca/~nic

"Nic. Santean" <nic@csd.uwo.ca> wrote in message news:3f16b377@shknews01...
>
> Below is a paragraph - from a known book -
> which I have difficulties understanding. Please
> somebody explain in more clear terms the
> phenomenon.
>
> < the context was about dipole antennas,
> however the comment has a general nature >
>
> "Radiation of electromagnetic waves is created
> when the alternating electric and magnetic fields
> attempt to collapse back toward the antenna.
> However, new fields being created by the next
> half cycle push the preceding fields into space,
> which is the mechanism of radiation."
>
> - from "The Beginner's Handbook of Amateur
> Radio" by Clay Laster, page 260
>
> Cordially,
>
> Nic. Santean
> http://www.csd.uwo.ca/~nic/

>
>

1530. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:34:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1jhghv010ta729k0eftbbacvpr6hut16lv@4ax.com>
Source record: 112273

On Fri, 18 Jul 2003 11:54:52 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>How about light bulbs, solar panels, thermocouples, batteries, fuel
>cells, and fireflies?
>

A light bulb is a transducer? Amusing example of non mechanical
translation until you touch it, then the phonons exhibit that
mechanical transfer in the form of heat. Common experience as your
hand approached that opportunity would have revealed that fate through
radiation and that is neglecting another mechanical form of energy
transmission offered. That other form is convection.

You have not offered counter-examples, you simply ignore positive
examples. I've spent nearly 30 years in the field of Electro-Optics
with contracts as recent as this year. I've yet to see the trade
press or research commonly describe these items as "transducers."
That is not to say I would reject any such reference, but I would say
few are treading that path to attend a philosophical distinction that
is largely semantic.

Stick with antenna as transducer, it makes a fine metaphor.

73's
Richard Clark, KB7QHC

>Roy Lewallen, W7EL
>
>Tarmo Tammaru wrote:
>> Any transducer I can think of offhand converts between mechanical energy and
>> electrical energy, as for instance a loudspeaker, microphone, mechanical
>> filter, etc.
>>
>> As for the impedance of free space, one way to build a stealth aircraft is
>> to cover it with material that has a resistivity of 377 Ohms/square. Then
>> there is no reflection
>>
>> Tam/WB2TT
>>
>>

1531. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:41:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <T4Odnc6-GOMd0IWiU-KYgw@comcast.com>
Source record: 112274

Call it a simple example. I would assume in a real system multiple pulses are would be highly undesirable and eliminated by discharging the line at the end of the first pulse. Maybe I should have said 100W pulse generator with on output impedance of 0 or infinity, and a lousy dummy load. At a lower power you could hook up a 'scope to the middle of the line and see the multiple reflections.

Tam/WB2TT
"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:8a6ghv0qaupctacp3np9mpo8vgfqevjsqd@4ax.com...
> On Fri, 18 Jul 2003 09:47:32 -0400, "Tarmo Tammaru"
> <t-tammaru@home.com> wrote:
> >Consider a 100W pulse radar transmitter.
>
> Hi Tarmo,
>
> Was this a speculation or borne of actual experience? (I am not
> talking about the obvious, exceptionally low power.)
>
> I understand the significance of what you wrote following it,
> >.0027 W is reflected, etc, etc.
> but in my experience with radars (megawatt models that I serviced,
> calibrated and offered formal training in), this does not happen.
>
> 73's
> Richard Clark, KB7QHC

1532. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:51:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9djghvgc00p5tfniafrub70cmov8vveqp2@4ax.com>
Source record: 112276

On Fri, 18 Jul 2003 15:41:21 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>Call it a simple example. I would assume in a real system multiple pulses
>are would be highly undesirable and eliminated by discharging the line at
>the end of the first pulse. Maybe I should have said 100W pulse generator
>with on output impedance of 0 or infinity, and a lousy dummy load. At a
>lower power you could hook up a 'scope to the middle of the line and see the
>multiple reflections.
>
>Tam/WB2TT

Hi Tam,

I would call your Radar a faulty example.

The point of the matter is that real equipment exhibits real
dissipation of reflected power in the conventional expectation. Your
new example above anticipates this by forcing a failure of that
expectation through not matching the load.

Such problems that arise as a consequence were written up by NBS,
Hewlett-Packard and Steven Adams in the discussion of Mismatch
Uncertainty.

The fact that various pundits and savants have no actual value to
offer in substitution for the oft-repeated refrain "it a'in't 50Ohms"
is that any value offered would be immediately demonstrated as being
wrong through standard bench top verification.

As Ian has characterized this as an exercise in futility, I am content
to observe no one stepping up to the bench for validation.

73's
Richard Clark, KB7QHC

1533. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 19:57:01 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F18510D.9E5ABEC5@uci.edu>
Source record: 112277

W5DXP wrote:
>
> William E. Sabin wrote:
> > If the transmitter output is 100 W and the reflected power is 3 W, then
> > the 100 W is the difference between 100+3=103 W (forward power) and 3 W
> > (reflected power).
>
> If the source is a signal generator equipped with a circulator and
> load, the generator is putting out 103 watts, and the circulator
> load is dissipating 3 watts, is the generator still only putting
> out 100 watts by definition?

If the sig gen is putting out 100 watts, with 3 watts reflected and 97 watts going to the load, then 3 watts must be going to the circulator. If 100 watts is going to the load and 3 watts is reflected back to the circulator, then the sig gen is putting out 103 watts. But if 97 watts is getting to the load, 3 watts is reflected and there is no circulator or other load, then how much do you think the sig gen is actually putting out?

73, ac6xg

1534. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 20:01:43 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <7zydndtJEaOxz4WiXTWJkA@comcast.com>
Source record: 112278

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:q27ghvkr2hbm5smeg4g9sg95gkjb0033m4@4ax.com...
> On Fri, 18 Jul 2003 09:28:07 -0400, "Tarmo Tammaru"
> <t-tammaru@home.com> wrote:
>
> I've read for years that the common RF rig is NOT a 50Ohm source, and
> absolutely none dare commit themselves to just what value it is (much
> less offer their own measure). Being a physical reality, the rig must
> present some real value, but vacuous theory seems to bar that
> discussion.
>
> 73's
> Richard Clark, KB7QHC

Yeah, seems to be a deep dark secret. If you look at the specs of RF power transistors, they will give the output impedance vs frequency - BUT you have to look at the footnote. In virtually all cases what they mean is the conjugate of the load impedance. It is the jX of the transistor (1/jY), in parallel with
((VCC-Vsat)**2) /2P.

I have never gotten around to doing this, but I believe the data sheets for tubes like the 811A and 813 do give the plate resistance, which should make it possible to calculate the output impedance at the lower frequencies like 160m.

Tam/WB2TT

1535. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 20:23:52 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <hJ2cnXbm0NbAyoWiXTWJjg@comcast.com>
Source record: 112279

Roy,

You are cheating. In the steady state there is no load on your source.
Regardless of what the Bird meter reads. Do one of the following:

1.Short the end of the 1/2 wave line.
2.Use a 1/4 wave open ended line.
3.Get a pulse generator, 0 Ohm output impedance +50 Ohm series resistor. Set the pulse with to 100ns and 1V, and use an arbitrary length of coax, either open or shorted, but longer than 100ns. Grab a 'scope and look at the junction of the coax and the 50 Ohm resistor. You will be able to see the .5V reflected pulse appear across the 50 ohm resistor. ALL of the reflected energy was absorbed, and half of the forward power.

Tam/WB2TT
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vhgg1vb3b05456@corp.supernews.com...
> Sigh. I guess one more time. A mouse in the maze.
>
> 70.7 volt RMS voltage source, 50 ohm series resistor. Connect to an open
> circuited, half wavelength transmission line. Put your magic lossless
> Bird wattmeter in the line and measure the forward and reverse power:
>
> Pf = 100 watts
> Pr = 100 watts
>
> The "transmitter" is perfectly matched to the line.
> The "reflected power" is 100 watts.
> The dissipation of the "transmitter" source impedance is zero. Not 100
> watts. Not even one watt. Zero.
>
> No, how can anyone possibly say that when the transmitter is matched,
> the reflected power is absorbed by the transmitter?
>
> Any number of other examples can easily be found. You'll find a few
> others in the "Food For Thought" series available from
> ftp://eznec.com/pub/food_for_thought/.
>
> I'm firmly in agreement with Bill and Ian on this one.
>
> Roy Lewallen, W7EL
>
> Richard Clark wrote:
> > On Fri, 18 Jul 2003 09:28:07 -0400, "Tarmo Tammaru"
> > <t-tammaru@home.com> wrote:

> >
> >
> >"Dilon Earl" <dilon_earl@mail.com> wrote in message
> >news:3f16d49f.103931205@news.easynews.com...
> >>
> >>>On Thu, 17 Jul 2003 09:06:32 -0500, "William E. Sabin"
> >>><sabinw@mwci-news> wrote:
> >>> If I have a 100 watt transmitter and my wattmeter shows 3 watts
> >>>reflected. Is 3 watts actually being dissipated in the tank and final
> >>>PA?
> >>>
> >>
> >>That would depend on the output impedance of the transmitter. If it is
50
> >>Ohms, all the reflected power would be absorbed by the transmitter. If
it is
> >>0 Ohms or its Norton equivalent, it is all reflected, and none is
> >>dissipated.
> >>
> >>Tam/WB2TT
> >>
> >
> >
> > Hi Tam,
> >
> > This is painfully obvious. It is also painfully demonstrative. It
> > also appears to be painfully avoided in lieu of providing an actual
> > value (Punchinello seems to wholly ignore his own cries that lacking
> > numbers renders such whining as ignorance).
> >
> > I've read for years that the common RF rig is NOT a 50Ohm source, and
> > absolutely none dare commit themselves to just what value it is (much
> > less offer their own measure). Being a physical reality, the rig must
> > present some real value, but vacuous theory seems to bar that
> > discussion.
> >
> > 73's
> > Richard Clark, KB7QHC
>

1536. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 20:24:18 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bf9l1i$r71$1@sparta.btinternet.com>
Source record: 112280

> The feedpoint impedance
> of traveling wave antennas is usually about
> 600-800 ohms according
> to The ARRL Antenna Book.
> --
> 73, Cecil, W5DXP

==========

Of what use is the ARRL Antenna Book if the enquirer hasn't got it? If he had it he wouldn't be enquiring.

Anyway, if you have correctly quoted it, the ARRL Antenna Book is wrong,

Really Cec, ii's not like you to disseminate false information like some disreputable organisations we have recently become familiar with. Note the smiley ..... ;o)

Suggestion - to find a better value at HF why not use an Autek or MFJ antenna analyser.

Yours, Reg.

1537. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 20:37:15 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <o4mghvke6vfrq521al3phm489s9nuakvnd@4ax.com>
Source record: 112281

On Fri, 18 Jul 2003 16:01:43 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>Yeah, seems to be a deep dark secret. If you look at the specs of RF power
>transistors, they will give the output impedance vs frequency - BUT you have
>to look at the footnote. In virtually all cases what they mean is the
>conjugate of the load impedance. It is the jX of the transistor (1/jY), in
>parallel with
> ((VCC-Vsat)**2) /2P.

Hi Tam,

Motorola offers quite specific characteristics across frequency.
Reference MRF421, MRF433, MRF454 for examples of dirt ordinary power
transistors found in more than 20 years of transistorized Ham
transmitters. Take their own data, Z transform them through
transformers (not transducers) and you find 50Ohms without any more
sophisticated math than that required of the standard Technology
Certificate of training. Where does it go through after that? A low
pass filter designed for 50Ohms to an antenna jack specified to
deliver full power to a 50Ohm load.

What technical rebuttal do I hear in response to simple engineering
data? "It is impossible to determine the output Z of this source."
For some I can well imagine they do find it difficult....

73's
Richard Clark, KB7QHC

1538. Re: Wanted: SWAN Mobile Antenna Info

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 21:01:03 UTC
From: mcalhoun@ksu.edu
Message-ID: <bf9n6f$5ie@unix1.cc.ksu.edu>
Source record: 112282
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

> I remember it was called a 'Swantenna', but thats
>all. Sorry 'bout that...

I once owned one. LOVED it! Worked quite well, and could change bands
while moving! Unfortunately, I eventually drove under a too-low tree
and ruined it.

--Myron.
--
Five boxes preserve our freedoms: soap, ballot, witness, jury, and cartridge
PhD EE (retired). "Barbershop" tenor. CDL(PTX). W0PBV. (785) 539-4448
NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle, Pistol)

1539. WTB 60-70' HEAVY DUTY self-supporting (fixed, not crank-up) tower

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 21:43:25 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <1SZRa.1034$IL.118269@nnrp1.ptd.net>
Source record: 112283
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.swap

The subject says what I'm looking for ... must be in excellent-very_good condition, capable of MINIMUM of 30 sq. ft. wind loads in 100 mph wind, within reasonable distance of Allentown, PA, and priced reasonably. Would prefer disassembled on the ground, but will consider taking down a tower that I'm comfortable is structurally sound.

No rusted-out clunkers, please.

73,
Carl - wk3c

1540. Re: Wanted: SWAN Mobile Antenna Info

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 21:44:05 UTC
From: Old DXer <"Old DXer"@connectnet.net>
Message-ID: <FSZRa.3152$ff.1548@fed1read01>
Source record: 112284
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors

Try:
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"mcalhoun" <mcalhoun@ksu.edu> wrote in message
news:bf9n6f$5ie@unix1.cc.ksu.edu...
> > I remember it was called a 'Swantenna', but thats
> >all. Sorry 'bout that...
>
> I once owned one. LOVED it! Worked quite well, and could change bands
> while moving! Unfortunately, I eventually drove under a too-low tree
> and ruined it.
>
> --Myron.
> --
> Five boxes preserve our freedoms: soap, ballot, witness, jury, and
cartridge
> PhD EE (retired). "Barbershop" tenor. CDL(PTX). W0PBV. (785)
539-4448
> NRA Life Member and Certified Instructor (Home Firearm Safety, Rifle,
Pistol)

1541. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 21:47:08 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307181347.12604559@posting.google.com>
Source record: 112285

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhf4blim59e3b1@corp.supernews.com>...
> >>
> >>Y'see, if you really, really want an antenna to be a kind of automobile,
> >>you can cook up a bunch of reasons to convince yourself that it is. The
> >>same method works for astrology and fortune telling, too.
> >>
> >
> >
> > Shall i call this a Straw man argument? Or putting words in
> > someone's mouth?
>
> Feel free to call it what you want. I believe I've made as valid an
> argument for an antenna being an automobile as you did for it being a
> transformer, and based on the same criteria.
>

Well, if you agree that two antennas/transducers in close
proximity will make a transformer (albeit a somewhat inefficient
one!), then i don't think i was that far off base.

>
> The optimization of an antenna depends on many factors, only one of
> which is the nature of the medium in which it's immersed. And among the
> medium's important properties are its permeability, permittivity, and
> the velocity of a wave propagating in it. The phase velocity and
> characteristic impedance can both be calculated from the permeability
> and permittivity, so you can't really say any one of these is more
> important than the other.
>
> It doesn't make any sense to throw out the concept of free space
> impedance just because it confuses people who don't know what it means.
> It's an extremely useful and well-understood concept. For example,
> reflection of a wave from a plane conductor or the ground can easily be
> found by calculating a reflection coefficient based on the impedance of
> the reflecting surface and the impedance of the impinging wave. (The
> impedance of a wave can be quite different close to an antenna than it
> is after it's traveled some distance.) If you look in some of those
> texts I recommended, you'll find the impedance of free space cropping up
> all over the place.
>
> What needs to be thrown away is the belief that all impedances are the
> ratio of a voltage to a current, along with the notion that only
> resistors can have resistance.
>
> Roy Lewallen, W7EL

You have convinced me that you are correct about both of these points.

But i don't think that an antennas impedance will not be affected by the permeability of the medium that surrounds it. An antennas input impedance will be different in free space as opposed to being immersed in water, for example.

This indicates to me that the antenna is indeed "matching" 50 Ohms to the impedance of free space, even if it is a different type of impedance.

Do you think that the characteristics of a transformer of a specific turns ratio, gauge wire, and core geometry, will NOT depend on the core material? I would say definitely it WILL depend on the material.

Slick

1542. 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 21:55:18 UTC
From: c <no@spam.com>
Message-ID: <3f186e90$0$135$1b62eedf@news.wanadoo.nl>
Source record: 112288
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Hello All,

I have comparisation information from 20 different
Diamond antennas (verticals).
For the bands: 50/144/430/1200Mhz.
Compare the gain and the length.

All information is to see in a nice chart!

http://www.qsl.net/pd0rkc (Click on technics).

73's Cor

1543. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 21:56:25 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhgr8h2knrc364@corp.supernews.com>
Source record: 112286

Actually, several people (W8JI among them) have measured the output impedance of common amateur linear amplifiers by at least a couple of methods. The most credible measurements show, interestingly, a value very close to 50 ohms when the amplifier is adjusted for normal operation.

Of course, it doesn't really matter, but people continue to make a big deal out of it.

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> "Richard Clark" <kb7qhc@comcast.net> wrote in message
> news:q27ghvkr2hbm5smeg4g9sg95gkjb0033m4@4ax.com...
>
>>On Fri, 18 Jul 2003 09:28:07 -0400, "Tarmo Tammaru"
>><t-tammaru@home.com> wrote:
>>
>>I've read for years that the common RF rig is NOT a 50Ohm source, and
>>absolutely none dare commit themselves to just what value it is (much
>>less offer their own measure). Being a physical reality, the rig must
>>present some real value, but vacuous theory seems to bar that
>>discussion.
>>
>>73's
>>Richard Clark, KB7QHC
>
>
> Yeah, seems to be a deep dark secret. If you look at the specs of RF power
> transistors, they will give the output impedance vs frequency - BUT you have
> to look at the footnote. In virtually all cases what they mean is the
> conjugate of the load impedance. It is the jX of the transistor (1/jY), in
> parallel with
> ((VCC-Vsat)**2) /2P.
>
> I have never gotten around to doing this, but I believe the data sheets for
> tubes like the 811A and 813 do give the plate resistance, which should make
> it possible to calculate the output impedance at the lower frequencies like
> 160m.
>
> Tam/WB2TT
>
>

1544. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 22:02:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhgrjbr7o0tc04@corp.supernews.com>
Source record: 112287

Tarmo Tammaru wrote:
> Roy,
>
> You are cheating. In the steady state there is no load on your source.
> Regardless of what the Bird meter reads. Do one of the following:

Why is this cheating? There is reverse power on the line. The source is not absorbing the reverse power. You and others have said, without qualification, that it does. I've shown a case where it doesn't.
>
> 1.Short the end of the 1/2 wave line.
> 2.Use a 1/4 wave open ended line.
> 3.Get a pulse generator, 0 Ohm output impedance +50 Ohm series resistor. Set
> the pulse with to 100ns and 1V, and use an arbitrary length of coax, either
> open or shorted, but longer than 100ns. Grab a 'scope and look at the
> junction of the coax and the 50 Ohm resistor. You will be able to see the
> .5V reflected pulse appear across the 50 ohm resistor. ALL of the reflected
> energy was absorbed, and half of the forward power.

When talking of amateurs and transmitters, we're dealing with sinusoidal, steady state conditions. You've just described a transient pulse situation. It's different in several ways, one of the most important being that the source is off when the returning pulse arrives. I'm fully able to discuss TDR phenomena, but it's not relevant, and only adds confusion to a discussion of amateur transmitters and transmission lines.

In sinusoidal, steady state conditions, it's absolutely incorrect to say that the reflected power is absorbed by the source, whether the source is matched or not. And it's easy to show it's incorrect, as I've done.

Roy Lewallen, W7EL

>
> Tam/WB2TT
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vhgg1vb3b05456@corp.supernews.com...
>
>>Sigh. I guess one more time. A mouse in the maze.
>>
>>70.7 volt RMS voltage source, 50 ohm series resistor. Connect to an open
>>circuited, half wavelength transmission line. Put your magic lossless
>>Bird wattmeter in the line and measure the forward and reverse power:
>>
>> Pf = 100 watts
>> Pr = 100 watts

>>
>>The "transmitter" is perfectly matched to the line.
>>The "reflected power" is 100 watts.
>>The dissipation of the "transmitter" source impedance is zero. Not 100
>>watts. Not even one watt. Zero.
>>
>>No, how can anyone possibly say that when the transmitter is matched,
>>the reflected power is absorbed by the transmitter?
>>
>>Any number of other examples can easily be found. You'll find a few
>>others in the "Food For Thought" series available from
>>ftp://eznec.com/pub/food_for_thought/.
>>
>>I'm firmly in agreement with Bill and Ian on this one.
>>
>>Roy Lewallen, W7EL

1545. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 22:19:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhgsjo61qkjld3@corp.supernews.com>
Source record: 112289

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhf4blim59e3b1@corp.supernews.com>...
>
>>>>Y'see, if you really, really want an antenna to be a kind of automobile,
>>>>you can cook up a bunch of reasons to convince yourself that it is. The
>>>>same method works for astrology and fortune telling, too.
>>>>
>>>
>>>
>>> Shall i call this a Straw man argument? Or putting words in
>>>someone's mouth?
>>
>>Feel free to call it what you want. I believe I've made as valid an
>>argument for an antenna being an automobile as you did for it being a
>>transformer, and based on the same criteria.
>>
>
>
>
> Well, if you agree that two antennas/transducers in close
> proximity will make a transformer (albeit a somewhat inefficient
> one!), then i don't think i was that far off base.

I agree.
>
>
>
>
>>The optimization of an antenna depends on many factors, only one of
>>which is the nature of the medium in which it's immersed. And among the
>>medium's important properties are its permeability, permittivity, and
>>the velocity of a wave propagating in it. The phase velocity and
>>characteristic impedance can both be calculated from the permeability
>>and permittivity, so you can't really say any one of these is more
>>important than the other.
>>
>>It doesn't make any sense to throw out the concept of free space
>>impedance just because it confuses people who don't know what it means.
>>It's an extremely useful and well-understood concept. For example,
>>reflection of a wave from a plane conductor or the ground can easily be
>>found by calculating a reflection coefficient based on the impedance of
>>the reflecting surface and the impedance of the impinging wave. (The
>>impedance of a wave can be quite different close to an antenna than it

>>is after it's traveled some distance.) If you look in some of those
>>texts I recommended, you'll find the impedance of free space cropping up
>>all over the place.
>>
>>What needs to be thrown away is the belief that all impedances are the
>>ratio of a voltage to a current, along with the notion that only
>>resistors can have resistance.
>>
>>Roy Lewallen, W7EL
>
>
>
> You have convinced me that you are correct about both of these
> points.

Good. Then the effort was worthwhile.

>
> But i don't think that an antennas impedance will not be affected
> by the permeability of the medium that surrounds it. An antennas
> input impedance will be different in free space as opposed to being
> immersed in water, for example.

Indeed it will.

>
> This indicates to me that the antenna is indeed "matching" 50
> Ohms to the impedance of free space, even if it is a different type of
> impedance.

That's a leap I'm unable to make or to follow.

> Do you think that the characteristics of a transformer of a
> specific turns ratio, gauge wire, and core geometry, will NOT depend
> on the core material? I would say definitely it WILL depend on the
> material.

Actually, an adequate core shouldn't appear as a significant factor in
transformer performance. Naturally, an inadequate core will adversely
affect it. But I just don't accept that as evidence, let alone "proof"
that an antenna is fundamentally an impedance matching device.

I see that you won't be swayed from your visualization. But hopefully
some of the other readers can see the fallacy of the concept. I think
I've done all I can, so I'll leave this topic now.

Chuckle I was just reminded of something that happened years ago, when
my son was a small boy. He learned that I was an engineer, so he
couldn't wait to see the train I drove. After a great deal of repeated,
patient, explanation, I finally got across (I thought) a description of
what I did, and that it had nothing to do with trains. Well, he had
occasion to visit me at work quite a long time later. He kept wandering
off. When I asked why, he explained that he was trying to find where the

train was kept. Yeah, I might not drive trains, but I must have *something* to do with trains.

Slick, you've got the right concepts now, but you're still looking for that train.

Roy Lewallen, W7EL

1546. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 22:57:06 UTC
From: Peter Völpel <qro1750@compuserve.de>
Message-ID: <3F187B42.F5DAC9B8@compuserve.de>
Source record: 112290
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

c schrieb:
>
> Hello All,
>
> I have comparisation information from 20 different
> Diamond antennas (verticals).
> For the bands: 50/144/430/1200Mhz.
> Compare the gain and the length.
>
> All information is to see in a nice chart!
>
> http://www.qsl.net/pd0rkc (Click on technics).
>
> 73's Cor

That table is just a lot of bullshit, those figures are completely
useless and far away from truth...
I wonder why you post this useless info into 5 newsgroups without
verifying the figures.
Are you paid by diamond?

By the way, your menu is still not visible with netscape navigator...

73
Peter,DF3KV

1547. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 23:13:34 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307181513.6ddf92d0@posting.google.com>
Source record: 112291

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<el5ghv4hgo3p8sruijni2cfju3icdg2gup@4ax.com>...
> On 18 Jul 2003 04:50:07 -0700, k7itm@aol.com (Tom Bruhns) wrote:
>
> >
> >In precision instrumentation systems, the output is commonly levelled
> >or monitored through a levelling splitter (not to be confused with a
> >power divider), so that a virtual zero-impedance point can be
> >established, with a 50-ohm (or other Zo) resistor from that point to
> >each output. And network analyzers are commonly calibrated with
> >precision loads so that the imperfections in their outputs and
> >reflectometers and cabling can be backed out by the calibration
> >software.
> >
> >Cheers,
> >Tom
>
> Hi Tom,
>
> H.W. Bode describes these characteristics through "Noise" Gain. It is
> that portion of the "Open Loop" gain (or GBWP) that is returned to the
> input.
>
> The amount of "Noise" Gain is directly responsible for the significant
> benefits (control over) of:
> Input Impedance;
> Output Impedance;
> Noise (within the system);
> Linearity (distortion);
> Phase Response;
> Gain variation;
> Stability;
> Frequency Response.

Apples and oranges? The levelling system has no direct effect on
phase response, input impedance or linearity, and in general not the
same effect on some of the others as you'll have in a linear feedback
control system.

Cheers,
Tom

1548. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 23:40:20 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F188564.E719BA75@uci.edu>
Source record: 112294

W5DXP wrote:
> The answer has been found but most people think they already know
> everything there is to know. The answer is contained in the following
> example. The sources are signal generators with circulator loads (SGCL).
> The (50) or (150) subscript is the ohmic value of the circulator load
> resistor. The signal generators are phase-locked and can be turned on
> and off independently.
>
> 100W SGCL(50)--1WL 50 ohm feedline--+--1/2WL 150 ohm feedline--33.33W SGCL(150)
> Pfwd1--> Pfwd2-->
> <--Pref1 <--Pref2
>
> Step 1: With the 100W SGCL(50) on and the 33.33W SGCL(150) off, the
> following conditions exist:
>
> Pfwd1 = 100W, Pref1 = 25W, Pfwd2 = 75W, Pref2 = 0W
>
> Step 2: Now turn on the 33.33W SGCL(150). At the instant the rearward-
> traveling signal reaches the impedance discontinuity, the following
> conditions exist at the discontinuity:
>
> Pfwd1 = 100W, Pref1 = 0W, Pfwd2 = 133.33W, Pref2 = 33.33W
>
> All anyone has to do is figure out what happened to Pref1 = 25W in
> Step 1 the instant the 33.33W arrived at the impedance discontinuity
> in Step 2. This is not a transient buildup condition. If we ignore
> any distortion in the 33.33W Pref2 wavefront, this is an immediate
> event and Pref1 is immediately canceled by an equal magnitude and
> opposite phase Pref2(1-|rho|^2) wavefront at the moment it first
> arrives.

You're sourcing and sinking an additional 33.33 watts, and yet the
wattmeter can't discern the difference between this scenario and the 100
watt, single source scenario.

The example illustrates perfectly the shortcomings of the idea of power
flow, as well as some of the faulty conclusions that can be drawn from
measurements made by a directional power meter.

73, AC6XG

1549. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 23:44:33 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfa0p1llt1@slb3.atl.mindspring.net>
Source record: 112292
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:fQPRa.89475$H17.27894@sccrnsc02...
>
>
> Dan/W4NTI wrote:
> >
> > There will be a big market is 'serious' amplifiers. BPL will be knocked
for
> > a loop so often it will be rendered useless.
> >
> > Not to mention the court cases that I HOPE will follow. We are the
LICENSED
> > service.
> >
> > Dan/W4NTI
> >
> >
> There's a much easier solution!! Have the FCC propose a rule that
> communication receivers cannot have receivers with sensitivity lower
> than 50 microvolts!
>
> If 60 dB noise levels are real an amplifier won't help me hear the weak
> ones! So, simply eliminate the ability to hear the weak ones and we will
> all be happy, NO? It's much easier to install a 60 dB pad on a receiver
> than pushing amplifiers and Long John Yagis. Hmmm ... ;-)
>
> Deacon Dave, W1MCE

Yeah that way we could all call CQ and not hear anyone.

Dan/W4NTI

>

1550. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-18 23:45:49 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfa0uphad1@slb5.atl.mindspring.net>
Source record: 112293
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

"--Bill--" <exray.is.tired@of.spam> wrote in message
news:vhfovkkbqigmcb@corp.supernews.com...
> Dave Shrader wrote:
> >
> >
> > Dan/W4NTI wrote:
> >
> >>
> >> There will be a big market is 'serious' amplifiers. BPL will be
> >> knocked for
> >> a loop so often it will be rendered useless.
> >>
> >> Not to mention the court cases that I HOPE will follow. We are the
> >> LICENSED
> >> service.
> >>
> >> Dan/W4NTI
> >>
> >>
> > There's a much easier solution!! Have the FCC propose a rule that
> > communication receivers cannot have receivers with sensitivity lower
> > than 50 microvolts!
> >
> > If 60 dB noise levels are real an amplifier won't help me hear the weak
> > ones! So, simply eliminate the ability to hear the weak ones and we will
> > all be happy, NO? It's much easier to install a 60 dB pad on a receiver
> > than pushing amplifiers and Long John Yagis. Hmmm ... ;-)
> >
> > Deacon Dave, W1MCE
> >
> Shoot, propose simultaneously that hams be allowed 50 kilowatts output.
> Not that either of these are remedies for the potential problem but
> maybe it will help the FCC understand whats going on.
> -Bill
>

IMHO the only thing that will accomplish that is to drag the FCC into court.

Dan/W4NTI

1551. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 00:21:16 UTC
From: Kim W5TIT <fahgedit@nomail.net>
Message-ID: <bfa2telsj1@adenine.netfront.net>
Source record: 112295
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Hi, Sweetie!!!!!

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f18157c$1_2@corp-news.newsgroups.com...
> Brian Kelly wrote:
> > Output suds don't mean squat. "Ya can't work 'em if ya can't hear
> > 'em." Wherein lies the whole problem.
>
> I think it is assumed that the guy on the other end would
> also have more output suds, i.e. 100W would become obsolete.
> --
> 73, Cecil, W5DXP
>

Posted via news://freenews.netfront.net
Complaints to news@netfront.net

1552. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 00:59:05 UTC
From: --Bill-- <exray.is.tired@of.spam>
Message-ID: <vhh5r7ngf6h548@corp.supernews.com>
Source record: 112296
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Dan/W4NTI wrote:

> IMHO the only thing that will accomplish that is to drag the FCC into court.
>
> Dan/W4NTI

Hey, thats a novel idea!
-Bill

1553. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 01:29:44 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vhh7q1eskr6fa7@corp.supernews.com>
Source record: 112297
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Texas just had a hurricaine, albeit a fairly normal one.
The station at DPS in Austin was severly limited due to noise in their end.
Why do I point this out?
The noise levels in citites on HF are already so high as to endanger life
and property.
BTW What ever happened to fiber optics?
H.

"--Bill--" <exray.is.tired@of.spam> wrote in message
news:vhh5r7ngf6h548@corp.supernews.com...
> Dan/W4NTI wrote:
>
> > IMHO the only thing that will accomplish that is to drag the FCC into
court.
> >
> > Dan/W4NTI
>
> Hey, thats a novel idea!
> -Bill
>

1554. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 01:50:01 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ip8hhvkotipcdt7andiusa6uui250nf2kv@4ax.com>
Source record: 112298

On Fri, 18 Jul 2003 14:56:25 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

> but people continue to make a big
>deal out of it.

Ah were would we be if it weren't for some "people?"

All the mysteries of the universe answered in the first post no doubt;
what a boring existence. ;-)

73's
Richard Clark, KB7QHC

1555. Cardioid antenna at 440 MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 01:56:04 UTC
From: George Weischadle <gweischadle@earthlink.net>
Message-ID: <Uy1Sa.10555$Mc.750578@newsread1.prod.itd.earthlink.net>
Source record: 112300

Hi all,

Can anyone tell me where to find a commercial antenna (or design for homebrew) that is compact and generates a cardioid pattern at 440 MHz? Please email me at K6GW@sattel.com.

Thanks,
George

1556. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 01:57:16 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hi8r2re.pminews@netnews.comcast.net>
Source record: 112299
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Fri, 18 Jul 2003 18:59:18 -0000, Dave Platt wrote:

>you'll spend a lot more on equipment, *and* your neighbors (BPL-using
>and otherwise) will be much more likely to experience harmful
>interference.

"Harmful interference" is a specific technical term of art in
communications regulatory law that refers to interruption to a
licensed communications service and places the responsibility to
alleviate the situation on the operation causing the problem.

Your neighbors will experince "unwanted interception" which you
have no obligation to deal with except to make a reasonable amount
of tests to enable the neighbor's repair tech to check the
effectiveness of whatever protective measures they are making to the
affected home electronic/entertainment equipment.

You, OTOH, will receive "harmful interference" from the BPL operation.

Go get 'em, tiger....

--
73 de K2ASP - Phil Kane
ARRL Volunteer Counsel

1557. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 02:01:14 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vhh9l3g8pc6i31@corp.supernews.com>
Source record: 112301
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

The Population Bomb Keeps On Ticking.....

"Phil Kane" <Phil.Kane@nov.shmovz.ka.pop> wrote in message
news:cuvyxnansvbet.hi8r2re.pminews@netnews.comcast.net...
> On Fri, 18 Jul 2003 18:59:18 -0000, Dave Platt wrote:
>
> >you'll spend a lot more on equipment, *and* your neighbors (BPL-using
> >and otherwise) will be much more likely to experience harmful
> >interference.
>
> "Harmful interference" is a specific technical term of art in
> communications regulatory law that refers to interruption to a
> licensed communications service and places the responsibility to
> alleviate the situation on the operation causing the problem.
>
> Your neighbors will experince "unwanted interception" which you
> have no obligation to deal with except to make a reasonable amount
> of tests to enable the neighbor's repair tech to check the
> effectiveness of whatever protective measures they are making to the
> affected home electronic/entertainment equipment.
>
> You, OTOH, will receive "harmful interference" from the BPL operation.
>
> Go get 'em, tiger....
>
> --
> 73 de K2ASP - Phil Kane
> ARRL Volunteer Counsel
>
>

1558. Re: How to test a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 02:20:42 UTC
From: "mkelly@powerup.com.au" <mkelly@powerup.com.au>
Message-ID: <3F18AAFA.71B4C986@powerup.com.au>
Source record: 112302

If you have an analyser, connect the outlet to 2 series 25 ohm
resistors. (27 will do). The swr should be 1:1 or near.

Then run a fly wire with clips from input shield to the center
of the 50 ohm load. ('Round the balun).
If the output is truly balanced the swr
will remain 1:1 but if it is'nt the swr will jump to 2:1

This is a test for isolation of the feed shield from the load
- good for any balun.

If you have the gear, try it.

Cheers.
Murray

David Cook wrote:
>
> Hi Group, I have a balun that I believe is fried. Silly me, I tried to load
> up my 20 meter dipole on 40 meters with my amplifier. There was a flicker on

Murray Kelly vk4aok

1559. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:22:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18ba66_7@corp.newsgroups.com>
Source record: 112303

Roy Lewallen wrote:
> Is it just my perception, or is it the fate of all threads in this
> newsgroup to end up being Cecil arguing about power waves?

Sorry Roy, when someone says reflected waves are misconceptions or
don't exist, I cannot remain silent.
--
73, Cecil http://www.qsl.net/w5dxp

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1560. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:28:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18bbde_7@corp.newsgroups.com>
Source record: 112305

Roy Lewallen wrote:
> The "transmitter" is perfectly matched to the line.

Huh? Please define "matched".
--
73, Cecil http://www.qsl.net/w5dxp

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1561. Amateur Radio Legal Issues List

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:30:43 UTC
From: n0jaa@aol.compost
Message-ID: <20030718233043.21580.00000150@mb-m07.aol.com>
Source record: 112304

Fellow Amateur Radio Operators,

I have created a new list that deals specifically with legal issues pertaining to our hobby, the Amateur Radio Legal Issues List. The list is for the dissemination and discussion of legal issues (such as PRB-1 and pending legislation in Congress) and other related issues (court battles, etc.) that can affect our hobby.

If you are interested in such a list, please send a blank email to ARLI-subscribe@topica.com.

73's,
Paul Gray, N0JAA
Moderator, Amateur Radio Legal Issues List

"We have captured lightning and used it to teach sand how to think."

1562. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:32:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18bcbd_7@corp.newsgroups.com>
Source record: 112306

Jim Kelley wrote:

> W5DXP wrote:
>
>>Point is that "maximum possible power" will cause a lot of transmitters
>>to exceed their maximum power rating and overheat.
>
> How much is the maximum possible power? H-Bomb? Gamma ray burst? Big
> Bang? ;-)

Maximum power is when you turn your metal 6L6 upside down in a glass of
water during a contest. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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1563. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:38:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18be32$1_7@corp.newsgroups.com>
Source record: 112308

Jim Kelley wrote:
> If the sig gen is putting out 100 watts, with 3 watts reflected and 97
> watts going to the load, ...

The forward power is 103 watts and the reflected power is 3 watts in
the given example. The signal generator equipped with a circulator
load is putting out 103 watts.
--
73, Cecil http://www.qsl.net/w5dxp

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1564. Re: 40 m inverted vee question?????

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:42:06 UTC
From: whagen6@cs.com
Message-ID: <20030718234206.23649.00000135@mb-m27.news.cs.com>
Source record: 112307

you have lowered the impedance of the antenna, not the resonance, and thus have a mismatch at the junction of the antenna and the feedline, which causes the swr. You can add a balun, change the impedance of the feedline, or transform it at the transmitter either with an additional piece of coax, or with a tuner.

1565. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:44:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18bfad_7@corp.newsgroups.com>
Source record: 112310

Reg Edwards wrote:

>>The feedpoint impedance of traveling wave antennas is usually about
>>600-800 ohms according to The ARRL Antenna Book.
>
> Anyway, if you have correctly quoted it, the ARRL Antenna Book is wrong,

What is the maximum Z0 possible with transmission line? Seems that would
be the feedpoint impedance of a traveling wave dipole.
--
73, Cecil http://www.qsl.net/w5dxp

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1566. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:48:09 UTC
From: --Bill-- <exray.is.tired@of.spam>
Message-ID: <vhhfo7i2k4n239@corp.supernews.com>
Source record: 112309
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

H. Adam Stevens wrote:

> BTW What ever happened to fiber optics?
> H.

An $8/hr Neanderthal with a trencher has proved that isn't the best option.

-Bill

1567. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 03:56:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18c266_7@corp.newsgroups.com>
Source record: 112311

Jim Kelley wrote:

> W5DXP wrote:
>
>>The answer has been found but most people think they already know
>>everything there is to know. The answer is contained in the following
>>example. The sources are signal generators with circulator loads (SGCL).
>>The (50) or (150) subscript is the ohmic value of the circulator load
>>resistor. The signal generators are phase-locked and can be turned on
>>and off independently.
>>
>>100W SGCL(50)--1WL 50 ohm feedline--+--1/2WL 150 ohm feedline--33.33W SGCL(150)
>> Pfwd1--> Pfwd2-->
>> <--Pref1 <--Pref2
>>
>>Step 1: With the 100W SGCL(50) on and the 33.33W SGCL(150) off, the
>>following conditions exist:
>>
>>Pfwd1 = 100W, Pref1 = 25W, Pfwd2 = 75W, Pref2 = 0W
>>
>>Step 2: Now turn on the 33.33W SGCL(150). At the instant the rearward-
>>traveling signal reaches the impedance discontinuity, the following
>>conditions exist at the discontinuity:
>>
>>Pfwd1 = 100W, Pref1 = 0W, Pfwd2 = 133.33W, Pref2 = 33.33W
>>
>>All anyone has to do is figure out what happened to Pref1 = 25W in
>>Step 1 the instant the 33.33W arrived at the impedance discontinuity
>>in Step 2. This is not a transient buildup condition. If we ignore
>>any distortion in the 33.33W Pref2 wavefront, this is an immediate
>>event and Pref1 is immediately canceled by an equal magnitude and
>>opposite phase Pref2(1-|rho|^2) wavefront at the moment it first
>>arrives.
>
> You're sourcing and sinking an additional 33.33 watts, and yet the
> wattmeter can't discern the difference between this scenario and the 100
> watt, single source scenario.

But that sourcing and sinking is occurring *INSIDE* the SGCL(150). The net
power inside SGCL(150) is 100W dissipated, *exactly* like the other scenario.

> The example illustrates perfectly the shortcomings of the idea of power
> flow, as well as some of the faulty conclusions that can be drawn from
> measurements made by a directional power meter.

The shortcoming I notice is your sidestepping of the question: What happened to Pref1=25W? It just seems to have disappeared when we turned on SGCL(150) and the 33.33W wavefront arrived at the impedance discontinuity. What could have possibly made Pref1 disappear?
--
73, Cecil http://www.qsl.net/w5dxp

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1568. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 04:01:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhhglsh5kmtl20@corp.supernews.com>
Source record: 112313

It's not clear why you'd make that assumption.

A transmission line doesn't radiate; a traveling wave antenna does. The feedpoint impedance of a traveling wave antenna is dictated by both the termination resistance and by radiation. The characteristic impedance of a transmission line isn't a function of either.

You can make a transmission line with an arbitrarily high impedance, although because of the nearly logarithmic relationship between wire diameter/spacing and Z0, values of more than a few hundred ohms (for open wire line, and considerably less for coax) become impractical. Of course, you'd have to go to very low frequencies to make use of very high Z0 transmission line, to avoid line radiation or, in the case of coax, propagation of other than TEM waves.

And, just out of curiosity, how would you construct a traveling wave dipole?

Roy Lewallen, W7EL

W5DXP wrote:
> Reg Edwards wrote:
>
>>> The feedpoint impedance of traveling wave antennas is usually about
>>> 600-800 ohms according to The ARRL Antenna Book.
>>
>>
>> Anyway, if you have correctly quoted it, the ARRL Antenna Book is wrong,
>
>
> What is the maximum Z0 possible with transmission line? Seems that would
> be the feedpoint impedance of a traveling wave dipole.

1569. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 04:02:02 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <IL6dnXeBUJRdX4WiXTWJkw@comcast.com>
Source record: 112312

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vhgrjbr7o0tc04@corp.supernews.com...
> Tarmo Tammaru wrote:
> > Roy,
> >
> > You are cheating. In the steady state there is no load on your source.
> > Regardless of what the Bird meter reads. Do one of the following:
>
> Why is this cheating? There is reverse power on the line. The source is
> not absorbing the reverse power. You and others have said, without
> qualification, that it does. I've shown a case where it doesn't.

What you have done is to put a resonant parallel tuned circuit on the output end of the 50 Ohm resistor. After 1/2 cycle of RF, the voltage on the two ends of the resistor is equal. Hence no power is delivered from the source, provided it is lossless coax.

Tell me if I am wrong, but you could put an HP oscillator and a transformer that delivers 70.7V into an open circuit in place of the 100W amp, and in the steady state you would reach the same conditions. It would just take longer. If the Bird read 100W before, it would still read 100W. Assume it is a perfect WM that does not absorb any power. If you buy the tuned circuit analogy, the WM is in effect measuring circulating current in the tuned circuit.

Here is what I think the problem with trying to understand reflected power in transmitters is. On the one hand, you have forward and reflected power in and out of a black box. On the other hand, open up the black box and measure the IMPEDANCE back towards the load. Without knowledge of reflections, we know from the Smith chart how a misterminated line is going to change the load on the collector of the transistor, and hence cause it to change its power output. So, in the impedance analysis there is no concept of absorbing reflected power.

You don't like talking about pulses, but that is the way I was taught reflections. We used "Electromagnetic Energy Transmission and Radiation" by Adler, Chu, and Fano. 1960 (gulp!)

Tam/WB2TT

1570. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 04:30:07 UTC
From: dplatt@radagast.org
Message-ID: <vhhiaf6tl9c902@corp.supernews.com>
Source record: 112314
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

In article <cuvyxnansvbet.hi8r2re.pminews@netnews.comcast.net>,
Phil Kane <Phil.Kane@nov.shmovz.ka.pop> wrote:

>>you'll spend a lot more on equipment, *and* your neighbors (BPL-using
>>and otherwise) will be much more likely to experience harmful
>>interference.
>
> "Harmful interference" is a specific technical term of art in
> communications regulatory law that refers to interruption to a
> licensed communications service and places the responsibility to
> alleviate the situation on the operation causing the problem.
>
> Your neighbors will experince "unwanted interception" which you
> have no obligation to deal with except to make a reasonable amount
> of tests to enable the neighbor's repair tech to check the
> effectiveness of whatever protective measures they are making to the
> affected home electronic/entertainment equipment.

Thanks for the clarification, Phil! I'm not sure that the neighbors
will necessarily see it that way, though :-(

> You, OTOH, will receive "harmful interference" from the BPL operation.
>
> Go get 'em, tiger....

I think this is one I'd rather help "head off at the pass" rather than
having to fight a pitched battle on the streets of the city!

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1571. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 04:34:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18cb6f_7@corp.newsgroups.com>
Source record: 112315

Roy Lewallen wrote:
> A transmission line doesn't radiate; a traveling wave antenna does.

The energy flowing in a flat transmission line goes somewhere.
The energy flowing in a traveling wave antenna goes somewhere.
Both systems are flat so they seem similar to me. A terminated
Rhombic radiates and has approximately the same feedpoint impedance
as wide spaced transmission line.

> And, just out of curiosity, how would you construct a traveling wave
> dipole?

In my head or in real life? A terminated Sloping-V comes to mind.
--
73, Cecil http://www.qsl.net/w5dxp

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1572. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 04:43:37 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f18cc96$0$960$cc9e4d1f@news.dial.pipex.com>
Source record: 112316

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:unednS2pfeKwYIqiU-KYgg@comcast.com...
> Steve,
>
> Here is something else you might want to do. I did this to a KLM50-7 which
> has a boom a bit less than 7 meters long. Took 2 pieces of 3/8 inch Al
> tubing, about 5 feet long, and flattened both ends in a vise, then bent at
> 45 degrees. Drilled holes in the flattened portion, and bolted one end of
> each to the boom, the other end to the mast through one hole, and a long
> bolt, about 3 mm. Makes the boom absolutely stable in a wind.
>
> Tam/WB2TT
>
> That's worth serious consideration as I live in a windy location. I was
thinking about using support wires clamped to the mast 2 feet above the boom
but I'll re-think it now.

Steve

1573. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 04:52:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f18cf95_7@corp.newsgroups.com>
Source record: 112317

Roy Lewallen wrote:
> Why is this cheating? There is reverse power on the line. The source is
> not absorbing the reverse power.

If "the source is not absorbing the reverse power", then the reverse power is being re-reflected to become the forward power. During steady-state, the forward power is not coming from the source so it has to be coming from a re-reflection process. It can only come from one of those two places. In a lossless line, you could disconnect the line at the source and there would still exist forward energy and reflected energy. The reflected energy would be reflected from one open end and the forward energy would be reflected from the other open end. It's essentially a super-conducting ring that has been cut and straightened out.

Make the stub one second long and you will have 200 joules stored in the line. The source will have supplied all of that 200 joules with the voltage and current in phase, i.e. it was supplied as joules/sec.
--
73, Cecil http://www.qsl.net/w5dxp

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1574. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 05:03:25 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f18d13a$0$960$cc9e4d1f@news.dial.pipex.com>
Source record: 112318

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:JyLYDJIsG6F$EA+u@ifwtech.co.uk...
> Steve wrote:
> >All I need now is the plans for the antenna but I should have those
> >soon.
>
> In about as long as it takes to go to the 'VHF/UHF Long Yagi Workshop'
> on the site below. Some other questions will be answered there too.

Been there, done that. Couldn't find the measurements for the 4 wavelength
version. I have them now though from SV5BYRs site
>
> Certainly a shorter sub-boom centred on the balance point is one good
> way to go. Another is to use quarter-inch larger square tube for the
> middle section, with the inch-square boom running right through, and
> hard aluminium shims driven into the end. Don't forget to use a larger
> boom correction for that centre section.

thanks for the advice.
It is much appreciated.
The only question I have now is probably a daft one but here goes..... the
plans for this antenna specify that the reflector should be at position 0 on
the boom and D13 should be at 8300mm relative to the position of the
reflector.. Where would one drill the hole for the reflector ? i.e how far
in from the end of the tube, and how far past the hole for the last director
would the boom actually end ?
>
>
> --
> > http://www.ifwtech.co.uk/g3sek

1575. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 05:54:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhhn8oagntde51@corp.supernews.com>
Source record: 112219

You can make up just as much power bouncing around inside the cable as you'd like. Add it, subtract it, vectorize it, Barry Sadler & Lou Adler it, store it, superimpose it, put it on the Group W bench, whatever you want. Argue about it for months, as you have been.

But you can't say the reflected power is coming out and heating up the source. It isn't.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> Why is this cheating? There is reverse power on the line. The source
>> is not absorbing the reverse power.
>
>
> If "the source is not absorbing the reverse power", then the reverse
> power is being re-reflected to become the forward power. During steady-
> state, the forward power is not coming from the source so it has to be
> coming from a re-reflection process. It can only come from one of those
> two places. In a lossless line, you could disconnect the line at the
> source and there would still exist forward energy and reflected energy.
> The reflected energy would be reflected from one open end and the forward
> energy would be reflected from the other open end. It's essentially a
> super-
> conducting ring that has been cut and straightened out.
>
> Make the stub one second long and you will have 200 joules stored in
> the line. The source will have supplied all of that 200 joules with
> the voltage and current in phase, i.e. it was supplied as joules/sec.

1576. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 06:03:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhhnqqemtpv811@corp.supernews.com>
Source record: 112220

Tarmo Tammaru wrote:
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vhgrjbr7o0tc04@corp.supernews.com...
>
>>Tarmo Tammaru wrote:
>>
>>>Roy,
>>>
>>>You are cheating. In the steady state there is no load on your source.
>>>Regardless of what the Bird meter reads. Do one of the following:
>>
>>Why is this cheating? There is reverse power on the line. The source is
>>not absorbing the reverse power. You and others have said, without
>>qualification, that it does. I've shown a case where it doesn't.
>
>
> What you have done is to put a resonant parallel tuned circuit on the output
> end of the 50 Ohm resistor. After 1/2 cycle of RF, the voltage on the two
> ends of the resistor is equal. Hence no power is delivered from the source,
> provided it is lossless coax.

You're absolutely right.

> Tell me if I am wrong, but you could put an HP oscillator and a transformer
> that delivers 70.7V into an open circuit in place of the 100W amp, and in
> the steady state you would reach the same conditions. It would just take
> longer.

I don't completely follow the HP oscillator bit, but you can change the
source resistor to any value, and get exactly the same steady state
result. As you say, the resistor value only affects how long it takes to
reach steady state.

If the Bird read 100W before, it would still read 100W. Assume it is
> a perfect WM that does not absorb any power. If you buy the tuned circuit
> analogy, the WM is in effect measuring circulating current in the tuned
> circuit.

Yep.

> Here is what I think the problem with trying to understand reflected power
> in transmitters is. On the one hand, you have forward and reflected power in
> and out of a black box. On the other hand, open up the black box and measure
> the IMPEDANCE back towards the load. Without knowledge of reflections, we
> know from the Smith chart how a misterminated line is going to change the
> load on the collector of the transistor, and hence cause it to change its

> power output. So, in the impedance analysis there is no concept of absorbing
> reflected power.

There are lots of problems with analyzing waves of average power bouncing around in a transmission line. I'm sure that every one of them has been pointed out many, many times in postings directed at Cecil.

The fact is, that whatever is going on inside the line, the "reflected power" isn't flowing out and heating up the load. My example shows that. (Again, you can find other examples in the text file on my web site if you're interested.)

>
> You don't like talking about pulses, but that is the way I was taught
> reflections. We used "Electromagnetic Energy Transmission and Radiation" by
> Adler, Chu, and Fano. 1960 (gulp!)

You betcha I like to talk about pulses. I spent several years at Tektronix as a Principal Engineer designing high-speed sampling scopes and TDR systems. I've written and taught courses on TDR, and on many occasions helped our customer support folks deal with questions they weren't able to answer.

But there are some important differences between steady state sinusoidal conditions and single pulse conditions. I mentioned one -- that in the pulse case, the source is off but not in the steady state case. That makes a big difference to what happens when that reflected pulse arrives back at the source. Don't mix the two conditions, or you'll be led badly astray.

Roy Lewallen, W7EL

1577. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 08:33:45 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <IIZ4txIpJQG$EAI2@ifwtech.co.uk>
Source record: 112224

Steve wrote:
>The only question I have now is probably a daft one but here
>goes..... the plans for this antenna specify that the reflector
>should be at position 0 on the boom and D13 should be at 8300mm
>relative to the position of the reflector.. Where would one drill the
>hole for the reflector ? i.e how far in from the end of the tube, and
>how far past the hole for the last director would the boom actually end ?

If the hole is far enough from the end that it doesn't weaken the element mounting mechanically, that also seems to be OK as regards the electrical effect of the metal boom.

It's nice to use plastic end caps (most yagi manufacturers will sell you a few) so the practical distance for the holes is just far enough so that the end cap will push in without fouling anything inside.

Or make it about pi/2 times the width of your thumb, and then trim the end cap until it fits... no worries.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1578. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 08:36:03 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <eo$9FgJzLQG$EAk7@ifwtech.co.uk>
Source record: 112225

Tarmo Tammaru wrote:
>
>Yeah, seems to be a deep dark secret. If you look at the specs of RF
>power transistors, they will give the output impedance vs frequency -
>BUT you have to look at the footnote. In virtually all cases what they
>mean is the conjugate of the load impedance.

Many years ago, in a previous lifetime of exactly this same discussion, a former engineer with an RF semiconductor manufacturer explained exactly how these figures get into the data-sheet.

Here's my recollection, which is backed up by information from 'RF Transistors' by Dye and Granberg (Motorola).

You can design a new transistor for certain performance parameters, but this isn't a cookbook thing. In the end, the applications engineer has to fire up the new device in a test jig to see what it's got.

Variable impedance-transforming networks interface the input and output of the transistor to 50R. The driver source is a high-level signal generator with a defined 50R output impedance, and there's a 50R load equipped with the usual wattmeter and spectrum analyser. There is also IR sensing of the temperatures on the chip.

The engineer then plays with the input power, input network and output network to get the best results - "best" in terms of gain, output power, efficiency and linearity (if relevant), all without coming too close to the limits of voltage, current and chip temperature which have already been derived from breakdown testing. Actually the device needs to operate some way below these absolute failure limits, because long-term reliability is also an important factor.

The applications engineer is probably going to kill lots of devices when pushing the limits, but eventually he'll find out what performance the device can safely and reliably deliver.

Note that gain, output power, efficiency and linearity are in some ways contradictory. The judgement about "best" performance comes partly from the design aims for the new device, but just as much from the engineer's own skill and judgement in adjusting the test rig to give the best possible balance between these opposing factors.

Having found the optimum settings, the measured gain, input power and output power are copied directly into the data-sheet.

The transistor is then removed and a network analyser is connected where the base/gate of the device was. With the driver source switched off but

still presenting a 50R load, the impedance at that point is measured. The conjugate of that measured impedance is the device input impedance that you see in the data-sheet.

The network analyser is then moved to where the collector/drain had been. The measured impedance is the optimum load impedance that needs to be presented TO the device.

Here's where it gets a bit messy. Some data sheets present this measured value quite clearly as "load impedance", but others present the conjugate using the misleading term "output impedance". It's easy to tell which is which, because the device is invariably capacitive, right at the collector/drain itself; so you can be sure that something involving "+jX" is the measured load impedance from the outside world, while something involving "-jX" is its conjugate (unless there's a significant internal impedance transformation inside the package).

The really misleading thing is that the output network you need is the one that would match the conjugate of the load impedance to 50R. It's then very easy to jump to the conclusion that you've "matched the output impedance of the device" - but you haven't. All you've done is to present the device with the optimum load impedance that the manufacturer has found out purely by experiment.

All this was written in terms of transistors, but much the same is done when characterizing new tubes, especially as regards the optimum output load.

Finally, note three things:

* The function of the output network is to present the optimum load impedance TO the device FROM the outside world.

* What's "optimum" is not dictated entirely by the device - it involves a lot of judgement on the part of the applications engineer. It's all done on that there bench :-)

* The output impedance of the transistor doesn't come into the story at all - not when characterizing RF power devices that are not operating in class A. Even the device manufacturer doesn't know or care what it is. Neither need we.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1579. Re: Remodeling with fluorescent lights - HF noise ahead?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 08:37:44 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <3B6Sa.83410$sY2.37888@rwcrnsc51.ops.asp.att.net>
Source record: 112221

I have a four foot two bulb flourecent in my shack. I have a random wire antenna running within 3 feet of it. No problem at all.
"John Brown" <cauchy128@yahoo.com> wrote in message news:de2635ad.0307172107.176e31c0@posting.google.com...
> It appears our remodel in our single-family home will have a number of
> fluorescent light fixtures.
>
> Does anyone out there have these in your home and experience any noise
> that bothers your 160-10 m operation?
>
> Should a new installation and new bulbs produce very little noise?
>
> I would like to hear any experiences, including any work-arounds.
>
> Regards,
> Ted, K6KIM

1580. Only 34feet: can I cover 40-10?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 08:58:26 UTC
From: Frank <laspinafranziski@virgilio.it>
Message-ID: <f51ihvsdmemtqbd6a0o9hckmdchs42an8t@4ax.com>
Source record: 112222

I can install only an inverted vee:
each side max can measure about 17 feet

I was thinking to install three diple
each over the other for 20, 15 and 10 meter
band

The problem is the 40m band

I wouldn't use any trap antenna.

Is t

--
to gli la spina x risponder mi !!!

1581. Re: Theroretical antenna question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 09:32:12 UTC
From: hawkeye <stig@telewide.se>
Message-ID: <bfb3cr$k9n$1@green.tninet.se>
Source record: 112223

"K7JEB" <k7jeb@arrl.no_spam.net> skrev i meddelandet
news:aATRa.61581$3o3.4043261@bgtnsc05-news.ops.worldnet.att.net...
>
> Paul@Rasdoc wrote:
>
> > I was implying iostropic in 3 dimensions....
> > Now for a paradox.....
> > If RX==TX as for as antenna gain
> > And 100W is 100W.... then isotropic had dBi =0 be the laws of
> > conservation of energy.....
> > No suppose we have an antenna that captures all of the energy passing
> > though a 1M square.......
> > Now make that a 10M square.....
> > Clearly a 10M "Fishing net" can capture more than a 1M net, but
> > Then RXgain != TXgain
> > So what gives where is this wrong?
>
> The only application that I have seen in which this was true
> was the so-called Rectenna - an array of low-gain dipoles,
> each of which had a diode detector at its feedpoint terminals.
> The direct-current diode outputs were summed to produce the
> "signal" which was more-or-less proportional to the area of
> the array. But the array itself had very low directivity -
> pretty much that of a single dipole element - making it
> unnecessary to beam-steer it.
>
> This was proposed as the Earthside end of a space-based power
> satellite system that would convert sunlight in geosynchronous
> orbit to microwave energy and beam it down to the rectenna. There
> it would be "detected" to DC which would then be converted to
> 60-Hertz HV sine waves for injection into the power grid.
>
> The thing that makes this work was, of course, the non-linear,
> non-coherent rectification process at each array element. And
> it only works for DC. If a higher-bandwidth modulation is
> imposed on the RF energy, a point is reached due to travel-time
> delay where the detected signal at one end of the array is out
> of phase with that detected at the opposite end. If synchronous
> detection is attempted, the highly undesireable array directivity
> is immediately restored - much to the chagrin of the system designers.
>
>
> --
> Jim Bromley, K7JEB k7jeb(at)arrl(dot)net

> Glendale, Arizona
>
>
Thats in the right direction. The original question was about energy (DC)
and this is the answer. Modulated energy is another issue, not applicable
for the original question.
--
/ME (first time, checking my signature)

1582. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 10:38:38 UTC
From: Rene <delete_rene.altena@gmx.net>
Message-ID: <bfb73a$d1n6n$1@ID-153362.news.uni-berlin.de>
Source record: 112226
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"Peter V&#65533;lpel" <qro1750@compuserve.de> schreef in bericht
news:3F187B42.F5DAC9B8@compuserve.de...
> c schrieb:
> >
> > Hello All,
> >
> > I have comparisation information from 20 different
> > Diamond antennas (verticals).
> > For the bands: 50/144/430/1200Mhz.
> > Compare the gain and the length.
> >
> > All information is to see in a nice chart!
> >
> > http://www.qsl.net/pd0rkc (Click on technics).
> >
> > 73's Cor
>
>
> That table is just a lot of bullshit, those figures are completely
> useless and far away from truth...
> I wonder why you post this useless info into 5 newsgroups without
> verifying the figures.
> Are you paid by diamond?
>
> By the way, your menu is still not visible with netscape navigator...
>
>
> 73
> Peter,DF3KV

Please explain why the table is nonsense, if you claim it is!

Please be a bit creative yourself.

And Netscape: we stopped using that about 8 years ago...

Rene

1583. Re: Only 34feet: can I cover 40-10?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 11:01:00 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfb8dc$io8$1@hercules.btinternet.com>
Source record: 112227

"Frank" wrote > I can install only an inverted vee:
> each side max can measure about 17 feet
>
==========

Make horizontal distance between ends of wire = 34 feet.

Make mast height = 31 feet.

Make ends of wire 3 feet above ground.

The apex angle will be 62 degrees.

Resonant frequency = 7.2 MHz.

Dipole feedpoint resistance = 30 ohms.

SWR on 50-ohm feedline = 1.7

Feedline length = 58 feet.

Efficiency = 37 percent.

Loss relative to a 1/2-wave dipole at a height of 100 feet = 0.7 S-units.

And there you have your 40m inverted-vee dipole.

Which can be modelled using program INV_VEE from website below.

Download INV_VEE in a few seconds and run immediately.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

1584. Re: Only 34feet: can I cover 40-10?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 11:07:10 UTC
From: Scott <acepilot@bloomer.net>
Message-ID: <3F19265E.5B0756A0@bloomer.net>
Source record: 112228

First, you woundn't need a "trap" to cover 40M. The antenna is already too short to resonate on 40M. What you need is a loading coil in each leg. If you have an antenna tuner, you will be able to use the antenna on 40M if the tuner is able to match the antenna's impedance to that of the radio. Maybe you can put up a horizontal loop for 40M...each side would measure about 35 feet, which I assume is all the room you have in any direction.

Best of luck,

Scott
N0EDV

Frank wrote:
>
> I can install only an inverted vee:
> each side max can measure about 17 feet
>
> I was thinking to install three diple
> each over the other for 20, 15 and 10 meter
> band
>
> The problem is the 40m band
>
> I wouldn't use any trap antenna.
>
> Is t
>
> --
> to gli la spina x risponder mi !!!

--

Scott
http://corbenflyer.tripod.com
http://groups.yahoo.com/group/ParasolAirplanes
Building RV-4
Gotta Fly or Gonna Die!

1585. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 11:19:17 UTC
From: Peter Völpel <qro1750@compuserve.de>
Message-ID: <3F192935.9DD7413@compuserve.de>
Source record: 112229
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Rene schrieb:

> >
> > That table is just a lot of bullshit, those figures are completely
> > useless and far away from truth...
> > I wonder why you post this useless info into 5 newsgroups without
> > verifying the figures.
> > Are you paid by diamond?
> >
> > By the way, your menu is still not visible with netscape navigator...
> >
> >
> > 73
> > Peter,DF3KV
>
> Please explain why the table is nonsense, if you claim it is!

just one example:

you see with first glance that the claimed gain figures are
much to high,
how can an antenna 30% longer than a halfwave show 3dbs of gain
and 1/4 Lambda more yields in another 1,5db more gain?

>
> Please be a bit creative yourself.

I have always been...

>
> And Netscape: we stopped using that about 8 years ago...

fine for YOU

It would be a could idea before spamming newsgroups
to test how things are showing up with all common browsers,
there are people around the world who do not use Microsoft software
on porpuse

>
> Rene

Peter

1586. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 11:27:13 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0307190327.1a8606fc@posting.google.com>
Source record: 112230
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f18157c$1_2@corp-news.newsgroups.com>...
> Brian Kelly wrote:
> > Output suds don't mean squat. "Ya can't work 'em if ya can't hear
> > 'em." Wherein lies the whole problem.
>
> I think it is assumed that the guy on the other end would
> also have more output suds, i.e. 100W would become obsolete.

All for naught in enough cases to render QRO a complete waste Cecil.
The BPL crud is hammering yer rcvr with an S9 signal. It's the bottom
of the cycle. The VK with his two gallons is 10,000 miles away and
maybe an S6 on a good day. No contact.

160m is below the BPL target spectrum so far. Break out those 160m
condo hamburger deck railing-mounted aerials and beat yer brains out
that way. Choices, choices . . .

w3rv

1587. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 12:10:08 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <3F193562.2EABC101@alma.demon.co.uk>
Source record: 112231
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

c wrote:
>
> Hello All,
...snip...
>
> All information is to see in a nice chart!
>
> http://www.qsl.net/pd0rkc (Click on technics).
>
> 73's Cor

You website doesn't work with Netscape (4.7). The menu at the left hand side does not appear.

regards...

--Gary

1588. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 12:24:44 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <gMaSa.97008$N7.12123@sccrnsc03>
Source record: 112232
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

I have been a Netscape user for almost 8 years. I refuse to use IE!!

I spent years writing HTML based web pages in HTML!! And, I always Beta tested my pages against all available browsers.

The current software for designing web sites is compliant with the Bill Gates world, but, the world is bigger than Bill Gates.

Deacon Dave, W1MCE

Peter Vï¿½lpel wrote:

> Rene schrieb:
>
>
>>>That table is just a lot of bullshit, those figures are completely
>>>useless and far away from truth...
>>>I wonder why you post this useless info into 5 newsgroups without
>>>verifying the figures.
>>>Are you paid by diamond?
>>>
>>>By the way, your menu is still not visible with netscape navigator...
>>>
>>>
>>>73
>>>Peter,DF3KV
>>
>>Please explain why the table is nonsense, if you claim it is!
>
>
> just one example:
>
> you see with first glance that the claimed gain figures are
> much to high,
> how can an antenna 30% longer than a halfwave show 3dbs of gain
> and 1/4 Lambda more yields in another 1,5db more gain?
>
>
>>Please be a bit creative yourself.
>
>
> I have always been...
>
>
>>And Netscape: we stopped using that about 8 years ago...

>
>
> fine for YOU
>
> It would be a could idea before spamming newsgroups
> to test how things are showing up with all common browsers,
> there are people around the world who do not use Microsoft software
> on porpuse
>
>
>>Rene
>
>
> Peter

1589. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 12:34:09 UTC
From: Peter Völpel <qro1750@compuserve.de>
Message-ID: <3F193AC1.73362147@compuserve.de>
Source record: 112233
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Dave Shrader wrote:
>
> I have been a Netscape user for almost 8 years. I refuse to use IE!!
>
> I spent years writing HTML based web pages in HTML!! And, I always Beta
> tested my pages against all available browsers.
>
> The current software for designing web sites is compliant with the Bill
> Gates world, but, the world is bigger than Bill Gates.
>
> Deacon Dave, W1MCE

Right Dave,

And that page failed the W3C makeup validation
just from the beginning...

Peter,DF3KV

1590. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 12:53:03 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f193f5b$0$11382$cc9e4d1f@news.dial.pipex.com>
Source record: 112234

> It's nice to use plastic end caps (most yagi manufacturers will sell you
> a few) so the practical distance for the holes is just far enough so
> that the end cap will push in without fouling anything inside.
>
> Or make it about pi/2 times the width of your thumb, and then trim the
> end cap until it fits... no worries.
>
>
> --
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
> http://www.ifwtech.co.uk/g3sek

Lovely. Thanks Ian.

Steve

1591. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 13:26:05 UTC
From: Fluxuated <Fluxuated@XHotmail.com>
Message-ID: <NFbSa.1842$PJF1.166@news01.bloor.is.net.cable.rogers.com>
Source record: 112235
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Well you may want to get a new browser, Netscape Laid off about half it's people last week.

"Dave Shrader" <david.shrader@comcast.net> wrote in message news:gMaSa.97008$N7.12123@sccrnsc03...
> I have been a Netscape user for almost 8 years. I refuse to use IE!!
>
> I spent years writing HTML based web pages in HTML!! And, I always Beta
> tested my pages against all available browsers.
>
> The current software for designing web sites is compliant with the Bill
> Gates world, but, the world is bigger than Bill Gates.
>
> Deacon Dave, W1MCE
>
> Peter V�lpel wrote:
>
> > Rene schrieb:
> >
> >
> >>>That table is just a lot of bullshit, those figures are completely
> >>>useless and far away from truth...
> >>>I wonder why you post this useless info into 5 newsgroups without
> >>>verifying the figures.
> >>>Are you paid by diamond?
> >>>
> >>>By the way, your menu is still not visible with netscape navigator...
> >>>
> >>>
> >>>73
> >>>Peter,DF3KV
> >>
> >>Please explain why the table is nonsense, if you claim it is!
> >
> >
> > just one example:
> >
> > you see with first glance that the claimed gain figures are
> > much to high,
> > how can an antenna 30% longer than a halfwave show 3dbs of gain
> > and 1/4 Lambda more yields in another 1,5db more gain?
> >
> >

> >>Please be a bit creative yourself.
> >
> >
> > I have always been...
> >
> >
> >>And Netscape: we stopped using that about 8 years ago...
> >
> >
> > fine for YOU
> >
> > It would be a could idea before spamming newsgroups
> > to test how things are showing up with all common browsers,
> > there are people around the world who do not use Microsoft software
> > on porpuse
> >
> >
> >>Rene
> >
> >
> > Peter
>

1592. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 13:28:56 UTC
From: Rene <delete_rene.altena@gmx.net>
Message-ID: <bfbh2l$daa3a$1@ID-153362.news.uni-berlin.de>
Source record: 112236
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"Peter V&#65533;lpel" <qro1750@compuserve.de> schreef in bericht
news:3F193AC1.73362147@compuserve.de...
> Dave Shrader wrote:
> >
> > I have been a Netscape user for almost 8 years. I refuse to use IE!!
> >
> > I spent years writing HTML based web pages in HTML!! And, I always Beta
> > tested my pages against all available browsers.
> >
> > The current software for designing web sites is compliant with the Bill
> > Gates world, but, the world is bigger than Bill Gates.
> >
> > Deacon Dave, W1MCE
>
>
> Right Dave,
>
> And that page failed the W3C makeup validation
> just from the beginning...

```
As do all Compuserve pages, hi!

Rene
```

1593. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 13:29:59 UTC
From: Rene <delete_rene.altena@gmx.net>
Message-ID: <bfbh4k$ct2u7$1@ID-153362.news.uni-berlin.de>
Source record: 112237
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"Peter V&#65533;lpel" <qro1750@compuserve.de> schreef in bericht
news:3F192935.9DD7413@compuserve.de...
> Rene schrieb:
>
> >
> > And Netscape: we stopped using that about 8 years ago...
>
> fine for YOU
>
> It would be a could idea before spamming newsgroups
> to test how things are showing up with all common browsers,
> there are people around the world who do not use Microsoft software
> on porpuse
>

Yes. I know that. It has a nice religious feel around it, bashing Microsoft.

Rene

1594. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 13:32:33 UTC
From: Steve KA4TMB <steven.heydeNO@SPAMcomcast.net>
Message-ID: <hKydnZICW67s1YSiXTWJhA@comcast.com>
Source record: 112238
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:gMaSa.97008$N7.12123@sccrnsc03...
> I have been a Netscape user for almost 8 years. I refuse to use IE!!

Dave, the context of "I refuse", is nothing more than an attitude adjustment problem.
;-)

> I spent years writing HTML based web pages in HTML!! And, I always Beta
> tested my pages against all available browsers.

I've written HTML-based web pages also. And of course I always Beta test my pages as well. However "all available browsers" includes only two: NS and IE. My final tests always come out correct when testing with IE. Usually there is some little quirk with NS. That is the reason for the statement at the bottom of the page, "This site best viewed with Internet Explorer", and includes a graphic link to MS if you want to download the IE browser.

You can view the web pages with NS if you want, but the "disclaimer" is there for a reason. The guidelines that govern what nomenclature is used to make up HTML code has some differences between NS and IE. Until both companies agree on the same actual code, there will always be problems - unless you know *both* variants of HTML programming.

> The current software for designing web sites is compliant with the Bill
> Gates world, but, the world is bigger than Bill Gates.

Yes, it is. But not by much :-)

> Deacon Dave, W1MCE

Ordained Minister Steve, KA4TMB

1595. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 13:39:32 UTC
From: Rene <delete_rene.altena@gmx.net>
Message-ID: <bfbhmg$d7cvq$1@ID-153362.news.uni-berlin.de>
Source record: 112239
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"Steve KA4TMB" <steven.heydeNO@SPAMcomcast.net> schreef in bericht
news:hKydnZICW67s1YSiXTWJhA@comcast.com...
>
> "Dave Shrader" <david.shrader@comcast.net> wrote in message
> news:gMaSa.97008$N7.12123@sccrnsc03...
> > I have been a Netscape user for almost 8 years. I refuse to use IE!!
>
> Dave, the context of "I refuse", is nothing more than an attitude
adjustment problem.
> ;-)
>
> > I spent years writing HTML based web pages in HTML!! And, I always Beta
> > tested my pages against all available browsers.
>
> I've written HTML-based web pages also. And of course I always Beta test
my pages as
> well. However "all available browsers" includes only two: NS and IE. My
final
> tests always come out correct when testing with IE. Usually there is some
little
> quirk with NS. That is the reason for the statement at the bottom of the
page, "This
> site best viewed with Internet Explorer", and includes a graphic link to
MS if you
> want to download the IE browser.
>
> You can view the web pages with NS if you want, but the "disclaimer" is
there for a
> reason. The guidelines that govern what nomenclature is used to make up
HTML code
> has some differences between NS and IE. Until both companies agree on the
same
> actual code, there will always be problems - unless you know *both*
variants of HTML
> programming.
>
> > The current software for designing web sites is compliant with the Bill
> > Gates world, but, the world is bigger than Bill Gates.
>
> Yes, it is. But not by much :-)
>
> > Deacon Dave, W1MCE
>

> Ordained Minister Steve, KA4TMB

Really Ordained, or jus because I wrote Microsoft bashing has (for some people) a nice religious feeling?

Rene
>
>

1596. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 13:51:19 UTC
From: "/\\/\\R /\\/\\" <mr.m@ntlworld.com>
Message-ID: <u1cSa.969$Ai3.191@newsfep4-winn.server.ntli.net>
Source record: 112240
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Gary Morton wrote:
> c wrote:
>>
>> Hello All,
> ...snip...
>>
>> All information is to see in a nice chart!
>>
>> http://www.qsl.net/pd0rkc (Click on technics).
>>
>> 73's Cor
>
> You website doesn't work with Netscape (4.7). The menu at the left
> hand side does not appear.
>
> regards...
>
> --Gary

Why are you using Netscape 4.7 when Netscape 7.0 is available (with all the plugins) on the net for FREE???

1597. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 13:56:02 UTC
From: Steve KA4TMB <steven.heydeNO@SPAMcomcast.net>
Message-ID: <rB2cndmiT_ps0ISiXTWJgA@comcast.com>
Source record: 112241
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"Rene" <delete_rene.altena@gmx.net> wrote in message
news:bfbhmg$d7cvq$1@ID-153362.news.uni-berlin.de...
>
> "Steve KA4TMB" <steven.heydeNO@SPAMcomcast.net> schreef in bericht
> news:hKydnZICW67s1YSiXTWJhA@comcast.com...
> >
> >
> > Ordained Minister Steve, KA4TMB
>
> Really Ordained, or jus because I wrote Microsoft bashing has (for some
> people) a nice religious feeling?
>
> Rene

Ordained, really. But trust me, I have done enough Microsoft bashing (complaining?) in my time. Ever since MS-DOS 1.0 came out.

I just couldn't resist Deacon Dave's signature. :-) I normally never use my "title" on the Internet or on the air (ham radio). I'm just...

Steve

1598. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:01:55 UTC
From: Rene <delete_rene.altena@gmx.net>
Message-ID: <bfbj0f$d5550$1@ID-153362.news.uni-berlin.de>
Source record: 112242
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"Steve KA4TMB" <steven.heydeNO@SPAMcomcast.net> schreef in bericht
news:rB2cndmiT_ps0ISiXTWJgA@comcast.com...
>
> "Rene" <delete_rene.altena@gmx.net> wrote in message
> news:bfbhmg$d7cvq$1@ID-153362.news.uni-berlin.de...
> >
> > "Steve KA4TMB" <steven.heydeNO@SPAMcomcast.net> schreef in bericht
> > news:hKydnZICW67s1YSiXTWJhA@comcast.com...
> > >
> > >
> > > Ordained Minister Steve, KA4TMB
> >
> > Really Ordained, or jus because I wrote Microsoft bashing has (for some
> > people) a nice religious feeling?
> >
> > Rene
>
> Ordained, really. But trust me, I have done enough Microsoft bashing
(complaining?)
> in my time. Ever since MS-DOS 1.0 came out.
>
> I just couldn't resist Deacon Dave's signature. :-) I normally never use
my "title"
> on the Internet or on the air (ham radio). I'm just...
>
> Steve
>
>

Yes. I don't use any title too. I am an elder in our church and a MSc.

Bye,

Rene PD1ALD

1599. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:17:19 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <3F1952EF.9060901@mwci-news>
Source record: 112243

Ian White, G3SEK wrote:
>
>
> * The output impedance of the transistor doesn't come into the story at
> all - not when characterizing RF power devices that are not operating in
> class A. Even the device manufacturer doesn't know or care what it is.
> Neither need we.
>
>

Tubes and transistor power amplifiers quite oftem
use negative feedback to improve SSB linearity.
Improvements of 5 to 10 dB are common. The
negative feedback reduces the internal impedance
of the tube and transistor amplifiers. The
tube/transistor data sheets do not consider this
factor.

Again, we usually don't really know or care much
about the values of the internal impedances.

But there is a special case. Voice/music/data tube
transmitters operating at low frequencies have a
problem called "sideband clipping" where the plate
tank selectivity may be too sharp and reduces the
modulation bandwidth. The internal impedance tends
to broaden the response at resonance. When
designing the tank circuit this effect may have to
be included.

Bill W0IYH

1600. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:18:04 UTC
From: Dilon Earl <dilon_earl@mail.com>
Message-ID: <i6kihvk45ednh226m4cfpef6mbb0lri0q2@4ax.com>
Source record: 112244

On Fri, 18 Jul 2003 22:32:13 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>
>Maximum power is when you turn your metal 6L6 upside down in a glass of
>water during a contest. :-)

What I have learned so far:

If you have a 100 watt transmitter, the watt meter shows 3 watts
reflected. I deliver 103 watts to the antenna. I now know where the
reflected power go's. But where did it come from? If I could find a
way to have 100 watts reflected I could put 200 watts to the antenna
from a 100 watt transmitter.

If my transmitter has an output impedance of 50 ohms, all the
reflected power will be absorbed by my PA. I need to find a way to
change my output impedance to something other than 50 ohms?

If I could make my SB-401 act like a radar transmitter, and time the
pulses correctly, I could cancel out the reflected power pulses.

For some reason I need a circulator on my SB-401.

To get max power out my 6146's I need to turn them upside down in a
glass of water? :-)

1601. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:23:08 UTC
From: c <no@spam.com>
Message-ID: <3f195440$0$45380$1b62eedf@news.wanadoo.nl>
Source record: 112245
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Hello Peter,

I saw again your negative comments.

Renember my diamond info is based on dBi,
2,15 less and you get dbd.

Do you think diamond want to risk there name to
put some false gain numbers on the antenna?

If a antenne does not do what it is expect to do
we can claim the money back.
Do you realy think diamond would take that risk?

Why do you think diamond has verry expensive
measure equipment?

Im wondering were your homepage is, I asume
everything must be perfect on your homepage.
So maybe you done a lot of work too (like i did),
so there might be some intresting info? (let us know!).
I saw it wasn't ready on qsl.net server.

Cor

"Peter V�lpel" <qro1750@compuserve.de> schreef in bericht
news:3F187B42.F5DAC9B8@compuserve.de...
> c schrieb:
> >
> > Hello All,
> >
> > I have comparisation information from 20 different
> > Diamond antennas (verticals).
> > For the bands: 50/144/430/1200Mhz.
> > Compare the gain and the length.
> >
> > All information is to see in a nice chart!
> >
> > http://www.qsl.net/pd0rkc (Click on technics).
> >
> > 73's Cor
>
>
> That table is just a lot of bullshit, those figures are completely
> useless and far away from truth...

> I wonder why you post this useless info into 5 newsgroups without
> verifying the figures.
> Are you paid by diamond?
>
> By the way, your menu is still not visible with netscape navigator...
>
>
> 73
> Peter,DF3KV

1602. Re: 6/2/70/23 netscape!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:29:39 UTC
From: c <no@spam.com>
Message-ID: <3f1955c6$0$45390$1b62eedf@news.wanadoo.nl>
Source record: 112246
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Hello All,

Sorry for the netscape users.
I used netscape browser many years back, Im glad
with the microsoft browser.
Netscape gave me some problems with some
goverment page's (wich microsoft ie doesn't).
Netscape does not know all the html code's like
the fixed function in the background sentence (and
many more).

These fixed command is verry famous in the
internet world.

But do not worrie netscape comes with updates
they are always a littlebit later than microsoft!

Cor

1603. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:30:08 UTC
From: Ekki Plicht <df4or@web.de>
Message-ID: <bfbo3v$n41$07$1@news.t-online.com>
Source record: 112253
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

c wrote:

[...]
> All information is to see in a nice chart!
>
> http://www.[bla]

Your website doesn't work with Konqueror 3.1.1.

73,
Ekki, DF4OR

1604. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:42:18 UTC
From: Peter Völpel <qro1750@compuserve.de>
Message-ID: <3F1958CA.941E02@compuserve.de>
Source record: 112247
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

c schrieb:
>
> Hello Peter,
>
> I saw again your negative comments.
>
> Renember my diamond info is based on dBi,
> 2,15 less and you get dbd.

well,
if there are dbi figures one some (two) antennas
one must assume the others are not

>
> Do you think diamond want to risk there name to
> put some false gain numbers on the antenna?

yes, because most people are not able to
measure ist or to simulate with NEC

>
> If a antenne does not do what it is expect to do
> we can claim the money back.
> Do you realy think diamond would take that risk?

as above

>
> Why do you think diamond has verry expensive
> measure equipment?

have they?

>
> Im wondering were your homepage is, I asume
> everything must be perfect on your homepage.
> So maybe you done a lot of work too (like i did),
> so there might be some intresting info? (let us know!).
> I saw it wasn't ready on qsl.net server.

I have no homepage and do not need one for my ego,
but I told you already, if somebody advertises his in newsgroups
as spam, he should make shure it is readable not only with IE.
Usually it is enough to make shure, search engines as Google
collect that stuff.

73
Peter,DF3KV

1605. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:51:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f195bdc_3@corp.newsgroups.com>
Source record: 112248

Roy Lewallen wrote:

> You can make up just as much power bouncing around inside the cable as
> you'd like. Add it, subtract it, vectorize it, Barry Sadler & Lou Adler
> it, store it, superimpose it, put it on the Group W bench, whatever you
> want. Argue about it for months, as you have been.
>
> But you can't say the reflected power is coming out and heating up the
> source. It isn't.

I didn't say it is, Roy. I said one of two things has to happen - either
the reflected energy flows into the source or it doesn't. If it doesn't,
it is obviously re-reflected. If the source is not furnishing the forward
energy, then the re-reflected energy must furnish the forward energy. There
is no logical problem. The Bird wattmeter is reading the forward and reflected
joules flowing past a point in one second. That energy is really there. If
you make the stub one second long, the stub contains 200 joules of energy
that cannot stand still. The standing waves prove that the forward-traveling
energy wave is 100 watts and the reflected-traveling energy wave is 100 watts.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1606. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 14:54:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f195ca2_3@corp.newsgroups.com>
Source record: 112249

Roy Lewallen wrote:
> There are lots of problems with analyzing waves of average power
> bouncing around in a transmission line. I'm sure that every one of them
> has been pointed out many, many times in postings directed at Cecil.

And none of them are a problem to explain. If there's energy in a
system and it's not presently coming from the source, then it
exists as forward and reflected wave energy that previously came
from the source (in a single source system). All you need to do
to figure everything out is keep track of all the energy.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1607. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 15:04:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f195ef7$1_3@corp.newsgroups.com>
Source record: 112250
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

```
/\/\R /\/\ wrote:
> Why are you using Netscape 4.7 when Netscape 7.0 is available (with all the
> plugins) on the net for FREE???

Netscape 7.1 is now available. Includes pop-up control.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----
```

1608. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 15:11:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1960aa_3@corp.newsgroups.com>
Source record: 112251

Dilon Earl wrote:
> If you have a 100 watt transmitter, the watt meter shows 3 watts
> reflected. I deliver 103 watts to the antenna. I now know where the
> reflected power go's. But where did it come from? If I could find a
> way to have 100 watts reflected I could put 200 watts to the antenna
> from a 100 watt transmitter.

The key word is "to", not "accepted by". You can indeed get 200 watts
to (incident upon) the antenna with a 100 watt transmitter. Trouble
is, the antenna only accepts half of that power.

> For some reason I need a circulator on my SB-401.

Only if you allow reflected energy to reach your SB-401.

> To get max power out my 6146's I need to turn them upside down in a
> glass of water? :-)

Only if they are metal.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1609. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 15:21:58 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bfbn6fvq1@news.service.uci.edu>
Source record: 112252

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f18c266_7@corp.newsgroups.com...
> Jim Kelley wrote:
> > You're sourcing and sinking an additional 33.33 watts, and yet the
> > wattmeter can't discern the difference between this scenario and the 100
> > watt, single source scenario.
>
> But that sourcing and sinking is occurring *INSIDE* the SGCL(150). The net
> power inside SGCL(150) is 100W dissipated, *exactly* like the other
scenario.

Exactly like the other scenario, yeah, like the extra .033 Kw makes no
difference. That's a good one, Cecil :-)

> > The example illustrates perfectly the shortcomings of the idea of power
> > flow, as well as some of the faulty conclusions that can be drawn from
> > measurements made by a directional power meter.

> The shortcoming I notice is your sidestepping of the question:

More notable are the shortcomings you _don't_ care to notice.

>What happened
> to Pref1=25W? It just seems to have disappeared when we turned on
SGCL(150)
> and the 33.33W wavefront arrived at the impedance discontinuity. What
could
> have possibly made Pref1 disappear?

Hmmmm, never thought about that before. Could wave cancellation be
involved?

73, Jim AC6XG

1610. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 16:02:10 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <+8z1A3BCuWG$EAh9@ifwtech.co.uk>
Source record: 112173

William E. Sabin wrote:
>Ian White, G3SEK wrote:
>> * The output impedance of the transistor doesn't come into the
>>story at all - not when characterizing RF power devices that are not
>>operating in class A. Even the device manufacturer doesn't know or
>>care what it is. Neither need we.
>>
>
>Tubes and transistor power amplifiers quite oftem use negative feedback
>to improve SSB linearity. Improvements of 5 to 10 dB are common. The
>negative feedback reduces the internal impedance of the tube and
>transistor amplifiers. The tube/transistor data sheets do not consider
>this factor.
>
>Again, we usually don't really know or care much about the values of
>the internal impedances.
>
Agreed.

>But there is a special case. Voice/music/data tube transmitters
>operating at low frequencies have a problem called "sideband clipping"
>where the plate tank selectivity may be too sharp and reduces the
>modulation bandwidth. The internal impedance tends to broaden the
>response at resonance. When designing the tank circuit this effect may
>have to be included.

Thanks for that information. A related topic would be the effect of
tank circuit Q on the bandwidth of HF amplifiers; I seem to remember
reading something about, but don't recall what it implied about the
magnitude of the tube internal impedance, as compared with the load
impedance.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1611. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 16:04:54 UTC
From: "Heiner-P.Landsberg" <waeschesteif@comundo.de>
Message-ID: <bfbqvarjs07$1@news.t-online.com>
Source record: 112256
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

mensch Meier,
da hat jemand mit einem Beitrag, den man einfach wegclicken konnte fasst
genau soviel Beisser und Beller wachgemacht, wie Nils.
Heiner,
der ganz schnell in den Keller muss, da ist ne Schï¿½ppe umgefallen (Top1).

1612. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 16:05:01 UTC
From: Peter Völpel <qro1750@compuserve.de>
Message-ID: <3F196C2D.90EE7A1D@compuserve.de>
Source record: 112255
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

W5DXP wrote:

> Netscape 7.1 is now available. Includes pop-up control.
> --
> 73, Cecil http://www.qsl.net/w5dxp

Interesting,
but it does not run with Windows 3.11...

Peter,DF3KV

1613. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 16:05:43 UTC
From: Peter Völpel <qro1750@compuserve.de>
Message-ID: <3F196C57.12AF9DD0@compuserve.de>
Source record: 112254
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

W5DXP wrote:

> Netscape 7.1 is now available. Includes pop-up control.
> --
> 73, Cecil http://www.qsl.net/w5dxp

Interesting,
but it does not run with Windows 3.11...

Peter,DF3KV

1614. Re: BV02-4 2m yagi -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 16:30:09 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <PZydnfBkGrWK74SiXTWJhw@comcast.com>
Source record: 112257

"Steve" <steve6690@hotmail.com> wrote in message
news:3f18d13a$0$960$cc9e4d1f@news.dial.pipex.com...
> The only question I have now is probably a daft one but here goes.......
the
> plans for this antenna specify that the reflector should be at position 0
on
> the boom and D13 should be at 8300mm relative to the position of the
> reflector.. Where would one drill the hole for the reflector ? i.e how far
> in from the end of the tube, and how far past the hole for the last
director
> would the boom actually end ?

There is a mechanical engineering standard on that. The issue came up re the A310 design after the NY crash where the tail tore off . I believe the standard is 2 hole diameters. I looked at my VHF beams, and they are about 25mm.

Tam/WB2TT

1615. Re: Remodeling with fluorescent lights - HF noise ahead?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 16:39:00 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <%teSa.98118$N7.12236@sccrnsc03>
Source record: 112258

I have a four foot two bulb flourecent in my shack. I have a random wire antenna running within 3 feet of it. No problem at all.
"John Brown" <cauchy128@yahoo.com> wrote in message news:de2635ad.0307172107.176e31c0@posting.google.com...
> It appears our remodel in our single-family home will have a number of
> fluorescent light fixtures.
>
> Does anyone out there have these in your home and experience any noise
> that bothers your 160-10 m operation?
>
> Should a new installation and new bulbs produce very little noise?
>
> I would like to hear any experiences, including any work-arounds.
>
> Regards,
> Ted, K6KIM

1616. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 16:52:07 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <i4CdndYYfLKg6oSiXTWJhw@comcast.com>
Source record: 112259

Ian,

Thanks for the lowdown. I am saving the message. I looked through the Moto RF book last night and noticed some specs spell out by what they mean by output impedance (conjugate of load), while others don't. Newer ones seem to qualify it. Since the efficiency of these devices is usually around 50%, you can't tell which is which by looking at the numbers.

I have designed several 6m amplifiers by choosing the parallel load resistance based solely on VCC and desired PO, and it always worked.

Tam/WB2TT

1617. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 17:05:07 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <YKWcnVrhYbPV54SiXTWJkA@comcast.com>
Source record: 112260

Roy,

I think I have the complete solution to your 70.7V generator and 1/2 wave line, but with a finite load. Part of it implies that you are correct. Part of it seem weird, even though the numbers add up. I analyzed it both as a circuit element and as a transmission line problem. Kind of long, but I'll post it if you want to see it.

Tam/WB2TT
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vhhnqqemtpv811@corp.supernews.com...
> There are lots of problems with analyzing waves of average power
> bouncing around in a transmission line. I'm sure that every one of them
> has been pointed out many, many times in postings directed at Cecil.

1618. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 17:07:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f197bd5_2@corp.newsgroups.com>
Source record: 112261

Jim Kelley wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> Exactly like the other scenario, yeah, like the extra .033 Kw makes no
> difference. That's a good one, Cecil :-)

In the first scenario, the 0.033 Kw was loaded into the system before
steady-state conditions were established. The s-parameter equations
consider the power reflected from a mismatched load as another source
of power in the system. The two scenarios are very similar.

But forget the first scenario. What happens to Pref1 in this scenario?
It takes a 25 joules/sec wave to cancel a 25 joules/sec wave.

Vfwd1(rho) = 35.36V at zero degrees, Ifwd1(rho) = 0.707A at 180 degrees.

Vref2(tau) = 35.36V at 180 degrees, Iref2(tau) = 0.707A at zero degrees.

Each of these rearward-traveling waves contains |35.36V*0.707A| = 25 joules/sec

They superpose to zero. What happens to that 50 joules/sec of rearward-
traveling energy? We already know it winds up in a forward-traveling wave
toward the load. You have already admitted that wave cancellation is
responsible for Pref1 being zero. Waves simply cannot exist without energy.
When waves cease to exist, they are forced to give up their intrinsic energy.
We know that Vref2(tau) is traveling rearward. That's all we need to know.
Vref2(tau) is the same voltage term as s12*a2 in the s-parameter equation.

When b1=0=s11*a1+s12*a2, what happens to |s11*a1|^2 and |s12*a2|^2? We
know that s11*a1 and s12*a2 are rearward-traveling voltages.
--
73, Cecil http://www.qsl.net/w5dxp

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1619. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 17:09:31 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f197c4b$1_2@corp.newsgroups.com>
Source record: 112262
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Peter Vï¿½lpel wrote:

> W5DXP wrote:
>>Netscape 7.1 is now available. Includes pop-up control.

> Interesting,
> but it does not run with Windows 3.11...

It also doesn't run with DOS 1.0 :-)
--
73, Cecil http://www.qsl.net/w5dxp

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1620. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 17:18:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f197e57$1_2@corp.newsgroups.com>
Source record: 112263

Richard Harrison wrote:
> "Create a reflected wave near the load that is equal in magnitude but
> opposite in phase from the wave reflected by the load; in this way the
> two reflected waves cancel each other."

Unfortunately, he didn't say what happens to the intrinsic energy
necessary for those two canceled waves to have existed in the first
place. The question is: At the moment that two waves are canceled,
do they give up their intrinsic energy components? Or, as in the sour
grapes tale, were they never associated with any intrinsic energy to
begin with?
--
73, Cecil http://www.qsl.net/w5dxp

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1621. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 17:21:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f197f35$1_2@corp.newsgroups.com>
Source record: 112264

Tarmo Tammaru wrote:
> Thanks for the lowdown. I am saving the message. I looked through the Moto
> RF book last night and noticed some specs spell out by what they mean by
> output impedance (conjugate of load), ...

Hmmmmm, the load is in control of the amp's load line. Hmmmmm ...
--
73, Cecil http://www.qsl.net/w5dxp

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1622. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 17:47:18 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <GufSa.86528$sY2.39148@rwcrnsc51.ops.asp.att.net>
Source record: 112265

Now this is what I call a highly detailed answer.
"snarf" <snarf@hotmail.com> wrote in message
news:P5ARa.5404$C71.4060@fe01.atl2.webusenet.com...
> It is incorrect.
>
> Snarf
>
> >
> >
>
>
>

1623. Hustler 6btv Vertical Tech Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 18:29:18 UTC
From: Gary Boyer <gboyer@columbus.rr.com>
Message-ID: <26gSa.4407$R46.2485@fe3.columbus.rr.com>
Source record: 112266

I can not get the reson. freq. in the band..for example..everything is low in frequency:

10 Meters center freq. 27.262 MHz.
15 Meters " " 20.895 MHz.
20 Meters " " 14.653 MHz.

The Vertical is ground mounted with radials.....,manufact. spacing cannot be adjusted any further...I used a mfj ant. analyzes. to measure the reson. freq,..anyone else had this problem..if so, how did you fix it...any suggestions would be most appreciated...tnx.....Gary..K8BY

1624. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 18:41:25 UTC
From: "Dan, danl, danny boy, Redbeard, actually Greybeard now" <danlx@execpc.com>
Message-ID: <qv3jhvk63rk26apcm0cqo7g352jummebo7@4ax.com>
Source record: 112267

On Sat, 19 Jul 2003 13:26:05 GMT, "Fluxuated" <Fluxuated@XHotmail.com>
sent into the ether:

>Well you may want to get a new browser, Netscape Laid off about half it's
>people last week.

People that write web pages for IE only are not right in the head.
And no amount of sane conversation will cure them.

I am just happy to see government and institutional use of MS products
around the world dropping off.

A non MS user, whenever possible.
>
>"Dave Shrader" <david.shrader@comcast.net> wrote in message
>news:gMaSa.97008$N7.12123@sccrnsc03...
>> I have been a Netscape user for almost 8 years. I refuse to use IE!!
>>
>> I spent years writing HTML based web pages in HTML!! And, I always Beta
>> tested my pages against all available browsers.
>>
>> The current software for designing web sites is compliant with the Bill
>> Gates world, but, the world is bigger than Bill Gates.
>>
>> Deacon Dave, W1MCE
>>
>> Peter Vï¿½lpel wrote:
>>
>> > Rene schrieb:
>> >
>> >
>> >>>That table is just a lot of bullshit, those figures are completely
>> >>>useless and far away from truth...
>> >>>I wonder why you post this useless info into 5 newsgroups without
>> >>>verifying the figures.
>> >>>Are you paid by diamond?
>> >>>
>> >>>By the way, your menu is still not visible with netscape navigator...
>> >>>
>> >>>
>> >>>73
>> >>>Peter,DF3KV
>> >>
>> >>Please explain why the table is nonsense, if you claim it is!
>> >

>> >
>> > just one example:
>> >
>> > you see with first glance that the claimed gain figures are
>> > much to high,
>> > how can an antenna 30% longer than a halfwave show 3dbs of gain
>> > and 1/4 Lambda more yields in another 1,5db more gain?
>> >
>> >
>> >>Please be a bit creative yourself.
>> >
>> >
>> > I have always been...
>> >
>> >
>> >>And Netscape: we stopped using that about 8 years ago...
>> >
>> >
>> > fine for YOU
>> >
>> > It would be a could idea before spamming newsgroups
>> > to test how things are showing up with all common browsers,
>> > there are people around the world who do not use Microsoft software
>> > on porpuse
>> >
>> >
>> >>Rene
>> >
>> >
>> > Peter
>>
>

Dan, N9JBF
Amateur radio - What a hobby!
Remove left x for direct reply

1625. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 19:08:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhj5p0rinme17f@corp.supernews.com>
Source record: 112268

No need, I've done both transient and steady state sinusoidal solutions
for the general case many times. The source impedance dissipation and
power supplied by the source can be entirely determined simply by
replacing the transmission line and terminating impedance with an
impedance equal to that seen looking into the input end of the line. It
becomes a simple, three-component electrical circuit. You can replace
the transmission line and load with any combination of length, Z0, and
load impedance you'd like, as long as the input impedance is the same,
creating just about any amount of "reflected power" you want, without
changing the source dissipation.

The "reflected power" is not dissipated in the source, matched or not.
It's trivial to show that this is true. But people still want to believe.

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> Roy,
>
> I think I have the complete solution to your 70.7V generator and 1/2 wave
> line, but with a finite load. Part of it implies that you are correct. Part
> of it seem weird, even though the numbers add up. I analyzed it both as a
> circuit element and as a transmission line problem. Kind of long, but I'll
> post it if you want to see it.
>
> Tam/WB2TT
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vhhnqqemtpv811@corp.supernews.com...
>
>>There are lots of problems with analyzing waves of average power
>>bouncing around in a transmission line. I'm sure that every one of them
>>has been pointed out many, many times in postings directed at Cecil.
>
>
>

1626. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 19:57:38 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307191157.39390dc9@posting.google.com>
Source record: 112169

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhgsjo61qkjld3@corp.supernews.com>...
> >>
> >>What needs to be thrown away is the belief that all impedances are the
> >>ratio of a voltage to a current, along with the notion that only
> >>resistors can have resistance.
> >>
> >>Roy Lewallen, W7EL
> >
> >
> >
> > You have convinced me that you are correct about both of these
> > points.
>
> Good. Then the effort was worthwhile.
>

Absolutely.

> >
> > But i don't think that an antennas impedance will not be affected
> > by the permeability of the medium that surrounds it. An antennas
> > input impedance will be different in free space as opposed to being
> > immersed in water, for example.
>
> Indeed it will.
>
> >
> > This indicates to me that the antenna is indeed "matching" 50
> > Ohms to the impedance of free space, even if it is a different type of
> > impedance.
>
> That's a leap I'm unable to make or to follow.
>

Clearly, neither of us are PhDs in EM wave propagation, but water
certainly has a different E versus H impedance than the 377 Ohms of
free-space, which is why the input impedance of the antenna will
change. This is not the same, but similar to how the load on the
secondary will affect the primary impedance of a transformer.

> > Do you think that the characteristics of a transformer of a
> > specific turns ratio, gauge wire, and core geometry, will NOT depend
> > on the core material? I would say definitely it WILL depend on the
> > material.
>

> Actually, an adequate core shouldn't appear as a significant factor in
> transformer performance. Naturally, an inadequate core will adversely
> affect it. But I just don't accept that as evidence, let alone "proof"
> that an antenna is fundamentally an impedance matching device.
>

Well, you've already agreed that an antenna/transducer can be
considered one half of a transformer, but what i'm saying is that the
permeability of the core or medium will certainly affect the impedance
of the transducer.

What do you mean by "adequate core"? One that suits your purpose
i suppose. But a material of the wrong permeability will definitely
affect your transformer performance. So the impedance of the core
definitely affects the transformer characteristics, as does the
impedance of the air (or water) between two antennas.

> I see that you won't be swayed from your visualization. But hopefully
> some of the other readers can see the fallacy of the concept. I think
> I've done all I can, so I'll leave this topic now.
>

You've convinced me that antennas are transducers, which are one
half of a transformer, by giving me logical statements.

But you have not come up with anything to convince me otherwise
on this point, which i don't believe is a fallacy at this time.

> *Chuckle* I was just reminded of something that happened years ago, when
> my son was a small boy. He learned that I was an engineer, so he
> couldn't wait to see the train I drove. After a great deal of repeated,
> patient, explanation, I finally got across (I thought) a description of
> what I did, and that it had nothing to do with trains. Well, he had
> occasion to visit me at work quite a long time later. He kept wandering
> off. When I asked why, he explained that he was trying to find where the
> train was kept. Yeah, I might not drive trains, but I must have
> *something* to do with trains.
>

I'm not a small boy Roy, and I'm an engineer too. Your NG
inspired sarcasm doesn't change my opinion at all, and cannot even be
compared to logical reasoning.

Roy, thanks for your insight, and you have definitely helped me
out with your strict semantics (sometimes needed, especially in the
engineering world!).

But your need to be always right closes your mind to new ideas
and new learning. This is the sign of someone who claims to know
everything about a subject, which i personally believe to be
impossible, even for such a specialized topic as antennas (actually,
it's quite broad, isn't it?), and even for someone as bright and
knowledgable as you are.

Again, much thanks for your input.

Dr. Slick

1627. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 20:06:41 UTC
From: Dilon Earl <dilon_earl@mail.com>
Message-ID: <bm8jhv4q23ndcjav0v4bjk3uo6r3hb7385@4ax.com>
Source record: 112170

On Sat, 19 Jul 2003 10:11:36 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Dilon Earl wrote:
>> If you have a 100 watt transmitter, the watt meter shows 3 watts
>> reflected. I deliver 103 watts to the antenna. I now know where the
>> reflected power go's. But where did it come from? If I could find a
>> way to have 100 watts reflected I could put 200 watts to the antenna
>> from a 100 watt transmitter.
>
>The key word is "to", not "accepted by". You can indeed get 200 watts
>to (incident upon) the antenna with a 100 watt transmitter. Trouble
>is, the antenna only accepts half of that power.
>

Where does the other 100 watts go?

>> For some reason I need a circulator on my SB-401.
>
>Only if you allow reflected energy to reach your SB-401.

How can I stop it from reaching my SB-401?

Then all ham transmitters should have a circulator?

1628. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 20:19:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f19a8ee$1_3@corp.newsgroups.com>
Source record: 112171

Roy Lewallen wrote:
> The "reflected power" is not dissipated in the source, matched or not.

If reflected energy could not cause over-current/over-voltage
problems in the source there would be no need for protection
circuitry. I once burned up a pair of ARC-5 1625's because my
feedline came unsoldered at the antenna. If there had not been
any reflected power, it would not have happened.
--
73, Cecil http://www.qsl.net/w5dxp

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1629. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 20:25:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f19aa4c$1_3@corp.newsgroups.com>
Source record: 112172

Dilon Earl wrote:
>>You can indeed get 200 watts
>>to (incident upon) the antenna with a 100 watt transmitter. Trouble
>>is, the antenna only accepts half of that power.
>>
> Where does the other 100 watts go?

It is reflected back toward the source. It causes standing waves
and additional losses in the transmission line.

>>>For some reason I need a circulator on my SB-401.
>>
>>Only if you allow reflected energy to reach your SB-401.
>
> How can I stop it from reaching my SB-401?

Does the SB-401 have an adjustable Pi-net output? If so,
you can adjust it for a Zg-match which will keep reflected
energy from being incident upon the SB-401 amp. If not, you
can use an external antenna tuner.
--
73, Cecil http://www.qsl.net/w5dxp

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1630. Re: Hustler 6BTV Vertical - Tech Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 21:08:13 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <1riSa.86602$OZ2.17398@rwcrnsc54>
Source record: 112174

"Gary Boyer" <gboyer@columbus.rr.com> wrote in message
news:26gSa.4407$R46.2485@fe3.columbus.rr.com...
> I can not get the reson. freq. in the band..for example..everything is low
> in frequency:
>
> 10 Meters center freq. 27.262 MHz.
> 15 Meters " " 20.895 MHz.
> 20 Meters " " 14.653 MHz.
>
> The Vertical is ground mounted with radials.....,manufact. spacing cannot
be
> adjusted any further...I used a mfj ant. analyzes. to measure the reson.
> freq,..anyone else had this problem..if so, how did you fix it...any
> suggestions would be most appreciated...tnx.....Gary..K8BY

Gary -

According to the data you provided:

10 and 15 meters -- length is "too long"

20 meters - length is "too short"

[Remember that physical length and electrical length are different values
with this antenna -- because of the usage of traps]
http://www.new-tronics.com/main/html/base_hf_6_band.html

I would suggest reading K5RWK's column in "The Chawed Rag" newsletter
on installing the Hustler 6BTV vertical

Here is that web link:
http://www.k5rwk.org/CR200211.pdf

Greg
w9gb

1631. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 21:16:01 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <HBnrP6BRUbG$EA1c@ifwtech.co.uk>
Source record: 112176

W5DXP wrote:
>Tarmo Tammaru wrote:
>> Thanks for the lowdown. I am saving the message. I looked through the Moto
>> RF book last night and noticed some specs spell out by what they mean by
>> output impedance (conjugate of load), ...
>
>Hmmmmm, the load is in control of the amp's load line.

In part, of course it is.

The standing bias controls one fixed point on the line.

The load, transformed backward through the output matching network,
controls the slope of the line.

Finally, the drive power controls how far the instantaneous operating
point moves along the line.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1632. Stick Antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 22:01:47 UTC
From: Tom - KS5X <ks5x@cox.net>
Message-ID: <adjSa.10300$Bp2.3446@fed1read07>
Source record: 112175

4 Antennas--Pro Am sticks PHF-17 & PHF-30 (cost $18.95+); Lakeview Ham sticks 9120 & 9140 (cost $23.75+); also includes 4 sets of QDs. All AS NEW, never mobile, no longer live in restricted community. Make reasonable offer! Phoenix area ks5x@cox.net

1633. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 22:15:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f19c410_1@corp.newsgroups.com>
Source record: 112177

Ian White, G3SEK wrote:
> The load, transformed backward through the output matching network,
> controls the slope of the line.

Which is a V/I ratio - which is an impedance. Could this be the impedance
"seen" by the reflected waves transformed through the output matching network?
--
73, Cecil http://www.qsl.net/w5dxp

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1634. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 22:25:36 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <AzjSa.100030$N7.12982@sccrnsc03>
Source record: 112178
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Gee! I wonder if that's because I just downloaded Netscape 7.1??

BTW: it works great!

Deacon Dave, W1MCE

Fluxuated wrote:

> Well you may want to get a new browser, Netscape Laid off about half it's
> people last week.
>
> "Dave Shrader" <david.shrader@comcast.net> wrote in message
> news:gMaSa.97008$N7.12123@sccrnsc03...
>
>>I have been a Netscape user for almost 8 years. I refuse to use IE!!
>>
>>I spent years writing HTML based web pages in HTML!! And, I always Beta
>>tested my pages against all available browsers.
>>
>>The current software for designing web sites is compliant with the Bill
>>Gates world, but, the world is bigger than Bill Gates.
>>
>>Deacon Dave, W1MCE
>>
>>Peter Vï¿½lpel wrote:
>>
>>
>>>Rene schrieb:
>>>
>>>
>>>
>>>>That table is just a lot of bullshit, those figures are completely
>>>>useless and far away from truth...
>>>>I wonder why you post this useless info into 5 newsgroups without
>>>>verifying the figures.
>>>>Are you paid by diamond?
>>>>
>>>>By the way, your menu is still not visible with netscape navigator...
>>>>
>>>>
>>>>73
>>>>Peter,DF3KV
>>>>
>>>>Please explain why the table is nonsense, if you claim it is!

>>>
>>>
>>>just one example:
>>>
>>>you see with first glance that the claimed gain figures are
>>>much to high,
>>>how can an antenna 30% longer than a halfwave show 3dbs of gain
>>>and 1/4 Lambda more yields in another 1,5db more gain?
>>>
>>>
>>>
>>>>Please be a bit creative yourself.
>>>
>>>
>>>I have always been...
>>>
>>>
>>>
>>>>And Netscape: we stopped using that about 8 years ago...
>>>
>>>
>>>fine for YOU
>>>
>>>It would be a could idea before spamming newsgroups
>>>to test how things are showing up with all common browsers,
>>>there are people around the world who do not use Microsoft software
>>>on porpuse
>>>
>>>
>>>
>>>>Rene
>>>
>>>
>>>Peter
>>
>
>

1635. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:07:14 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfciv0$2kn$1@slb0.atl.mindspring.net>
Source record: 112179
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Most due to crappy power lines and insulators. Now add BPL with wideband
digital signals and you have a notion of how it will sound.

I have been working with Alabama power for almost 5 years now. Including
the ARRL and the FCC on their ass. And its still not fixed. Wait till
BPL is deployed.

Dan/W4NTI

"H. Adam Stevens" <solo@totalaccess.net> wrote in message
news:vhh7q1eskr6fa7@corp.supernews.com...
> Texas just had a hurricaine, albeit a fairly normal one.
> The station at DPS in Austin was severly limited due to noise in their
end.
> Why do I point this out?
> The noise levels in citites on HF are already so high as to endanger life
> and property.
> BTW What ever happened to fiber optics?
> H.
>
> "--Bill--" <exray.is.tired@of.spam> wrote in message
> news:vhh5r7ngf6h548@corp.supernews.com...
> > Dan/W4NTI wrote:
> >
> > > IMHO the only thing that will accomplish that is to drag the FCC into
> court.
> > >
> > > Dan/W4NTI
> >
> > Hey, thats a novel idea!
> > -Bill
> >
>
>

1636. AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:14:42 UTC
From: Dave Pitzer <dpitzer@sonic.net>
Message-ID: <ChkSa.3291$dk4.155901@typhoon.sonic.net>
Source record: 112180

I'm going up on my roof later this week to repair and paint my chimney. I'd like to take the opportunity to at least start an a.m. broadcast band antenna (long wire??) using my chimney as the anchor for one end.

What kind of wire shoulds I buy?. Alumimum, copper? What gauge? What can I use for insulators. What's a good way to ground it?

I have lots of trees in both the front and back yards for the "other" end. Given this flexibility, about how long should the wire be. Would the wire ideally be parallel with the (flat) terrain of the yard?

Directionality: Assuming most of the a.m. station I want to DX are in the general direction of southeast of my house, should I run the wire SE - NW or NE-SW.

Downlead to receiver??? (receiver has external antenna input -- ground and "hot".)

Is there a Web-site I could/should investigate or a more appropriate news-group?

Many thanks,

Dave Pitzer
Pocono Lake, PA
==========

1637. Re: Hustler 6btv Vertical Tech Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:20:12 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfcjna$a25$1@slb2.atl.mindspring.net>
Source record: 112181

"Gary Boyer" <gboyer@columbus.rr.com> wrote in message
news:26gSa.4407$R46.2485@fe3.columbus.rr.com...
> I can not get the reson. freq. in the band..for example..everything is low
> in frequency:
>
> 10 Meters center freq. 27.262 MHz.
> 15 Meters " " 20.895 MHz.
> 20 Meters " " 14.653 MHz.
>
> The Vertical is ground mounted with radials.....,manufact. spacing cannot
be
> adjusted any further...I used a mfj ant. analyzes. to measure the reson.
> freq,..anyone else had this problem..if so, how did you fix it...any
> suggestions would be most appreciated...tnx.....Gary..K8BY
>
>

The older MFJ don't work well with trap antennas check your documentation on
that one.

Im trying to remember. I think the Hustler says to adjust from the highest
band first. Its been a long time since I had one.

Dan/W4NTI

1638. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:28:34 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Or-cnUHZh8m0SYSiU-KYgg@comcast.com>
Source record: 112182

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f197f35$1_2@corp.newsgroups.com...
>
> Hmmmmm, the load is in control of the amp's load line. Hmmmmm ...
> --
> 73, Cecil http://www.qsl.net/w5dxp
Cecil,

You seem amused. Actually, this is the procedure given in several Motorola application notes, including AN282A. It is the real part of the parallel equivalent load. Interestingly, I recently ran across a design procedure for an 813 tube amplifier where they went through a long convoluted process to come up with a load resistance. Using the Moto formula, I got precisely their number in one step.

Tam/WB2TT

1639. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:37:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f19d758_8@corp.newsgroups.com>
Source record: 112184

Tarmo Tammaru wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>
>>Hmmmmm, the load is in control of the amp's load line. Hmmmmm ...
>
> You seem amused. Actually, this is the procedure given in several Motorola
> application notes, including AN282A.

Yes, I know the obvious is sometimes amusing. What is amusing to me is
the endless arguments over the internal impedance of an RF amplifier
when the load is in control of the amp's load line.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1640. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:40:45 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfcktv$di310$1@ID-134747.news.uni-berlin.de>
Source record: 112183

A one quarter wave length wire, pretty much the minimum size for a tuned antenna, is 235 feet long in the middle of the am broadcast band. Ideally this wire would be at least 1/2 wave, or 470 feet, in the air. In order to become directional a log-wire needs to be multiple wave lengths long, I would guess directivity we become noticeable at 5 wave lengths. That translates to 20 times the above dimension, or 4,700 feet.

That said put as much wire as you can, as high in the air as you can get it. It will be an improvement over what you have now. You might also consider building a "shielded loop", especially if you want directivity. This is an indoor antenna, generally made from coaxial cable, and because of it's properties your apparent reception will be greatly improved.

--
73 es cul

wb3fup
a Salty Bear

"Dave Pitzer" <dpitzer@sonic.net> wrote in message news:ChkSa.3291$dk4.155901@typhoon.sonic.net...
> I'm going up on my roof later this week to repair and paint my chimney. I'd
> like to take the opportunity to at least start an a.m. broadcast band
> antenna (long wire??) using my chimney as the anchor for one end.
>
> What kind of wire shoulds I buy?. Alumimum, copper? What gauge? What can I
> use for insulators. What's a good way to ground it?
>
> I have lots of trees in both the front and back yards for the "other" end.
> Given this flexibility, about how long should the wire be. Would the wire
> ideally be parallel with the (flat) terrain of the yard?

>
> Directionality: Assuming most of the a.m.
station I want to DX are in the
> general direction of southeast of my house,
should I run the wire SE - NW or
> NE-SW.
>
> Downlead to receiver??? (receiver has external
antenna input -- ground and
> "hot".)
>
> Is there a Web-site I could/should investigate
or a more appropriate
> news-group?
>
> Many thanks,
>
> Dave Pitzer
> Pocono Lake, PA
> ====================
>
>
>

1641. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:57:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <lv-dna8MRb56R4SiXTWJiw@comcast.com>
Source record: 112185

The stuff I did point to the actual impedance, not the SWR that does the bad thing. For instance, a load of 25 Ohms greatly increases the internal dissipation; a load of 100 Ohms greatly reduces it. If you go too high with the impedance, you start to saturate the hell out of the device, and other things happen.

Did you melt the plates on the 1625s or burn out the grids? Your feedline might have opened an odd multiple of 1/4 wave from the radio.

Tam/WB2TT
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f19a8ee$1_3@corp.newsgroups.com...
> Roy Lewallen wrote:
> > The "reflected power" is not dissipated in the source, matched or not.
>
> If reflected energy could not cause over-current/over-voltage
> problems in the source there would be no need for protection
> circuitry. I once burned up a pair of ARC-5 1625's because my
> feedline came unsoldered at the antenna. If there had not been
> any reflected power, it would not have happened.
> --
> 73, Cecil http://www.qsl.net/w5dxp

1642. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-19 23:58:22 UTC
From: jder8745@aol.com
Message-ID: <20030719195822.08314.00000266@mb-m20.aol.com>
Source record: 112186

Units of force do not include Watts.

Units of force are such things as Newtons, dynes, poundals, pounds, etc.

Jack (who exerts a force of many pounds on this chair)

73

1643. Re: Hustler 6btv Vertical Tech Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 00:01:23 UTC
From: valk1apa@aol.com
Message-ID: <20030719200123.18517.00000160@mb-m18.aol.com>
Source record: 112187

Gary,
Go to their web page and e-mail Newtronics with a question. I have found them very helpful on technical questions.
Val K1APA

1644. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 00:04:16 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87vftyawsf.fld@barrow.com>
Source record: 112188

"WB3FUP \(Mike Hall\)" <wb3fup@msn.com> wrote:
>A one quarter wave length wire, pretty much the
>minimum size for a tuned antenna, is 235 feet long
>in the middle of the am broadcast band. Ideally
>this wire would be at least 1/2 wave, or 470 feet,
>in the air. In order to become directional a
>log-wire needs to be multiple wave lengths long, I
>would guess directivity we become noticeable at 5
>wave lengths. That translates to 20 times the
>above dimension, or 4,700 feet.
>
>That said put as much wire as you can, as high in
>the air as you can get it. It will be an
>improvement over what you have now. You might
>also consider building a "shielded loop",
>especially if you want directivity. This is an
>indoor antenna, generally made from coaxial cable,
>and because of it's properties your apparent
>reception will be greatly improved.
>
>--
>73 es cul
>wb3fup
>a Salty Bear

That is all true, but missed the *most* important thing: DON'T
use the chimney as one support for a wire antenna.

In particular not if the other end is tied to a tree!

The reason is because chimneys are not designed to handle any
significant horizontal loading, and putting almost any real
length of wire up is going to stress the chimney and damage it.
Worse yet would be anchoring the opposite end to a tree that
will sway in the wind, and more than likely damage the chimney
during the first wind of any significance!

Note also that as mentioned above, the height above ground is so
low, and the length so short, compared to the wavelength of the
signals of interest, it doesn't really make a lot of difference
just how high that one end is. If it is tied to the house at an
appropriate point, or use some other support, the fact that it
could be 5 or 10 feet higher just is not important.

>
>"Dave Pitzer" <dpitzer@sonic.net> wrote:

>> I'm going up on my roof later this week to repair and paint my chimney. I'd
>> like to take the opportunity to at least start an a.m. broadcast band
>> antenna (long wire??) using my chimney as the anchor for one end.
>>
>> What kind of wire shoulds I buy?. Alumimum, copper? What gauge? What can I
>> use for insulators. What's a good way to ground it?
>>
>> I have lots of trees in both the front and back yards for the "other" end.
>> Given this flexibility, about how long should the wire be. Would the wire
>> ideally be parallel with the (flat) terrain of the yard?
>>
>> Directionality: Assuming most of the a.m. station I want to DX are in the
>> general direction of southeast of my house, should I run the wire SE - NW or
>> NE-SW.
>>
>> Downlead to receiver??? (receiver has external antenna input -- ground and
>> "hot".)
>>
>> Is there a Web-site I could/should investigate or a more appropriate
>> news-group?
>>
>> Many thanks,
>>
>> Dave Pitzer
>> Pocono Lake, PA
>> ====================

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

1645. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 00:21:43 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <rglSa.88612$wk6.24318@rwcrnsc52.ops.asp.att.net>
Source record: 112189

"Dave Pitzer" <dpitzer@sonic.net> wrote in message
news:ChkSa.3291$dk4.155901@typhoon.sonic.net...
> I'm going up on my roof later this week to repair and paint my chimney.
I'd
> like to take the opportunity to at least start an a.m. broadcast band
> antenna (long wire??) using my chimney as the anchor for one end.
>
> What kind of wire shoulds I buy?. Alumimum, copper? What gauge? What can I
> use for insulators. What's a good way to ground it?
>
> I have lots of trees in both the front and back yards for the "other" end.
> Given this flexibility, about how long should the wire be. Would the wire
> ideally be parallel with the (flat) terrain of the yard?
>
> Directionality: Assuming most of the a.m. station I want to DX are in the
> general direction of southeast of my house, should I run the wire SE - NW
or
> NE-SW.
>
> Downlead to receiver??? (receiver has external antenna input -- ground and
> "hot".)
>
> Is there a Web-site I could/should investigate or a more appropriate
> news-group?

Dave -

There are many web sites on the Internet for Short Wave Listening (SWL) and
also at least a couple magazines - such as Bob Grove's Monitoring Times.
http://www.monitoringtimes.com

Universal Radio is a very good store that specializes in products for the
SWL as well
as the amateur radio hobbyist.
http://www.k7on.com/scan-swl/swl/

First, SAFETY is paramount in your antenna installation.
http://www.universal-radio.com/catalog/sw_ant/safeswl.html

For antenna building I always suggest to beginners that they learn by
looking at
commercial products (especially the ones that work well)
http://www.universal-radio.com/catalog/sw_ant/2205.html

http://www.alphadeltacom.com/pg7.htm

http://www.odxa.on.ca/beginnersguide/swhear.html

For AM broadcast (SWL) antennas, I have used everything from 20 gauge speaker wire
to 14 gauge electrical wire (with choice of insulation color) used in electrical conduit [not Romex]
http://www3.damien.edu/students/mskim/shortwave.html#Anchor5

A good ground rod is very useful for a proper installation.

Greg
w9gb

1646. Can't stand it any longer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 01:24:07 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfcqvnnmi1@sparta.btinternet.com>
Source record: 112190

The haggling, for years, about congugate matching, SWR, forward & reflected power, silly virtuallty, etc, has gone on long enough.

Only G3SEK, amongst the small minority of the radio population who contribute to these walls, has a grasp of what it's all about. There are obviously others who are too busy to waste their time on newsgroups.

But who am I to judge?

INTERNAL IMPEDANCE OF RF POWER AMPLIFIERS

Programs TRIODE1 and TETRODE1 assist with the classical design of tube (valve) power amplifiers. They are very closely related to each other. A key design feature, the cathode current operating angle, is an input parameter.

Apart from the drive and input-circuits, they also apply to their lower power transistor equivalents.

For the benefit of those who may insist on knowing, these two programs are based on the clssical theoretical analysis by americans Everitt, 1932 (who was probably not original at that relatively late stage of the thermionic tube). He was followed by Terman in a more practical but more uncertain manner in the 1940's. No doubt there have been others. None of them, aware of their weaknesses, would have wished to be worshipped as little tin Gods.

The basics havn't changed since Ohm, Ampere, Voltaire and Heaviside.

Anyone responding to an enquirer, who feels in need of extra support in his reply, who refers back to the ancients merely displays his inability to provide a logical explanation and a lack of underlying understanding. There's nothing wrong, of course, in a lack of understanding except in propagating it. (Most enquirers do not have the ancient books or easy access to the books anyway)

Neither of this pair of programs require a congugate match between internal impedance and the load. There's nothing magical about 50 ohms. It could be any value as any appropriately designed SWR meter will assume. I have a 75-ohm model. All is based on assumptions. The only absolute value is SWR itself which does not depend on Zo or Z load but merely on their ratio.

The only way to determine dynamic internal impedance of a PA is to calculate it AFTER THE AMPLIFIER HAS BEEN COMPLETELY DESIGNED. It is then too late to have any effect on design.

Just to satisfy curiosity the dynamic internal resistance of an amplifier is a calculated output quantity of program TETRODE1. It is of course of no practical value. In the program it is referred to as the Source Resistance when looking back into the 50-ohm output socket.

```
----
=======================
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
=======================
```

1647. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 02:49:10 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F1A0326.5696DFAB@cwis.net>
Source record: 112192

Dave,
The wire should be large enough to support it's own weight
plus a little bit more. The 'best' kind of wire to use is
whatever you have the most of. Mixing sizes of wire certainly
won't hurt anything either.
The antenna should be as long as you can conveniently afford,
both in price and in 'realestate'. Longer is better. Unless
you have a lot of realestate, your antenna isn't going to be
very
directional so pick the 'easiest' direction to put it up
consistant
with keeping the 'significant other' happy (and the neighbors).
Since you are going up on the roof to fix your chimney, I
think
I'd find another place to hang one end of your antenna.
Chimneys
are not as strong as people think (especially one that's been
fixed).
Depending on how 'whippy' the other end is (tree?), you may be
re-fixing your chimney soon.
'Doc

1648. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 03:01:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1a0704$1_8@corp.newsgroups.com>
Source record: 112193

Tarmo Tammaru wrote:
> Did you melt the plates on the 1625s or burn out the grids?

Melted the plates and smoked the parasitic suppressors. I don't
know how long the feedline was.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1649. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 03:58:05 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f1a1a39_3@news1.prserv.net>
Source record: 112194

Dave:
I quickly scanned the responses to this point, and no one gave you the correct guidance. In this present day environment, if you are interested in BCB DXing, forget electric field (wire) antennas. Too much noise. Unless you live in the middle of the desert, and are willing to forgo modern conveniences, all an outside wire at BCB will give you is more noise. Start looking into shielded loops. Lots of information on the 'net about them. Up to about 3 MHz, they will outperform wire antennas hands down anywhere except "clean" government receive sites. And, even there, shielded loops are the antenna of choice for BCB intercept, and lower frequencies. See, for example "Hermes Loops" on TCI's web page. I forget who else makes them, but the government buys lots of them.

Now, if you are interested in Short Wave reception, that's another matter. But pitfalls lurk there also.

--
Crazy George
Remove NO and SPAM from return address
"Dave Pitzer" <dpitzer@sonic.net> wrote in message
news:ChkSa.3291$dk4.155901@typhoon.sonic.net...
> I'm going up on my roof later this week to repair and paint my chimney.
I'd
> like to take the opportunity to at least start an a.m. broadcast band
> antenna (long wire??) using my chimney as the anchor for one end.
>
> What kind of wire shoulds I buy?. Alumimum, copper? What gauge? What can I
> use for insulators. What's a good way to ground it?
>
> I have lots of trees in both the front and back yards for the "other" end.
> Given this flexibility, about how long should the wire be. Would the wire
> ideally be parallel with the (flat) terrain of the yard?
>
> Directionality: Assuming most of the a.m. station I want to DX are in the
> general direction of southeast of my house, should I run the wire SE - NW
or
> NE-SW.
>
> Downlead to receiver??? (receiver has external antenna input -- ground and
> "hot".)
>
> Is there a Web-site I could/should investigate or a more appropriate
> news-group?
>
> Many thanks,

>
> Dave Pitzer
> Pocono Lake, PA
> ====================
>
>
>

1650. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 06:11:30 UTC
From: Jim Richardson <warlock@eskimo.com>
Message-ID: <idopu-46f.ln1@grendel.myth>
Source record: 112195

On Sat, 19 Jul 2003 16:30:08 +0200,
Ekki Plicht <df4or@web.de> wrote:
> c wrote:
>
> [...]
>> All information is to see in a nice chart!
>>
>> http://www.[bla]
>
> Your website doesn't work with Konqueror 3.1.1.
>

It works fine here with Konqueror 3.1.2

poorly designed site, but the world is full of those.

--
Jim Richardson http://www.eskimo.com/~warlock

Linux, because eventually, you grow up enough to be trusted with a fork()

1651. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 06:47:13 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <d5PtBsDxrjG$EAUh@ifwtech.co.uk>
Source record: 112202

W5DXP wrote:
>Roy Lewallen wrote:
>> The "reflected power" is not dissipated in the source, matched or
>>not.
>
>If reflected energy could not cause over-current/over-voltage
>problems in the source there would be no need for protection
>circuitry. I once burned up a pair of ARC-5 1625's because my
>feedline came unsoldered at the antenna. If there had not been
>any reflected power, it would not have happened.

Transmitters are damaged *only* by excessive heat dissipation, voltage or current, all caused by the wrong value of load impedance. Reflections don't come into it.

Think what would have happened if you had measured the impedance at the TX end of your o/c transmission line (very high or very low, depending on the length) and replaced it with a resistor and inductor/capacitor giving the same value of R +/- jX.

There's no transmission line, so no traveling waves of anything, and no reflections - just a transmitter with a very wrong value of load impedance. The 1625s would have burned up just the same.

And please don't tell me there would be reflections inside the tank circuit... if you do, I'll take the tank circuit away too, and connect a wrong load impedance (the output load, now transformed through the tank) directly to the anodes!

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1652. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 06:47:49 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <j4myRKEVsjG$EAyA@ifwtech.co.uk>
Source record: 112203

W5DXP wrote:
>Ian White, G3SEK wrote:
>> The load, transformed backward through the output matching network,
>>controls the slope of the line.
>
>Which is a V/I ratio - which is an impedance. Could this be the impedance
>"seen" by the reflected waves transformed through the output matching network?

Specifically, precisely NOT... as apparently you well know (except in
the special case of class A).

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1653. The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 07:21:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ssakhvc8k5a04kum6fj17th6k4gjkg7nh9@4ax.com>
Source record: 112196

>Actually, several people (W8JI among them) have measured the output
>impedance of common amateur linear amplifiers by at least a couple of
>methods. The most credible measurements show, interestingly, a value
>very close to 50 ohms when the amplifier is adjusted for normal operation.

[sotto voce] "and yet it moves" - updated to

>Of course, it doesn't really matter, but people continue to make a big
>deal out of it.
>
>Roy Lewallen, W7EL
>

Hi All,

As offered in other postings, I challenged for some to differentiate
between themselves as Equipment Operators, Bench Techs, and
Cut-And-Paste Theoreticians. The "oomph" we all got from that
response was, as I also offered, the uncomfortable groan of avoiding
serious testing to instead indulge in eternal debates, the offering of
puzzles, and the recitation of dead white men's work.

So it follows that I am as responsible as others to differentiate
myself to the standards I set - it takes some time, but is not
seriously difficult. The quality of that differentiation is clearly
in the opprobrium above which maintains "it doesn't really matter" and
I can accept that, again, by my own terms of
"Does it make more than 1dB difference?"
which is more a quantitative test than the philosophical, qualitative
assertion that got us here.

The difference lies in a particular Engineering Note offered in the
1960's by Hewlett Packard: "Microwave Mismatch Analysis, Application
Note 56."

This note in turn references the work adopted by the National Bureau
of Standards published in IEEE Transactions of Microwave Theory and
Techniques, Vol. MTT-11, no. 3, May 1963, p. 179, by R.W. Beatty.

These references were then expanded in book form "Microwave Theory and
Applications," Stephen F. Adam, Prentice-Hall, 1969.

I took my training in the only school of Metrology in the US in 1972
and took these works to heart, by far and away not because they were
so much academic (even though they qualify in spades beyond all lesser
discussion), but because they were written for real engineers employed
in real measure employing real tools.

So much for Hubris, my own or others.

The simple fact of the matter is that if accuracy is not your cup of tea, you wouldn't have read this far anyway. If you are concerned with accuracy, and by that I mean making valid measurements of RF power, then the Z of your source is exceedingly important in the face of a mismatched load.

To wit I offer a simple verification of this observation and the works enumerated above.

1. Take one Ham transmitter capable of supporting 5 to 10W into any load without its ALC engaging and altering the power (this simplifies matters but is not strictly necessary).

2. Obtain four 50 Ohm loads each capable of supporting that same 5 to 10W power without causing any of those loads to change Z (this is NOT as simple as it may seem, but is not that difficult if you don't take it for granted). Power will never be applied for more than 10 seconds in any case during readings (or as long as it takes for your transmitter to settle to a stable power).

3. Obtain a Wattmeter capable of reading both forward and reverse power, where 5W is full scale deflection for the forward and reverse power.

4. You will need an assortment of cables and T connectors (choose your own connector style suitable for the frequency that you can support these methods to be described, following).

5. Confirm ALL loads do not exhibit a reverse power reading for full power (that same 5 to 10W) applied to them, one at a time, through each and every cable.

5a. For the purposes of my demonstration, I employed a device of my own design that I call my BVT, a Binary Variable Transmission line. It contains an assortment of coaxial lines arranged such that they can be inserted, inline, in 1 foot increments, for 0 through 32 feet. If this sounds familiar, it was the subject of my very first posting to this group some 8 years ago.

6. Apply one of those 50 Ohm loads in parallel, directly across the transmitter output. Use a T connector to allow another line to be connected in parallel as well. This port will be called the "Plane of the Source."

7. Combine the remaining (3) 50 Ohm loads in parallel using two T connectors such that one port remains open to accept a line to be connected in parallel as well. This port will be called the "Plane of the Load."

8. Connect a length of transmission line from the Plane of the Source to the input of the Power Meter; and in turn, connect another line from the output of the Power Meter to the Plane of the Load. The center of the Power Meter (actually one port or the other depending on

which line you will vary in the future) is the "Plane of the Measurement."

8a. I have chosen to use a 2 foot line to the input of the Power Meter; and at the output of the power meter I have a 3 foot line connecting to the BVT (which contains 1 foot of line in the zero position) with another 3 foot line at the BVT output to the Plane of the Load. As such, I had the capacity to change the position of the Plane of the Measurement by 32 feet by one foot additions from a minimum separation of roughly 8 feet. This also elongates the distance between the Planes of the Source and Load from 8 feet to a maximum of 40 feet.

9. I selected 24.9MHz by accident of meeting the Power Meter's sensitivity and the transmitter's capacity to load this enormous mismatch - it also happened to be eminently suitable for the data that follows.

ALL data was taken by first setting the output power to force a forward power reading of 5W (full scale) for EVERY variation, and then taking the reverse power reading:

Initial reading 1.70W reverse
added 1 foot 1.45W
2 1.20W
3 0.95W
4 0.80W
5 0.60W
6 0.50W
7 0.45W
8 0.75W
9 0.80W
10 0.90W
11 1.00W
12 1.20W
13 1.30W
14 1.40W
15 1.45W

So, by now it may become apparent that:
there is only one mismatched system condition;
that condition is not impacted by any ALC action (either through it not being engaged, or being nullified by maintaining a constant forward power);
no change in the line conditions inject any additional mismatch (the BVT is flat through all settings 0-15);
there is a substantial difference in what the apparent Power is.
there is a substantial difference in what the apparent SWR is.

The power determination for this system mismatched condition, i.e. a power meter between two Planes of discontinuity, exhibits a low of 3.30W to a high of 4.55W depending on its position in, and the length

of the path between the Planes of discontinuity.

Hence the answer to the question of what difference does it make?
-1.395dB
Which also answers my standard: does it make more than 1dB difference?
Yes

It then follows that for a source that exhibits a 1:2 mismatch that is feeding a 1:3 mismatch through a 50 Ohm system, you can always expect some error, and that if you are ignorant of the dimensions, that error can be as great as roughly 1.4dB.

What do the experts calculate? Well, I won't go into that math, that is left to the student to find through research from any of the three references cited. The graphs offered by each of them only allow for a 2:1 mismatched source facing a 2:1 mismatched load which in turn will yield up to a 1dB error.

Why the deliberated mismatch at the source? It refutes the myopic discussion of source Z by rendering a known value in parallel with an unknown (sic) which, when is 50 Ohms in itself, must render a source that is NOT 50 Ohms (guaranteed in fact, and supported by the evidence of data forecast by methods adopted by NBS).

73's
Richard Clark, KB7QHC

1654. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 08:30:50 UTC
From: "Ralph A. Schmid, DK5RAS" <nospam@radio-link.net>
Message-ID: <rjkkhv0m6gt41v0rrjliga9klh5q8s1fp1@4ax.com>
Source record: 112197
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

"c" <no@spam.com> wrote:

>Do you think diamond want to risk there name to
>put some false gain numbers on the antenna?

They did years ago, definetely, but maybe they have learned a bit..

>If a antenne does not do what it is expect to do
>we can claim the money back.

I never would buy a diamond antenna if there are better alternatives
available, and in most cases there are!

>Do you realy think diamond would take that risk?

Yes, because many radi amateurs do not realize that the antenna does
not what it should...

>Why do you think diamond has verry expensive
>measure equipment?

At least they must get their antennae to work. But I also wonder what
they have this for?! Even several antennae from same type and same
production lot differ significantly!!

regards - Ralph

--

Want to get in touch? http://www.radio-link.net/whereisralph.txt

1655. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 10:50:35 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <N_idnTwiaM9m7oeiU-KYvw@crocker.com>
Source record: 112198

> >Actually, several people (W8JI among them) have measured the output
> >impedance of common amateur linear amplifiers by at least a couple of
> >methods. The most credible measurements show, interestingly, a value
> >very close to 50 ohms when the amplifier is adjusted for normal
operation.

but is that a real resistive 50 ohms, or a dissipationless 50 ohms non-resistive? or could it be a virtual 50 ohms hiding some other fake steady state value? you can't read it when you connect an ohm meter to the output connector, so how can it be a resistance? or is it really a complex impedance that can be ignored when you calculate the output power? but then again it might be due to internal reflections making it an infinite sum of many other factors? maybe we have to learn how to conjugate our impedances before we can have a decent discussion about it? but what if its only a matching system to free space impedance? when there are reflections does it reflect or absorb? who started this topic anyway????

1656. 2 x DELTA LOOP stacked for 144 MHz -> how to connect them ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 11:09:52 UTC
From: paypay <qsl.concept@wanadoo.fr>
Message-ID: <bfdt9rutd1@news-reader2.wanadoo.fr>
Source record: 112199

Hi to all,

This is my first request on this newsgroup
and I hope find help here.

Then, i want to stack 2 x 5 elements delta loop for 144MHz.
(horizontal stack)

The two antennas are built. I will adjust the first antenna
for the best SWR report and I will do the same modifications
on the second to have 2 equal antennas.

There will be 1 lambda beetween them.

My question is : how to connect the 2 antennas ?
is it necessary to use balun or is it possible to use a special
size of coax (50 or 75 ohms) to adapt impedance ?

I hope that you could help me.

shemas or draw will be welcome to explain.

Best regards

Oli

1657. Re: 2 x DELTA LOOP stacked for 144 MHz -> how to connect them ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 12:01:18 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <xO2cnQ32aesTGYeiXTWJkQ@crocker.com>
Source record: 112200

"paypay" <qsl.concept@wanadoo.fr> wrote in message
news:bfdt9rutd1@news-reader2.wanadoo.fr...
> Hi to all,
>
> This is my first request on this newsgroup
> and I hope find help here.
>
> Then, i want to stack 2 x 5 elements delta loop for 144MHz.
> (horizontal stack)
>
> The two antennas are built. I will adjust the first antenna
> for the best SWR report and I will do the same modifications
> on the second to have 2 equal antennas.
>
> There will be 1 lambda beetween them.
>
> My question is : how to connect the 2 antennas ?
> is it necessary to use balun or is it possible to use a special
> size of coax (50 or 75 ohms) to adapt impedance ?
>
> I hope that you could help me.
>
> shemas or draw will be welcome to explain.
>
baluns change between balanced and unbalanced loads or sources, they are what you would use between a coax (unbalanced) and a 1/2 wave dipole or full wave loop (balanced), or to change from coax to twin lead.

to split power and combine two antennas it takes a transformer or two or three depending on how you want to do it. assuming the antennas are tuned for 50 ohms and you want to end up with a 50 ohm feedline the easiest way is to use a 1/4(or 3/4 if 1/4 is too short for your spacing) wave 75 ohm piece of coax from each one to a common T connector that combines them for the main feed line. a 1/4 wavelength piece of coax acts as a transformer, with a 50 ohm load on one end it will make it look like about 100 ohms on the other end, parallel 2 100 ohm impedances and you are back to a 50 ohm load for the main feedline.

another way is to use a balun at the feed point of your antenna that gives you a 100 ohm output, then use 1/2 or 1 wavelength piece of coax back to the T connector. the 1/2 or 1 wavelength coax will repeat it's input impedance on the other end so you get back the 100 ohms on the far end and then parallel two of them to get the 50 ohm main feed. this one is a bit worse than the one above if you are using high power as the swr on the phasing line is higher than the 75 ohm 1/4 wave pieces above, but for most people

this is not important.

there are lots of other ways to do it also depending on the feed point impedance and final coax impedance you want.

1658. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 13:06:27 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030720090627.02382.00000226@mb-m21.aol.com>
Source record: 112201

> who started this topic anyway????

I give up!

BUm

p.s. match 'em, don't worry about redeflections
what a piece d'resistance or d'impedance?

1659. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 13:24:45 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <0v5lhvk2im17fhu2lmktmegmr3ppm47hc9@4ax.com>
Source record: 112191

On Sat, 19 Jul 2003 23:14:42 GMT, "Dave Pitzer" <dpitzer@sonic.net>
wrote:

>
>Is there a Web-site I could/should investigate or a more appropriate
>news-group?

Look over the stuff at the web site for the C. Crane company. Lots of
AM expertise.

Bob
k5qwwg

>
>Many thanks,
>
>Dave Pitzer
>Pocono Lake, PA
>====================
>
>

1660. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 13:33:21 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030720093321.02382.00000228@mb-m21.aol.com>
Source record: 112204

>
>And please don't tell me there would be reflections inside the tank
>circuit... if you do, I'll take the tank circuit away too, and connect a
>wrong load impedance (the output load, now transformed through the tank)
>directly to the anodes!
>
>
>--
>73 from Ian G3SEK

AMEN! (real and virtual :-)

Yuri

1661. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 14:01:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1aa1da$1_1@corp.newsgroups.com>
Source record: 112205

Ian White, G3SEK wrote:
> W5DXP wrote:
>> If reflected energy could not cause over-current/over-voltage
>> problems in the source there would be no need for protection
>> circuitry. I once burned up a pair of ARC-5 1625's because my
>> feedline came unsoldered at the antenna. If there had not been
>> any reflected power, it would not have happened.
>
> Transmitters are damaged *only* by excessive heat dissipation, voltage
> or current, all caused by the wrong value of load impedance. Reflections
> don't come into it.

Reflections are the *CAUSE* of the wrong value of load impedance. The load impedance on a transmitter when reflections are allowed to reach the transmitter is (Vfor+Vref)/(Ifor+Iref). Please note that half the terms in the impedance equation are reflected terms. Please note that without the reflected terms, the transmitter would probably be perfectly happy with the "right" value of impedance at (Vfor/Ifor).

> Think what would have happened if you had measured the impedance at the
> TX end of your o/c transmission line (very high or very low, depending
> on the length) and replaced it with a resistor and inductor/capacitor
> giving the same value of R +/- jX.
>
> There's no transmission line, so no traveling waves of anything, and no
> reflections - just a transmitter with a very wrong value of load
> impedance. The 1625s would have burned up just the same.

Yes they would, but in that case reflections are not the cause of the impedance. In the first case, reflections are the *CAUSE* of the impedance that burned up the transmitter. Without the reflections, the transmitter would see (Vfor/Ifor) as the "right" impedance. With the reflections, the transmitter sees (Vfor+Vref)/(Ifor+Iref) as the "wrong" impedance.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1662. TV antenna question-cable length

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 14:09:26 UTC
From: "Henry B." <hbienert@cox.net>
Message-ID: <loxSa.19295$b03.12633@lakeread03>
Source record: 112206

At the second house in the country,my TV antenna,which is in the attic, is working fairly well but I wonder if shortening the cable from the present 50 feet to the 20 feet I really need will help.The present cable has very professional fittings at each end since it was sold as a unit .
I have a crimper and fittings

--
Hank

1663. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 14:11:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1aa42a_1@corp.newsgroups.com>
Source record: 112207

Ian White, G3SEK wrote:

> W5DXP wrote:
>
>> Ian White, G3SEK wrote:
>>
>>> The load, transformed backward through the output matching network,
>>> controls the slope of the line.
>>
>> Which is a V/I ratio - which is an impedance. Could this be the impedance
>> "seen" by the reflected waves transformed through the output matching
>> network?
>
> Specifically, precisely NOT... as apparently you well know (except in
> the special case of class A).

Class-A and combined Class-AB are both linear. The impedance "seen" by
the reflected waves transformed through the output matching network IS
linear. The output matching network acts like a pendulum or flywheel.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1664. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 14:52:26 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307200652.27fcdea9@posting.google.com>
Source record: 112208

>
>
> Slick

Dr Slick,
Way back in this thread you alluded to antennas as being
transformers. The more I think about that statement the more I see
it as being fact. Anything that involved coupling which all
antennas do can be drawn as a transformer !
Since the thread migrated all over the place did you feel that
the group agreed with that position?
Regards
Art

1665. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 15:18:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ab3bd_5@corp.newsgroups.com>
Source record: 112210

Ian White, G3SEK wrote:
> Think what would have happened if you had measured the impedance at the
> TX end of your o/c transmission line (very high or very low, depending
> on the length) and replaced it with a resistor and inductor/capacitor
> giving the same value of R +/- jX.
>
> There's no transmission line, so no traveling waves of anything, and no
> reflections - just a transmitter with a very wrong value of load
> impedance. The 1625s would have burned up just the same.

Yes, 1625's are pretty dumb but hopefully, we are smarter than the 1625's.
Here's more from the IEEE dictionary.

"resistance - (A) That physical property of an element, DEVICE, ...
(B) The real part of impedance. Note: Definitions (A) and (B) are
not equivalent ..."

"resistor - A DEVICE the primary purpose of which is to introduce
resistance into an electric circuit."

"impedance - (B) The ratio of the ... voltage ... to the ...
current ... (C) A physical DEVICE or combination of DEVICES ...
Definition (C) is a second use of 'impedance' and is independent
of definitions (A) and (B)."

"impedor - A DEVICE, the purpose of which is to introduce impedance
into an electric circuit."

In your above example, you changed the circuit from a (B) impedance to
an impedor. Even if the 1625's can't tell the difference, W5DXP can. :-)
Note that I, not the IEEE, capitalized 'DEVICE' in the above definitions.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1666. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 15:20:14 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vhlcnul2eu1afb@corp.supernews.com>
Source record: 112209

Ian White, G3SEK wrote:
>
>
> Think what would have happened if you had measured the impedance at the
> TX end of your o/c transmission line (very high or very low, depending
> on the length) and replaced it with a resistor and inductor/capacitor
> giving the same value of R +/- jX.
>

At the junction (node) that separates the
amplifier and the transmission line, it is
necessary, and quite correct, to separate the
"waves" associated with the transmission line, and
the "circuit" associated with the tubes and tank
circuit.

If the transmission line input impedance is
replaced with a lumped LCR circuit, then confusion
disappears and we have a conventional problem in
AC circuit analysis.

The only assumption needed is that any
transmission line inside the amplifier has
negligible length. This is usually reasonable at
30 MHz.

Bill W0IYH

1667. The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 15:43:52 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307200743.77d5e419@posting.google.com>
Source record: 112211
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

The claim that BPL is good for rural deployment is yet another myth propagated by the BPL lobbyists. In essence it is bait and switch. The BPL strategy is to get the FCC to allow the high levels of interference / pollution as the FCC is focused on getting broadband to rural communities that don't have it.

In reality, if the BPL lobbyists succeed, they will immediately focus on the wealthy suburban markets that are profitable (and already have cable and DSL) and ignore the rural areas.

DSL can work out to about ~ 16,000 feet from the central office. BPL can only go 2,000 feet from the BPL equivalent of a DSLAM, then BPL needs an expensive repeater installed by a linesman trained to work with 11,000 volt cables. So for a 16,000 foot run 8 BPL repeaters are needed.
At the customer's pole transformer a bridge will need to be installed to couple the signals from the 11,000 volt line to the 110 volt line (imagine what would happen if the bridge failed and your sockets had 11,000 volts!!).

However the math is worked, there is no way they can implement this vast array of expensive equipment in rural areas with any hope of meeting the alleged pricing.

The existing DSL broadband technology is proven and could be provided to almost everyone who has a phone, the barriers are political not technical. The solution to universal broadband lies in ensuring the phone companies serve all of their customers equally. BPL is a broken and polluting technology that is a pure distraction to the objective of universal broadband.

1668. Re: How to test a balun?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 16:25:02 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vhlgj33n512462@corp.supernews.com>
Source record: 112212

Terminate with a 50 ohm resistor and check it with an antenna noise bridge.
hank wd5jfr
"David Cook" <nospam.davepc4@comcast.net> wrote in message
news:xcXRa.78790$OZ2.13785@rwcrnsc54...
> Hi Group, I have a balun that I believe is fried. Silly me, I tried to
load
> up my 20 meter dipole on 40 meters with my amplifier. There was a flicker
on
> the SWR meter then the SWR shot up to infinity. I'm sure I zapped the
balun,
> but am curious to know if there's a way to test one, other than by
> connecting it to another set of wires.
>
> Also, I'd like to cut the thing open and see what's inside. It's one of
the
> typical kind that's in a 1 3/4" PVC tube with end caps. Is it possible to
> cut these things open or are these things potted with some compond on the
> inside?
>
> Thanks for any advice and 73 to all,
>
> -- Dave, WA0TTN
>
>
>

1669. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 16:48:46 UTC
From: Robert <rdbake@prtcnet.org>
Message-ID: <bfeh94$kc5$1@nd.eastky.net>
Source record: 112075
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

"Rob Kemp" <robkemp90210@hotmail.com> wrote

> In reality, if the BPL lobbyists succeed, they will immediately focus
> on the wealthy suburban markets that are profitable (and already have
> cable and DSL) and ignore the rural areas.

That is soooo true - well said.

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.502 / Virus Database: 300 - Release Date: 7/18/2003

1670. Re: TV antenna question-cable length

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 16:55:23 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <OFidnUtyZMzhVIeiXTWJhQ@crocker.com>
Source record: 112213

if its a decent brand of cable with good connectors its probably not worth shortening it. you will reduce the loss by about 50%, but the loss is probably low enough that it doesn't matter anyway.

"Henry B." <hbienert@cox.net> wrote in message news:loxSa.19295$b03.12633@lakeread03...
> At the second house in the country,my TV antenna,which is in the attic, is
> working fairly well but I wonder if shortening the cable from the present 50
> feet to the 20 feet I really need will help.The present cable has very
> professional fittings at each end since it was sold as a unit .
> I have a crimper and fittings
>
> --
> Hank
>
>

1671. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 16:57:04 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <ARzSa.106949$ye4.79134@sccrnsc01>
Source record: 112214

Ian White, G3SEK wrote:

> W5DXP wrote:
>
[SNIP]
>
> Transmitters are damaged *only* by excessive heat dissipation, voltage
> or current, all caused by the wrong value of load impedance. Reflections
> don't come into it.
>
How does the wrong load impedance comes into existence?

Is it not caused by the mismatch?

The mismatched impedance rolls down the transmission line to the transmitter and VOILA I have a 'wrong value' of load impedance. So, my amplifier or rig, with a predesigned range of tuning range, may now be operating off the designed load line.

Now, my understanding of transmission lines is that the mismatch at the antenna causes a reflection. The root cause of these issues is the mismatch that produces the reflection. The reflection manifests itself in VSWR. The VSWR circle on my SMITH charts indicates the range and values of the 'wrong value' of load impedance.

The 'wrong value' of load impedance, the VSWR, and the mismatch are all one family!!

1672. Re: Omnidirectional (but vertical) loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 17:00:07 UTC
From: "Albert P. Belle Isle" <belleisl@CerberusSystems.com>
Message-ID: <hgilhv0n429q6f53g27gosjj4pnunef49g@4ax.com>
Source record: 112215

On Thu, 19 Jun 2003 19:09:36 GMT, Albert P. Belle Isle
<belleisl@CerberusSystems.com> wrote:

>On Thu, 19 Jun 2003 16:47:48 GMT, Albert P. Belle Isle
><belleisl@CerberusSystems.com> wrote:
>
>>On a recent visit to a Coast Guard station, I noticed a strange (to
>>me) member of their antenna farm.
>>
>>It was mounted atop a 20-25ft un-guyed mast, and appeared to be
>>constructed of three half-loops, each approximately two feet in
>>diameter, and each in a vertical plane 120 degrees from its neighbors,
>>all joined together.
>>
>>It sort of looked like an egg-beater on a broom handle.
>>
>
>If further clarification is required, imagine three letter 'C' shapes
>of equal size, all joined at their open ends, and standing uniformly
>spaced so as to appear from above as a 'Y' shape.
>
>

Well, it looks like my guess was correct, based upon this TCI antenna
data sheet:

http://www.tcibr.com/PDFs/612625webs.pdf

(The one I saw was only about one meter or so for each loop.)

Good listening,
Al
==========
Location: 42N39, 71W09 (Near Boston, MA)
HF Antennas: 65ft TFD, 45ft T2FD, 28ft vertical, 65ft doublet
HF Receivers: Ten-Tec RX340, RX320, Harris R2368, Cubic R3030A
Decoders: Code300-32, Universal M-8000, PK-232MBX/DSP
==========

1673. 60 meter ERP

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 17:00:57 UTC
From: Edward Lewis <kq6dx@pacbell.net>
Message-ID: <v1ilhvoomasae2di70c92unqk6j1krpmvk@4ax.com>
Source record: 112216

I just read the QST article on 60 meters and I have some questions.
The FCC said that 50 watts ERP is allowed and a half wave dipole will
be presumed to have a gain of 0 dBd. iI don,t think most hams will put
up a dipole for 60 , but will use existing antennas such as 30 40 or
80 meter dipoles.how would you calculate the ERP for these antennas to
be in compliance with the FCC. In my case I am able to tune my 30
meter rotating dipole on 60 meters. this is a 1\4 wave on 60 so what
are my requirements for record keeping.
Edward Lewis KQ6DX
kq6dx@pacbell.net

1674. Re: Can't stand it any longer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 17:11:25 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vhljbu2sme3ff4@corp.supernews.com>
Source record: 112217

Uh, Reg, Voltaire wrote "Candide".
Perhaps you were thinking of Volta, the Italian.
And you forgot Maxwell, Cavendish and Faraday.
All brits, all important to this stew.
Plus a host of others all the way back to Greece and before.
And if more here had gotten as far as Gibbs, we could just write down the
DE's and the BC's and be done in a few lines of math.
But it has been virtually entertaining, don't you think?
73 es gud dx om
H.
NQ5H

ascii limited notation
----
div D = rho (rho is
charge)
curl H - (partial with respect to time) D = J (J is current)
curl E + (partial with respect to time) B = 0
div B = 0

D = epsilon(naught) E
B = mu(naught) H

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bfcqvnnmi1@sparta.btinternet.com...
>
> The haggling, for years, about congugate matching, SWR, forward &
reflected
> power, silly virtuallty, etc, has gone on long enough.
>
> Only G3SEK, amongst the small minority of the radio population who
> contribute to these walls, has a grasp of what it's all about. There are
> obviously others who are too busy to waste their time on newsgroups.
>
> But who am I to judge?
>
> INTERNAL IMPEDANCE OF RF POWER AMPLIFIERS
>
> Programs TRIODE1 and TETRODE1 assist with the classical design of tube
> (valve) power amplifiers. They are very closely related to each other. A
key
> design feature, the cathode current operating angle, is an input
parameter.
>
> Apart from the drive and input-circuits, they also apply to their lower

> power transistor equivalents.
>
> For the benefit of those who may insist on knowing, these two programs are
> based on the clssical theoretical analysis by americans Everitt, 1932 (who
> was probably not original at that relatively late stage of the thermionic
> tube). He was followed by Terman in a more practical but more uncertain
> manner in the 1940's. No doubt there have been others. None of them, aware
> of their weaknesses, would have wished to be worshipped as little tin
Gods.
>
> The basics havn't changed since Ohm, Ampere, Voltaire and Heaviside.
>
> Anyone responding to an enquirer, who feels in need of extra support in
his
> reply, who refers back to the ancients merely displays his inability to
> provide a logical explanation and a lack of underlying understanding.
> There's nothing wrong, of course, in a lack of understanding except in
> propagating it. (Most enquirers do not have the ancient books or easy
access
> to the books anyway)
>
> Neither of this pair of programs require a congugate match between
internal
> impedance and the load. There's nothing magical about 50 ohms. It could be
> any value as any appropriately designed SWR meter will assume. I have a
> 75-ohm model. All is based on assumptions. The only absolute value is SWR
> itself which does not depend on Zo or Z load but merely on their ratio.
>
> The only way to determine dynamic internal impedance of a PA is to
calculate
> it AFTER THE AMPLIFIER HAS BEEN COMPLETELY DESIGNED. It is then too late
to
> have any effect on design.
>
> Just to satisfy curiosity the dynamic internal resistance of an amplifier
is
> a calculated output quantity of program TETRODE1. It is of course of no
> practical value. In the program it is referred to as the Source Resistance
> when looking back into the 50-ohm output socket.
> ----
> ========================
> Regards from Reg, G4FGQ
> For Free Radio Design Software
> go to http://www.g4fgq.com
> ========================
>
>

1675. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 17:33:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhlkjdt48a9f3a@corp.supernews.com>
Source record: 112218

Hey, that's cool. Been a ham for 46 years, made it through Air Force technical school, got a BSEE degree, and spent over 30 years doing circuit design without ever once coming across the term "impedor". And there it was, right in the IEEE dictionary. This newsgroup is sure educational!

Roy Lewallen, W7EL

W5DXP wrote:
> . . .

> "impedor - A DEVICE, the purpose of which is to introduce impedance
> into an electric circuit."
>
> In your above example, you changed the circuit from a (B) impedance to
> an impedor. Even if the 1625's can't tell the difference, W5DXP can. :-)
> Note that I, not the IEEE, capitalized 'DEVICE' in the above definitions.

1676. Re: Can't stand it any longer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 17:42:05 UTC
From: tdonaly@aol.com
Message-ID: <20030720134205.13232.00000267@mb-m10.aol.com>
Source record: 112119

H. wrote,
>
>Uh, Reg, Voltaire wrote "Candide".
>Perhaps you were thinking of Volta, the Italian.
>And you forgot Maxwell, Cavendish and Faraday.
>All brits, all important to this stew.
>Plus a host of others all the way back to Greece and before.
>And if more here had gotten as far as Gibbs, we could just write down the
>DE's and the BC's and be done in a few lines of math.
>But it has been virtually entertaining, don't you think?
>73 es gud dx om
>H.
>NQ5H
>

Reg likes to intentionally put things like that into his posts to
put us all on. If you read much Thackery, who made a good
living at one time writing about English con artists, you'll know
it's a part of the British national character.
73,
Tom Donaly, KA6RUH

1677. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 18:05:31 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1adaf0_1@corp.newsgroups.com>
Source record: 112120

William E. Sabin wrote:
> If the transmission line input impedance is replaced with a lumped LCR
> circuit, then confusion disappears and we have a conventional problem in
> AC circuit analysis.

Some confusion disappears. Some additional confusion arises. It should
be recognized that replacing a V/I impedance with an impedor is a shortcut
and doesn't necessarily represent reality. Math models certainly do not
control reality. For instance, ghosting is not the same in the two cases.
A TDR will not give the same results.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1678. Re: 6/2/70/23 vertical Diamond antennas (information).

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 18:07:13 UTC
From: Ekki Plicht <df4or@web.de>
Message-ID: <bfepb2tui07$2@news.t-online.com>
Source record: 112126
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx

Ralph A. Schmid, DK5RAS wrote:

> "c" <no@spam.com> wrote:
>
>>If a antenne does not do what it is expect to do
>>we can claim the money back.
>
> I never would buy a diamond antenna if there are better alternatives
> available, and in most cases there are!

Name one? Welche?
Ich meine jetzt nur VHF/UHF Omnis... auf KW gibt es sicherlich Alternativen
:-)

73,
Ekki, DF4OR

1679. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 18:13:35 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1adcd5_1@corp.newsgroups.com>
Source record: 112121

Dave Shrader wrote:
> How does the wrong load impedance comes into existence?
> Is it not caused by the mismatch?

Yep, the mismatch causes reflected waves which, in turn, cause the wrong load impedance. It's easy to see in the following thought experiment.

200W source---one second long 50 ohm lossless feedline-----open

The source will output 100V at 2A for two seconds from key down and be perfectly happy. The "wrong" impedance arrives exactly with the reflected wave after two seconds. The center of the steady-state SWR circle is the "right" impedance and therefore will not exist after two seconds.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1680. Re: 60 meter ERP

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 18:15:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1add61_1@corp.newsgroups.com>
Source record: 112122

Edward Lewis wrote:
> I just read the QST article on 60 meters and I have some questions.
> The FCC said that 50 watts ERP is allowed and a half wave dipole will
> be presumed to have a gain of 0 dBd. iI don,t think most hams will put
> up a dipole for 60 , but will use existing antennas such as 30 40 or
> 80 meter dipoles.how would you calculate the ERP for these antennas to
> be in compliance with the FCC.

I suspect the FCC would be satisfied with EZNEC modeling results.
Give him four uninterrupted hours, and Reg will have a software
package for it. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1681. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 18:19:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ade2d_1@corp.newsgroups.com>
Source record: 112123

Roy Lewallen wrote:
> Hey, that's cool. Been a ham for 46 years, made it through Air Force
> technical school, got a BSEE degree, and spent over 30 years doing
> circuit design without ever once coming across the term "impedor". And
> there it was, right in the IEEE dictionary. This newsgroup is sure
> educational!

So what are you going to do with your new found knowledge? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1682. Re: Cardioid antenna at 440 MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 18:29:10 UTC
From: "Mike M." <>
Message-ID: <4qnlhvopbjimf0s1mhkv0tjpfudombuksf@4ax.com>
Source record: 112124

On Sat, 19 Jul 2003 01:56:04 GMT, "George Weischadle"
<gweischadle@earthlink.net> wrote:

>Hi all,
>
>Can anyone tell me where to find a commercial antenna (or design for
>homebrew) that is compact and generates a cardioid pattern at 440 MHz?
>Please email me at K6GW@sattel.com.
>
>Thanks,
>George
>
>
A Moxon rectangle sound like what you need. The first link is a
description of a 2m Moxon, the second is a calculator that will allow
you to easily determine the dimensions for 440. I built a 2m version
out of copper pipe and got a good match on the first try.

73
Mike

http://www.cebik.com/mvhf.html

http://www.qsl.net/ac6la/moxgen.html

1683. How much is radiated?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:02:54 UTC
From: Ken <cprstn54zz@att.net>
Message-ID: <thplhvceq8ifstv8iftaqh820cbtb0s9qc@4ax.com>
Source record: 112125

My field rig is an FT-817, with MFJ-971 tuner. Antenna is a 40M
extended double zepp Slinky with 30 ft of 300 ohm twinlead.

On 60M, I easily tune SWR down to 1.0. Power shows a full 5 watts on
FM when I test.

Am I radiating almost everything the radio is putting out? Or could I
still be having big losses in the tuner? How can I test it?

Ken KC2JDY

Ken
(to reply via email
remove "zz" from address)

1684. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:10:29 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307201110.383da88a@posting.google.com>
Source record: 112127

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307200652.27fcdea9@posting.google.com>...
> >
> >
> > Slick
>
> Dr Slick,
> Way back in this thread you alluded to antennas as being
> transformers. The more I think about that statement the more I see
> it as being fact. Anything that involved coupling which all
> antennas do can be drawn as a transformer !
> Since the thread migrated all over the place did you feel that
> the group agreed with that position?
> Regards
> Art

Some have emailed me personally, and we have pretty much agreed on these two points(even Roy agreed with these, if you read his posts here):

1. Two antennas (also called transducers) placed close together actually can be considered a transformer, albeit a very inefficient one.

So an antenna can be considered 1/2 of a full transformer, so i wasn't that far off from a semantics point of view.

2. An antennas input impedance will depend on the impedance or permeability of the medium it is radiating into. In other words, an antennas free space input inpedance will be different from the input impedance of the same antenna immersed in water.

This is of course with a completely water-proofed antenna.

I went on to point out that a toroid transformer of a specific turns ratio, wire gauge, and core geometry, will definitely depend on the permeability (impedance) of the core material for it's characteristics.

Alas, i'm just a lowly practical engineer and not a PhD in EM wave-propogation (obviously no one else here is either). But if a transformer depends on 2 transducers' abilities to turn V and I into E and H (and vice versa), and that this depends on the impedance of the medium between them....then to me, an antenna is in some way "matching" to the impedance of free space, 377 Ohms, even if the energy has been converted to a different form.

Slick

1685. RFC: RatTail Antenna Booster

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:10:34 UTC
From: Scott Drumm <denagoth@midsouth.rr.com>
Message-ID: <KOBSa.89572$X43.61039@clmboh1-nws5.columbus.rr.com>
Source record: 112128

Anyone tried this out on their HT? Does it work as advertised?

http://rattailantenna.com/

I was thinking about buying one for my IC-T22A. I've replaced the stock rubber duck w/ a Smiley SLD-2 12" 5/8 antenna, but want to see if I can reach some more distant stations.

Thanks for the help!

Scott Drumm
N3XFD

1686. Re: Can't stand it any longer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:19:42 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vhlqsg3c2gm324@corp.supernews.com>
Source record: 112129

Yeah, but it gave me a chance to mouth off.
And then I forgot Ben Franklin!
Anybody who'll fly a kite in a thunderstorm deserves mention.
I visited Cambridge once; Newton to Hawking,
Reg is in good company.
73
H.

"Tdonaly" <tdonaly@aol.com> wrote in message
news:20030720134205.13232.00000267@mb-m10.aol.com...
> H. wrote,
> >
> >Uh, Reg, Voltaire wrote "Candide".
> >Perhaps you were thinking of Volta, the Italian.
> >And you forgot Maxwell, Cavendish and Faraday.
> >All brits, all important to this stew.
> >Plus a host of others all the way back to Greece and before.
> >And if more here had gotten as far as Gibbs, we could just write down the
> >DE's and the BC's and be done in a few lines of math.
> >But it has been virtually entertaining, don't you think?
> >73 es gud dx om
> >H.
> >NQ5H
> >
>
> Reg likes to intentionally put things like that into his posts to
> put us all on. If you read much Thackery, who made a good
> living at one time writing about English con artists, you'll know
> it's a part of the British national character.
> 73,
> Tom Donaly, KA6RUH
>
>

1687. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:24:41 UTC
From: "Ed G." <Spectrumhog@_REMOVE_StarBand.net>
Message-ID: <Xns93BE7E5C0161Frog207Junocom@148.78.248.75>
Source record: 112130
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

While I certainly don't want to see BPL implemented, I must question
your statements about the power companies' technical requirements to
deploy BPL to rural customers.

Can you please provide official sources for the technical information
you posted?

Ed WB6SAT

1688. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:27:16 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f1aed0d@shknews01>
Source record: 112131

WARNING: long posting - but an interesting one I hope

MOTTO: I seems that bad books are worse than no books
at all.

My confusion (fuelled by that dubious paragraph)
was to believe that "first hand" generated electric
and magnetic fields - by a dipole antenna - are the
actual components of the radiated electromagnetic
emission.

Of course not ! The RF source applied to a dipole
generates a magnetic field and an electric field 90
degree out of phase (it is a capacitive antenna). If I
look at Maxwell's equations, I see that the components
of the radiated electromagnetic field are pretty much
in phase. So, where is the catch?

Well, I guess this is:

The cause of the "legitimate" EM radiation are the
accelerated/decelerated charges in the antenna.
The components of this EM radiation are an electric and
a magnetic field in phase!, which reinforce each other. This
reinforcement is responsible of the linear! decaying of the
two fields with respect to the inverse of distance (hence
propagation at great distance).

Note. The term propagation is highly misused. A
(say, electro-)static field still propagates, just that
it does it at a very short distance, given by a decaying strength
proportional to the inverse of the square of the distance
(this was a second misunderstanding I experienced).

Back to the antenna. The electric field "first hand" generated
by the antenna - when the two types of charges are at dipole's
extremities - is in sync with the RF signal applied to the antenna,
and it does "useful job" along with it (it accelerates charges by
"collapsing" over the antenna). The current flowing in the antenna
generates a magnetic field "in sync" with the RF radiation (with which
I identify it - it generates an electric field etceteras..). I would say
then that the dipole antenna is a "magnetic" antenna, since its magnetic
generated field is at the origin of RF emission. This is surprising to
me. Am I right ??

Here's a brainstorming question for your review: this "first hand"
electric field helps with the acceleration of electrons. However, it

is also a time varying electric field, hence it will create an in phase
magnetic field etceteras... Then, we spot a second source of EM
radiation. Does this mean that a dipole radiates two separate twin
EM signals, 90 degrees out of phase ??

Some sort of feedback on this is appreciated - since I do not have
a physicist to keep me honest.

Cordially,

Nic.

"Nic. Santean" <nic@csd.uwo.ca> wrote in message news:3f16b377@shknews01...
>
> Below is a paragraph - from a known book -
> which I have difficulties understanding. Please
> somebody explain in more clear terms the
> phenomenon.
>
> < the context was about dipole antennas,
> however the comment has a general nature >
>
> "Radiation of electromagnetic waves is created
> when the alternating electric and magnetic fields
> attempt to collapse back toward the antenna.
> However, new fields being created by the next
> half cycle push the preceding fields into space,
> which is the mechanism of radiation."
>
> - from "The Beginner's Handbook of Amateur
> Radio" by Clay Laster, page 260
>
> Cordially,
>
> Nic. Santean
> http://www.csd.uwo.ca/~nic/
>
>

1689. Re: 60 meter ERP

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:28:45 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhlrbirhonta2b@corp.supernews.com>
Source record: 112132

One way to do it is to download the free demo version of EZNEC from http://eznec.com. After going through the "Test Drive" tutorial, you'll know how to model your dipoles at various frequencies. I recommend modeling them in free space for simplicity. Because of the dipole's broad vertical pattern, the gain of one dipole over ground compared to another at the same height is very close to their relative gains in free space. So free space results for relative gain are valid for comparing dipoles at the same height above ground. Look at the relative free space gain of your antenna compared to a half wavelength dipole. Then you can calculate the ERP of the antenna as:

ERP = P * 10^(G/10)

where P is the power you're putting into your antenna and G is the gain in dB relative to a half wavelength dipole. Or you can estimate it from a table of numerical equivalents of dB, so

ERP = k * P

where k is the numerical equivalent of G, e.g.

G(dB) k
1 1.26
2 1.58
3 2.00

etc.

Roy Lewallen, W7EL

1690. Re: Can't stand it any longer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:30:20 UTC
From: tdonaly@aol.com
Message-ID: <20030720153020.03186.00000251@mb-m01.aol.com>
Source record: 112134

I wrote,
>
>Reg likes to intentionally put things like that into his posts to
>put us all on. If you read much Thackery, who made a good
>living at one time writing about English con artists, you'll know
>it's a part of the British national character.
>73,
>Tom Donaly, KA6RUH
>

I misspelled "Thackeray." I expect he'll forgive me, though.
73,
Tom Donaly, KA6RUH

1691. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:30:53 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vhlrdnm97aph5a@corp.supernews.com>
Source record: 112133

W5DXP wrote:

> William E. Sabin wrote:
>
>> If the transmission line input impedance is replaced with a lumped LCR
>> circuit, then confusion disappears and we have a conventional problem
>> in AC circuit analysis.
>
>
> Some confusion disappears. Some additional confusion arises. It should
> be recognized that replacing a V/I impedance with an impedor is a shortcut
> and doesn't necessarily represent reality. Math models certainly do not
> control reality. For instance, ghosting is not the same in the two cases.
> A TDR will not give the same results.

I give up.

Bill W0IYH

1692. Re: How much is radiated?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:37:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhlrs8gkeaosb9@corp.supernews.com>
Source record: 112135

Unfortunately, there's no easy way to determine what fraction of your radio's power is getting radiated. Just about the only practical way short of modeling or an antenna test range is to compare your antenna to another antenna with known gain and efficiency, and even this can be difficult to do with any accuracy. "Slinky" antennas are pretty inefficient, so even if your tuner isn't losing much power, the antenna itself is probably turning a good portion of it into heat.

The good news is that the antenna isn't likely to be less efficient on 60 meters than on 40. So if you're making QSOs on 40, you should be able to do the same on 60. Just keep that twinlead dry if you want most of your power to get to the antenna.

Roy Lewallen, W7EL

Ken wrote:
> My field rig is an FT-817, with MFJ-971 tuner. Antenna is a 40M
> extended double zepp Slinky with 30 ft of 300 ohm twinlead.
>
> On 60M, I easily tune SWR down to 1.0. Power shows a full 5 watts on
> FM when I test.
>
> Am I radiating almost everything the radio is putting out? Or could I
> still be having big losses in the tuner? How can I test it?
>
> Ken KC2JDY
>
>
> Ken
> (to reply via email
> remove "zz" from address)

1693. How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:40:00 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307201140.1c182d3d@posting.google.com>
Source record: 112136

Hi Folks,

Someone once mentioned the following to me:

"You can calculate field strength from power and distance according to this formula I found in an old broadcast engineering handbook...

e = 7 * sqrt(P) / d

where e = field strength in volts/meter, d = distance in meters, P = power in watts. Antenna is assumed to be 1/2 wave dipole."

I'd like to know exactly how this simple formula was derived.

Any info greatly appreciated.

Thanks,

Slick

1694. Re: Can't stand it any longer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:40:18 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vhls371qhll762@corp.supernews.com>
Source record: 112137

Who, Reg or Thackeray?
;^)))
"Tdonaly" <tdonaly@aol.com> wrote in message
news:20030720153020.03186.00000251@mb-m01.aol.com...
> I wrote,
> >
> >Reg likes to intentionally put things like that into his posts to
> >put us all on. If you read much Thackery, who made a good
> >living at one time writing about English con artists, you'll know
> >it's a part of the British national character.
> >73,
> >Tom Donaly, KA6RUH
> >
>
> I misspelled "Thackeray." I expect he'll forgive me, though.
> 73,
> Tom Donaly, KA6RUH
>
>

1695. Re: How much is radiated?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:43:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1af1d8_7@corp.newsgroups.com>
Source record: 112139

Ken wrote:
> Am I radiating almost everything the radio is putting out? Or could I
> still be having big losses in the tuner? How can I test it?

Put the forward/reflected power meter on the output of the tuner. Then
calculate the losses in the feedline.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1696. Re: Cardioid antenna at 440 MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:46:54 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F1AF082.7F736D2A@gte.net>
Source record: 112138

George Weischadle wrote:

> Hi all,
>
> Can anyone tell me where to find a commercial antenna (or design for
> homebrew) that is compact and generates a cardioid pattern at 440 MHz?
> Please email me at K6GW@sattel.com.
>
> Thanks,
> George

Look at the Moxon design on the W4RNL site- simplistic parasitic antenna
but when done correctly achieves very hi F/B reminiscent of a cardiod.

Dale W4OP

1697. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:51:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1af3b1$1_7@corp.newsgroups.com>
Source record: 112140

Roy Lewallen wrote:

> Hey, that's cool. Been a ham for 46 years, made it through Air Force
> technical school, got a BSEE degree, and spent over 30 years doing
> circuit design without ever once coming across the term "impedor". And
> there it was, right in the IEEE dictionary. This newsgroup is sure
> educational!

Maybe you missed this one also: "reactor - a device, the primary purpose
of which is to introduce reactance into a circuit."

If you buy 'resistor', why not 'reactor' and 'impedor'? Same concept.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1698. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 19:59:54 UTC
From: tdonaly@aol.com
Message-ID: <20030720155954.03186.00000253@mb-m01.aol.com>
Source record: 112141

Bill wrote,
>
>W5DXP wrote:
>
>> William E. Sabin wrote:
>>
>>> If the transmission line input impedance is replaced with a lumped LCR
>>> circuit, then confusion disappears and we have a conventional problem
>>> in AC circuit analysis.
>>
>>
>> Some confusion disappears. Some additional confusion arises. It should
>> be recognized that replacing a V/I impedance with an impedor is a shortcut
>> and doesn't necessarily represent reality. Math models certainly do not
>> control reality. For instance, ghosting is not the same in the two cases.
>> A TDR will not give the same results.
>
>I give up.
>
>Bill W0IYH
>

I would like to know why Cecil, for instance, uses pulses, as in a TDR, in order
to argue a steady state point. Impedance is normally defined for any "impedor"

at only one frequency at a time. A single pulse, according to Mr. Fourier, can

be characterized with a component at all frequencies. So which frequency and
which impedance are you talking about, Cecil, when you change the subject from
steady state to the time domain?
Secondly, math models are descriptions. Their purpose has never been to control
anything. Moreover, no one except you, Cecil has ever implied that anyone thought
they were. Do I detect a straw man here?
73,
Tom Donaly, KA6RUH

1699. Re: RFC: RatTail Antenna Booster

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 20:22:00 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F1AF9C9.7494F902@shaw.ca>
Source record: 112142

Scott Drumm wrote:
>
> Anyone tried this out on their HT? Does it work as advertised?
>
> http://rattailantenna.com/
>
> I was thinking about buying one for my IC-T22A. I've replaced the stock
> rubber duck w/ a Smiley SLD-2 12" 5/8 antenna, but want to see if I can
> reach some more distant stations.
>
> Thanks for the help!
>
> Scott Drumm
> N3XFD

You would do as well if you took 19 inches of wire with an alligator
clip and connected it to the ground side of your rubber ducky. It
acts as the other half of a half wave dipole. Just let it hang there, its
placement is not very critical.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

1700. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 21:26:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gdtlhvcifojvq7dcimfttcfraf852og3rf@4ax.com>
Source record: 112143

On Sat, 19 Jul 2003 20:06:41 GMT, Dilon Earl <dilon_earl@mail.com>
wrote:

>On Sat, 19 Jul 2003 10:11:36 -0500, W5DXP <Cecil.A.Moore@ieee.org>
>wrote:
>
>>Dilon Earl wrote:
>>> If you have a 100 watt transmitter, the watt meter shows 3 watts
>>> reflected. I deliver 103 watts to the antenna. I now know where the
>>> reflected power go's. But where did it come from? If I could find a
>>> way to have 100 watts reflected I could put 200 watts to the antenna
>>> from a 100 watt transmitter.
>>
>>The key word is "to", not "accepted by". You can indeed get 200 watts
>>to (incident upon) the antenna with a 100 watt transmitter. Trouble
>>is, the antenna only accepts half of that power.
>>
>
>Where does the other 100 watts go?
>
>>> For some reason I need a circulator on my SB-401.
>>
>>Only if you allow reflected energy to reach your SB-401.
>
>How can I stop it from reaching my SB-401?
>
>Then all ham transmitters should have a circulator?
>

Hi Dilon,

You sure have been lead down the primrose path. Your simple questions
deserve better, but you have to butt heads harder to shake loose
dearly held fantasies embodied in the melange of response littering
the threads.

If you have three Watts reflected, it came from the transmitter and in
fact never left it, it simply turned to heat. The meter is indicating
a condition, not forcing it. A fever thermometer in your mouth will
tell you that you have a temperature in excess of the surrounding
environment (a clear mismatch except for rare summer days) and yet the
thermometer is not responsible for your fever (Thoreau once offered
that we were more comfortable before the thermometer's invention).

If you pulsed your transmitter with a short enough pulse, then you
would have another rare example, a power that returns to the source -

literally. However, after the first cycle of any HF transmission (or even partial cycle) that opportunity is lost forever (until you key-up to offer another short-lived opportunity with the future prospect of another key-down).

You can use a circulator to heat a dummy load if you wish, or you could use a tuner to reflect that power back to the antenna. You may well wonder why a circulator was offered in the first place. Rhetorical gamesmanship is the answer which has nothing to do with offering any real solution to you.

Another Rhetorical game involving the addition of 100W reflected to the original 100W now being added simply avoids the obvious that if you could force such a condition, then your 200W would be completely reflected too (what's the point unless you are intent in building a black hole generator?). And then you could project, "can I add 100W to the 200W reflected?" The cautionary response would be "can your rig stand to take the reverse boxcars of a train of 300/400/500...1GW...1TW.... coming back at it?" With a shorted transmission line only one wave length long being pumped at 10MHz, the reductio ad absurdum would quickly pile up these powers in one second of key-down.

Is it any wonder the manufacturers nip this in the bud? The clumsiness of such rhetoric is revealed through the obvious example of you not having been blasted into a smoking crater when tuning into even a slight mismatch.

What can 3W do?

Take a christmas tree bulb and light it up. Now grab it in a closed fist. Your comfort level may allow this, maybe not. Want to force the issue? Break the glass envelope and do it again with rubber gloves (offered to prevent the rhetorists from chiming in about shock hazard). I dare say the smaller volume of that same 3W will definitely have your eyes watering. Want to force it further? Take that filament and coil it smaller to pin head size and apply it against a finger pad in your closed fist. Blisters may offer a means to insulate you after a short while. Still the same 3W, in the volume of your final's transistor junction.

Fortunately, transistors are designed to take the heat your finger blistered with. They do this by careful design of "Heat Sinking" which is what the body does when sweat pours. Heat sinks are a packaging issue that have ratings in thermal resistance. The standard thermal resistance for a TO-220 transistor (flange style case) sitting in the open air is 4.5 ï¿½C/W. This means that the surface temperature at the metal tab would be 13.5 ï¿½C hotter than ambient if it was supporting only 3W and doing nothing else (doesn't sound like your situation at all does it?). By this I mean that same transistor is presumably the source of the original 100W (which is NOT the power being absorbed by the transistor) and as a consequence, and through

inefficiency (typically in the 40-60% range for a simple design) it might offer far in excess of 200 ï¿½C above ambient very quickly before it suffered catastrophic failure. This is why there are heat sinks.

When that same transistor is butted up against a finned sink, it also suffers issues of impedance mismatch and energy transfer problems. The first tuner of choice is quaintly known as "bird shit" or thermal conducting compound, there are also modern gaskets that do this job, but they are not as effective, merely close. When this grease is properly applied and the tab mounted against the card that holds it, it will lower that original Thermal Resistance from 4.5 ï¿½C/W by 70% to 1.25 ï¿½C/W. That same 3W will now elevate the transistor case temperature by 3.75 ï¿½C - nearly 10 degrees cooler.

If you were to clamp that flange against a proper heat sink with fins oriented vertically (not horizontally) you would drop the temperature even further.

However, transistors do not operate at case temperature, they operate at junction temperature, and there is far more resistance between the junction and the case than there is between the case and ambient. Have I lost you yet? If we harken back to that same TO-220 and ask what the Thermal Resistance is from junction to ambient, we would find it is 65 ï¿½C/W and the temperature for 3W is sufficient to boil water at the junction (remember that blister for the small coil of filament against the finger pad?). Now add the efficiency lost to heat to generate the original 100W!

This is where we get into catastrophic failures because that heat alone (the inefficiency of generation) is high enough to melt the junction's connections ... open circuit. Obviously TO-220's are not used in a single package, without heat sinks, to source your 100W, this is simply a means to illustrate the discussion.

When you are pouring the coals to the antenna and the wind breaks it presenting a fully reflecting load (the pits); you now have a zero efficiency situation at the finals. Where they roasted along at a marginal 200 ï¿½C, they quickly climb in an attempt to support heat capable of melting junctions and connections. You will notice that such advice as "your source does not dissipate reflected power," suggesting that you are safe, comes free and without warrantee for very good reasons. No one is going to foot the bill of your rig needing a new finals deck, and they will laugh at you to boot.

Does 3W present any hazard? I dare say absolutely no one will warrant their advice to that either. :-)

The reason (from their being burned before) is that no situation is comparable to their own or any other for that matter, and your rig may indeed be running with exceptional heat problems where 3 more Watts begins what is known as Thermal Runaway. Watch them rock on their rhetorical heels if you ask for this warrantee.

One very simple and telling example is back at the application of that luxury item called bird shit. This single point of interface, when performed incorrectly leads to more failures than all other mishaps combined. When replacing finals, this step is often taken for granted and the Amateur is often inclined to put on too much. This is death by fire, and it often arrives quickly. This is because the same Amateur is also unaware of other provisions of correct mounting that quickly increases the Thermal Resistance several fold (easily double, triple or worse) at the most critical interface = connecting to that lifeboat, the heat sink.

Well, perhaps too much explanation, you can certainly survey the other postings for their entertainment value in the form of cut-and-paste theory or equipment operator myths.

73's
Richard Clark, KB7QHC

1701. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 21:40:47 UTC
From: Dilon Earl <dilon_earl@lycos.com>
Message-ID: <us2mhvcaf7gqh8m4c553kfi1mjsls2l83f@4ax.com>
Source record: 112144

On Sat, 19 Jul 2003 15:25:47 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Dilon Earl wrote:
>>>You can indeed get 200 watts
>>>to (incident upon) the antenna with a 100 watt transmitter. Trouble
>>>is, the antenna only accepts half of that power.
>>>
>> Where does the other 100 watts go?
>
>It is reflected back toward the source. It causes standing waves
>and additional losses in the transmission line.
>
>>>>For some reason I need a circulator on my SB-401.
>>>
>>>Only if you allow reflected energy to reach your SB-401.
>>
>> How can I stop it from reaching my SB-401?
>
>Does the SB-401 have an adjustable Pi-net output? If so,
>you can adjust it for a Zg-match which will keep reflected
>energy from being incident upon the SB-401 amp. If not, you
>can use an external antenna tuner.

So I can change my reflected power, or SWR by adjusting my Pi-net
output?

I have never seen either one change when changing my load and tune
controls.

1702. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 22:10:26 UTC
From: Dilon Earl <dilon_earl@lycos.com>
Message-ID: <us3mhv4jmn0v2fnitluuvl1d2cclf2r2dl@4ax.com>
Source record: 112145

On Sun, 20 Jul 2003 21:26:02 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:

>On Sat, 19 Jul 2003 20:06:41 GMT, Dilon Earl <dilon_earl@mail.com>
>wrote:
>
>>On Sat, 19 Jul 2003 10:11:36 -0500, W5DXP <Cecil.A.Moore@ieee.org>
>>wrote:
>>
>>>Dilon Earl wrote:
>>>> If you have a 100 watt transmitter, the watt meter shows 3 watts
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>>>> reflected power go's. But where did it come from? If I could find a
>>>> way to have 100 watts reflected I could put 200 watts to the antenna
>>>> from a 100 watt transmitter.
>>>
>>>The key word is "to", not "accepted by". You can indeed get 200 watts
>>>to (incident upon) the antenna with a 100 watt transmitter. Trouble
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>>Where does the other 100 watts go?
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>>> For some reason I need a circulator on my SB-401.
>>>
>>>Only if you allow reflected energy to reach your SB-401.
>>
>>How can I stop it from reaching my SB-401?
>>
>>Then all ham transmitters should have a circulator?
>>
>
>Hi Dilon,
>
>You sure have been lead down the primrose path. Your simple questions
>deserve better, but you have to butt heads harder to shake loose
>dearly held fantasies embodied in the melange of response littering
>the threads.
>
>If you have three Watts reflected, it came from the transmitter and in
>fact never left it, it simply turned to heat. The meter is indicating
>a condition, not forcing it. A fever thermometer in your mouth will
>tell you that you have a temperature in excess of the surrounding
>environment (a clear mismatch except for rare summer days) and yet the

>thermometer is not responsible for your fever (Thoreau once offered
>that we were more comfortable before the thermometer's invention).
>
Ok, if it never left the transmitter, why or would there be a loss in
the feedline due to high reflected power?

>If you pulsed your transmitter with a short enough pulse, then you
>would have another rare example, a power that returns to the source -
>literally. However, after the first cycle of any HF transmission (or
>even partial cycle) that opportunity is lost forever (until you key-up
>to offer another short-lived opportunity with the future prospect of
>another key-down).
>
>You can use a circulator to heat a dummy load if you wish, or you
>could use a tuner to reflect that power back to the antenna. You may
>well wonder why a circulator was offered in the first place.
>Rhetorical gamesmanship is the answer which has nothing to do with
>offering any real solution to you.

I didn't see where a circulator had anything to do with my original
question. My SB-401 doesn't have one.

>
>Another Rhetorical game involving the addition of 100W reflected to
>the original 100W now being added simply avoids the obvious that if
>you could force such a condition, then your 200W would be completely
>reflected too (what's the point unless you are intent in building a
>black hole generator?). And then you could project, "can I add 100W
>to the 200W reflected?" The cautionary response would be "can your
>rig stand to take the reverse boxcars of a train of
>300/400/500...1GW...1TW.... coming back at it?" With a shorted
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>reductio ad absurdum would quickly pile up these powers in one second
>of key-down.
>
>Is it any wonder the manufacturers nip this in the bud? The
>clumsiness of such rhetoric is revealed through the obvious example of
>you not having been blasted into a smoking crater when tuning into
>even a slight mismatch.
>
>What can 3W do?
>
>Take a christmas tree bulb and light it up. Now grab it in a closed
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>gloves (offered to prevent the rhetorists from chiming in about shock
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>blistered with. They do this by careful design of "Heat Sinking"
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>packaging issue that have ratings in thermal resistance. The standard
>thermal resistance for a TO-220 transistor (flange style case) sitting
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>presumably the source of the original 100W (which is NOT the power
>being absorbed by the transistor) and as a consequence, and through
>inefficiency (typically in the 40-60% range for a simple design) it
>might offer far in excess of 200 ï¿½C above ambient very quickly before
>it suffered catastrophic failure. This is why there are heat sinks.
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>When that same transistor is butted up against a finned sink, it also
>suffers issues of impedance mismatch and energy transfer problems.
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>conducting compound, there are also modern gaskets that do this job,
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>properly applied and the tab mounted against the card that holds it,
>it will lower that original Thermal Resistance from 4.5 ï¿½C/W by 70%
>to 1.25 ï¿½C/W. That same 3W will now elevate the transistor case
>temperature by 3.75 ï¿½C - nearly 10 degrees cooler.
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>If you were to clamp that flange against a proper heat sink with fins
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>even further.
>
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>at junction temperature, and there is far more resistance between the
>junction and the case than there is between the case and ambient.
>Have I lost you yet? If we harken back to that same TO-220 and ask
>what the Thermal Resistance is from junction to ambient, we would find
>it is 65 ï¿½C/W and the temperature for 3W is sufficient to boil water
>at the junction (remember that blister for the small coil of filament
>against the finger pad?). Now add the efficiency lost to heat to
>generate the original 100W!
>
>This is where we get into catastrophic failures because that heat
>alone (the inefficiency of generation) is high enough to melt the
>junction's connections ... open circuit. Obviously TO-220's are not
>used in a single package, without heat sinks, to source your 100W,
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>
>When you are pouring the coals to the antenna and the wind breaks it
>presenting a fully reflecting load (the pits); you now have a zero
>efficiency situation at the finals. Where they roasted along at a

>marginal 200 ï¿½C, they quickly climb in an attempt to support heat
>capable of melting junctions and connections. You will notice that
>such advice as "your source does not dissipate reflected power,"
>suggesting that you are safe, comes free and without warrantee for
>very good reasons. No one is going to foot the bill of your rig
>needing a new finals deck, and they will laugh at you to boot.
>
>Does 3W present any hazard? I dare say absolutely no one will warrant
>their advice to that either. :-)
>
>The reason (from their being burned before) is that no situation is
>comparable to their own or any other for that matter, and your rig may
>indeed be running with exceptional heat problems where 3 more Watts
>begins what is known as Thermal Runaway. Watch them rock on their
>rhetorical heels if you ask for this warrantee.
>
>One very simple and telling example is back at the application of that
>luxury item called bird shit. This single point of interface, when
>performed incorrectly leads to more failures than all other mishaps
>combined. When replacing finals, this step is often taken for granted
>and the Amateur is often inclined to put on too much. This is death
>by fire, and it often arrives quickly. This is because the same
>Amateur is also unaware of other provisions of correct mounting that
>quickly increases the Thermal Resistance several fold (easily double,
>triple or worse) at the most critical interface = connecting to that
>lifeboat, the heat sink.
>
>Well, perhaps too much explanation, you can certainly survey the other
>postings for their entertainment value in the form of cut-and-paste
>theory or equipment operator myths.
>
>73's
>Richard Clark, KB7QHC

Thanks for taking the time to answer my questions. Its too bad a
newbie with a few simple questions can't ask them and get answers to
them. 99% of the answers made no sense to me. But I guess if they
did, There wouldn't be reason for me to ask my simple questions?

1703. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 22:32:32 UTC
From: radio phun <diggydogge@yahoo.com>
Message-ID: <3f1b15dd$1@snipnews.snip.net>
Source record: 112146
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

"Rob Kemp" <robkemp90210@hotmail.com> wrote in message
news:6114e4af.0307200743.77d5e419@posting.google.com...
> The claim that BPL is good for rural deployment is yet another myth
> propagated by the BPL lobbyists. In essence it is bait and switch. The
> BPL strategy is to get the FCC to allow the high levels of
> interference / pollution as the FCC is focused on getting broadband to
> rural communities that don't have it.

I have several friends in the "corn & wheat belt" of
Iowa and Nebraska. (I broker farm equipment)
All of them have internet access, either via traditonal
dialup or some who have DSL via telco fibre taps
in the trunks that run btwn the cities. Wireless BPL
would not be a seller. (one enterprising customer
in Ohio I know has set up his own wireless LAN that
covers a good chunk of his 4000 acre farm. He can
surf the web on his laptop while inside the cab of
his aftermarket A/C equipped John Deere 9000
Series Combine

> In reality, if the BPL lobbyists succeed, they will immediately focus
> on the wealthy suburban markets that are profitable (and already have
> cable and DSL) and ignore the rural areas.

Very true! Suburban customer and the VERY lucrative
College Campus market(s) are the real target
of this technology.

> The existing DSL broadband technology is proven and could be provided
> to almost everyone who has a phone, the barriers are political not
> technical. The solution to universal broadband lies in ensuring the
> phone companies serve all of their customers equally. BPL is a broken
> and polluting technology that is a pure distraction to the objective
> of universal broadband.

The problem is there is one person at the FCC who
has known connections and investments into numerous
telecom corporations. His name is Michael Powell.
Get the big picture? Powell is to the FCC, what Murdoc
is to mass media.....

For an example of what I mean, go to the link below for more info :

http://www.alternet.org/story.html?StoryID=16032

1704. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 23:06:58 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <VYH$JqBSCyG$EAnu@ifwtech.co.uk>
Source record: 112147

W5DXP wrote:
>> Think what would have happened if you had measured the impedance at
>>the TX end of your o/c transmission line (very high or very low,
>>depending on the length) and replaced it with a resistor and
>>inductor/capacitor giving the same value of R +/- jX.
>> There's no transmission line, so no traveling waves of anything, and
>>no reflections - just a transmitter with a very wrong value of load
>>impedance. The 1625s would have burned up just the same.
>
>Yes they would, but in that case reflections are not the cause of the
>impedance.

Good... hold that thought.

>In the first case, reflections are the *CAUSE* of the
>impedance that burned up the transmitter.

Correct; and the values of R and +/-jX that the transmitter sees are
calculated by considering the reflected voltage and current waves.

So now we have two cases, one where reflections happen and one where
they can't. The transmitter suffers exactly the same problem in both
cases, entirely because it sees the same wrong value of wrong load
impedance.

"Reflected power" simply doesn't enter into it.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1705. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 23:18:37 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <ooQw1jCNNyG$EADk@ifwtech.co.uk>
Source record: 112148

W5DXP wrote:
> Even if the 1625's can't tell the difference, W5DXP can. :-)

That's the whole point - the *only* difference is a conceptual one that exists inside your mind.

It has no reality out here in the physical world of measuring instruments and engineering, which is the place where the 1625s live (and sometimes die).

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1706. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-20 23:32:23 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <TIi+dTAHayG$EAnB@ifwtech.co.uk>
Source record: 112149

William E. Sabin wrote:
>W5DXP wrote:
>
>> William E. Sabin wrote:
>>
>>> If the transmission line input impedance is replaced with a lumped
>>>LCR circuit, then confusion disappears and we have a conventional
>>>problem in AC circuit analysis.

Yes! That principle of impedance substitution is so simple, so
fundamental, some people never notice it's there at all.

>> Some confusion disappears. Some additional confusion arises. It
>>should
>> be recognized that replacing a V/I impedance with an impedor is a shortcut
>> and doesn't necessarily represent reality. Math models certainly do not
>> control reality. For instance, ghosting is not the same in the two cases.
>> A TDR will not give the same results.
>
>I give up.

Me too, Bill... I've been following this in the breaks from a hard
working weekend, but now the working week is about to start all over
again. Enough already.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1707. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:02:53 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhmbdlen3p3g6b@corp.supernews.com>
Source record: 112150

Well, let's see. We can start with an isotropic antenna, which distributes its power equally in all directions. I did that one three days ago on this newsgroup, in the thread "Theoretical antenna question". The result is that the power density from an isotropic source at any distance r is

PD = P / (4 * pi * r^2)

where P is the total power radiated. Power density PD will be in watts/square meter if P is in watts and r is in meters.

In the far field, the field strength E from any antenna is sqrt(PD * Z0), where Z0 is the impedance of free space, very nearly 120 * pi ohms. E is in volts/meter if PD is watts/meter^2 and Z0 is in ohms. Substituting in the first equation gives

E = sqrt[(P * Z0) / (4 * pi * r^2)] ~ sqrt(30 * P) / r

So that's the field strength from an isotropic source. In free space, the power density from a dipole in its most favorable direction is 1.64 times the power density from an isotropic source at the same distance. This is the dipole's directivity which, if it's lossless, is the same as the gain (2.15 dBi). You can find this derivation in nearly any antenna text. So the field from a free-space dipole in its best direction is

E = sqrt(1.64 * 30 * P) / r = 7.01 * sqrt(P) / r

Roy Lewallen, W7EL

Dr. Slick wrote:
> Hi Folks,
>
> Someone once mentioned the following to me:
>
>
> "You can calculate field strength from power and distance according to
> this formula I found in an old broadcast engineering handbook...
>
> e = 7 * sqrt(P) / d
>
> where e = field strength in volts/meter, d = distance in meters, P =
> power in watts. Antenna is assumed to be 1/2 wave dipole."
>
>
> I'd like to know exactly how this simple formula was derived.
>
> Any info greatly appreciated.

>
>
> Thanks,
>
> Slick

1708. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:14:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <m59mhvgdlqhsenvl17gqog9q4b0fth4ilb@4ax.com>
Source record: 112151

On Sun, 20 Jul 2003 22:10:26 GMT, Dilon Earl <dilon_earl@lycos.com>
wrote:
>>If you have three Watts reflected, it came from the transmitter and in
>>fact never left it, it simply turned to heat. The meter is indicating
>>a condition, not forcing it. A fever thermometer in your mouth will
>>tell you that you have a temperature in excess of the surrounding
>>environment (a clear mismatch except for rare summer days) and yet the
>>thermometer is not responsible for your fever (Thoreau once offered
>>that we were more comfortable before the thermometer's invention).
>>
>Ok, if it never left the transmitter, why or would there be a loss in
>the feedline due to high reflected power?

The 3W you measured was/is at the transmitter end of that feedline, it
could have been 30W at the load, but the feedline burnt up 27W as it
came back (it also burnt up the same proportion of that power going
forward). One of the truisms of measuring SWR is that a lossy line
will make the worst of load reflections look better.

In a sense you could say that a lossy line is cooling your
transmitter. Think of it as a remote heat sink. ;-)

SWR can be thought of as being derived from an equivalent lumped load
attached directly at the antenna jack (it is) or as from the long
system variable extended across space and storing energy (it is). You
should judge the character of an answer as needing to respond to BOTH
views in proportion to actual circumstances. Neither is independently
correct to the exclusion of the other (and this is why some discussion
devolves into pulses).

>>
>>You can use a circulator to heat a dummy load if you wish, or you
>>could use a tuner to reflect that power back to the antenna. You may
>>well wonder why a circulator was offered in the first place.
>>Rhetorical gamesmanship is the answer which has nothing to do with
>>offering any real solution to you.
>
>I didn't see where a circulator had anything to do with my original
>question. My SB-401 doesn't have one.

Nobody uses one. I would hedge that call with saying they are found
in "some" repeater installations, but only if the designer has the
sheckles (or savvy) to rummage one up.

>>
>>Well, perhaps too much explanation, you can certainly survey the other

>>postings for their entertainment value in the form of cut-and-paste
>>theory or equipment operator myths.
>>
>>73's
>>Richard Clark, KB7QHC
>
>Thanks for taking the time to answer my questions. Its too bad a
>newbie with a few simple questions can't ask them and get answers to
>them. 99% of the answers made no sense to me. But I guess if they
>did, There wouldn't be reason for me to ask my simple questions?

Hi Dilon,

Sometimes that is because they expect you to reference Google's archives of yesterday's posts. The problem there is that same archive is full of the same baloney offered to the last one they expected to reference the archives. Others will sometimes offer a significant search term that leads to a lengthy treatment quickly - the remainder don't have a clue and insist on proving it the hard way.

Finding real, actual data, experience, or theory is as rare here as it is anywhere when the price is nothing and the cost is high. Through "lurking" (reading, but rarely jumping into the game) over an extended period, you get to read personalities and observe personal weaknesses. If you looked back up the chain of responses and side threads, you should observe some correlations to answers offered in good faith (even if they were less than eloquent, a bit off the mark, or lost themselves).

Rarely is one blown off for simply being a newbie, but if anyone marched in here saying "I don't know how this works, but I can prove it ain't the way everyone says" - expect fried critic for dinner.

By-the-by. I noticed you referred to tube equipment along the way, or simply took up a ride with strangers (dangerous habit). Tubes exhibit the same problems with heat as transistors do. As this topic is hardly closed (if you lurk or participate, you will see your same question offered again); you should observe how denials emerge where a tube is somehow immune.

The proper expression would be tubes are somewhat immune and in fact are far more survivable than some transistor sets facing the same mismatches. Tubes also have a vastly larger surface area (of the plate) and thermal mass which offers much more resilience (the small junction meltdown happens faster) and they glow cherry red to prove it, as red as any carbon resistor flickering the guts of your rig with surplus calories. You can recognize these veiled offerings of proof of there being no way a transmitter suffers from reflected power in that they talk about everything but the obvious inferno. Having that larger surface area or mass also presents a problem though. It also comes with a larger distance from any way to sink the heat except through IR radiation and very little heat conduction (a lot is left up

to forced convection). In this sense, the Thermal Resistance is huge, and the consequent failure is found in plates that melt or grids that sag through heat expansion to the point that they short out to other internal elements. My buddy's amp got so hot that the solder connections to the socket pins of the tube (not the socket connector it plugged into) dripped to the chassis pan and opened the filament path.

If you read the dialog across enough time, you will observe that such discussion is avoided so that any particular scribbler does not leave a trail of admission to a fine point of Thevenin's theorem.... I will leave such mysteries of the inner circle to other threads. ;-)

This last is probably more your problem of obtaining a straight answer than any other source.

73's
Richard Clark, KB7QHC

1709. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:20:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b32e7$1_7@corp.newsgroups.com>
Source record: 112153

Tdonaly wrote:
> I would like to know why Cecil, for instance, uses pulses, as in a TDR, in
> order to argue a steady state point.

Do steady-state signals obey one set of laws of physics and pulses
obey a different set of laws of physics? You seem to feel so but
I just don't have that much faith!

The useful steady-state shortcuts have developed into a religion that
has no place in science. I am not opposed to steady-state shortcuts.
I am opposed to the steady-state religion that has evolved based on
faith. "Have faith, there is no such thing as reflected waves."
"Have faith, photons can be exchanged between equivalent inductors
and capacitors in a transmission line so they move sideways at less
than the speed of light instead of lengthways at the speed of light."

Particle physicists would really be interested in any proof of that.

"Have faith, a V/I ratio is identical to a physical impedance because
a source, with an IQ of zero, cannot tell the difference." "Reflections
completely disappear the instant that steady-state conditions are reached."
There are many more faith-based characteristics of the steady-state model.
These are just the ones that come to mind.
--
73, Cecil http://www.qsl.net/w5dxp

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1710. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:21:24 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <8mGSa.95380$OZ2.20553@rwcrnsc54>
Source record: 112152

Praise The Lord!!

For the first time in several months Cecil and I agree on something!

Now the question becomes: "Am I thinking like Cecil or is Cecil thinking like me?"

Or, "Are we both correct?" Or, "Are we both incorrect?"

Chicken and eggs come to mind :-)

Our Engineering degrees date to the 'olden days' and may now be out of date!!!

But, anyway, WE AGREE !!!!!!!
:-) :-) :-)

Deacon Dave, W1MCE

W5DXP wrote:
> Dave Shrader wrote:
>
>> How does the wrong load impedance comes into existence?
>> Is it not caused by the mismatch?
>
>
> Yep, the mismatch causes reflected waves which, in turn, cause the wrong
> load impedance. It's easy to see in the following thought experiment.
>
> 200W source---one second long 50 ohm lossless feedline-----open
>
> The source will output 100V at 2A for two seconds from key down and
> be perfectly happy. The "wrong" impedance arrives exactly with the
> reflected wave after two seconds. The center of the steady-state SWR
> circle is the "right" impedance and therefore will not exist after two
> seconds.

1711. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:24:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b33db_7@corp.newsgroups.com>
Source record: 112155

Richard Clark wrote:
> If you have three Watts reflected, it came from the transmitter and in
> fact never left it, it simply turned to heat.

One more example of religious faith-based physics. The three watts of
reflected power that came from the transmitter and was rejected by the
load, never left the transmitter? This bears a distinct resemblance to
the virgin birth.
--
73, Cecil http://www.qsl.net/w5dxp

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1712. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:26:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b3449$1_7@corp.newsgroups.com>
Source record: 112156

Dilon Earl wrote:
> So I can change my reflected power, or SWR by adjusting my Pi-net
> output?

No, but if a transmitter is capable of being happy, you can make
it happen.
--
73, Cecil http://www.qsl.net/w5dxp

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1713. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:26:47 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hibw7im.pminews@netnews.comcast.net>
Source record: 112154
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

On 20 Jul 2003 08:43:52 -0700, Rob Kemp wrote:

>DSL can work out to about ~ 16,000 feet from the central office. BPL
>can only go 2,000 feet from the BPL equivalent of a DSLAM, then BPL
>needs an expensive repeater installed by a linesman trained to work
>with 11,000 volt cables.

All utility repair maintainers ("linesmen") must be trained and
qualified to work with primary voltages (11,000 V in your example).
There are special tools ("hot sticks") which they use daily to work
such open lines live, and they have no hesitation to pull the fuses
and work them "cold" if need be. Even after they pull the fuses and
ground the lines, they still use the "hot sticks" which are designed
specifically for the hardware in use.

Transmission voltages (34 KV and up) are something else. Those are
never worked hot.

(As the Portland General Electric channel on my scanner chatters in
the background.)

But you are 100% on point as to what is needed and what the
utilities are liable to do.

--
73 de K2ASP - Phil Kane

1714. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:34:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b3625_7@corp.newsgroups.com>
Source record: 112157

Ian White, G3SEK wrote:
> So now we have two cases, one where reflections happen and one where
> they can't. The transmitter suffers exactly the same problem in both
> cases, entirely because it sees the same wrong value of wrong load
> impedance.

The transmitter possesses an IQ of zero. Hopefully, yours, mine, and
others exceeds that zero value. The goal is understanding. The goal
is (hopefully) NOT a reductio ad absurdum.

> "Reflected power" simply doesn't enter into it.

If you don't care about the facts, reflected power doesn't enter into it.
But if you are trying to understand the physics, certainly the reflected
power enters into it. If you don't care about understanding physics, by
all means, go with your steady-state shortcuts. But please don't try to
talk all the people who are trying to understand the physics into just
accepting your steady-state religion on faith.
--
73, Cecil http://www.qsl.net/w5dxp

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1715. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:39:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b3740_7@corp.newsgroups.com>
Source record: 112158

Ian White, G3SEK wrote:

> W5DXP wrote:
>> Even if the 1625's can't tell the difference, W5DXP can. :-)
>
> That's the whole point - the *only* difference is a conceptual one that
> exists inside your mind.

BS, Ian. My pet cockroach can tell the difference between a V/I
ratio resistance and a resistor. Why can't you?
--
73, Cecil http://www.qsl.net/w5dxp

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1716. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:42:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b37ef_7@corp.newsgroups.com>
Source record: 112159

Ian White, G3SEK wrote:
> Yes! That principle of impedance substitution is so simple, so
> fundamental, some people never notice it's there at all.

And you would apparently like to pull the wool over the eyes of everyone
who notices that the definition of impedance has changed in the process.
Shame on you for that attempt at obfuscation!
--
73, Cecil http://www.qsl.net/w5dxp

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1717. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 00:48:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b3948_7@corp.newsgroups.com>
Source record: 112160

Dave Shrader wrote:
> Now the question becomes: "Am I thinking like Cecil or is Cecil thinking
> like me?"

Maybe we are both thinking like Ramo and Whinnery, two pretty smart individuals,
who taught me most of what I know about fields and waves.
--
73, Cecil http://www.qsl.net/w5dxp

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1718. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 01:27:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhmgd7kcrnt814@corp.supernews.com>
Source record: 112161

It's important not to confuse the sort of pulses or steps used in TDR with transient sine wave conditions.

It's perfectly valid to derive the sinusoidal steady state conditions on a transmission line by looking at the transient conditions that occur from the time the source is first turned on. And because of the transient nature of the signal, the most practical way to approach this analysis is in the time domain.

TDR also (obviously) involves time domain analysis. But it's quite different. Sinusoidal transient analysis assumes a sinusoidal source that stays on once it's turned on. But TDR involves either a pulse type source that's off when the pulse reflection returns, or a step type source that provides a DC step to the transmission line. In this case, the source voltage is a stable DC value from the time of the initial step. In the case of the sinusoidal source, the source voltage continues changing while the transients are propagating.

In both cases, the sum of all forward and reflected voltages or currents have to sum to the correct values at all points, and this knowledge can be used to derive various wave components. But the results and some of the methods can be very different for the two cases. For example, when a reactive load or impedance bump is present, a simple reflection coefficient can be calculated for the sine wave, based on the reactance at the sine wave's frequency. The reflected wave will be a simple replica of the incident wave, altered only in phase and amplitude. You can't do this with a pulse or step; a reactive load changes its shape, defying a simply defined reflection coefficient. (Some confusion arises because of the use in TDR of a reflection coefficient, usually denoted rho. It's the same as the magnitude of the sine wave reflection coefficient -- but only if the anomaly or load causing the reflection is purely resistive and a constant value from DC or a low frequency up to the equivalent maximum frequency contained in the TDR pulse and viewable with the TDR system. With some TDR systems having equivalent bandwidths of over 50 GHz, this can be an onerous requirement.) Another important difference is what happens to a returning wave when it reaches the source -- reaction to a source that's off, at a stable DC value, or at some point in the cycle of a sinusoidal waveform is different.

TDR is a very valuable technique, providing important information and illuminating insights about transmission line phenomena. But great care has to be taken in extrapolating TDR observations to what happens in a sinusoidal transient or steady state environment. As readers have seen, I'm very wary of explanations of sinusoidal phenomena, either steady state or transient, that depend on drawing parallels to TDR results. You

should be, too.

Roy Lewallen, W7EL

W5DXP wrote:
> Tdonaly wrote:
>
>> I would like to know why Cecil, for instance, uses pulses, as in a
>> TDR, in
>> order to argue a steady state point.
>
>
> Do steady-state signals obey one set of laws of physics and pulses
> obey a different set of laws of physics? You seem to feel so but
> I just don't have that much faith!
>
> The useful steady-state shortcuts have developed into a religion that
> has no place in science. I am not opposed to steady-state shortcuts.
> I am opposed to the steady-state religion that has evolved based on
> faith. "Have faith, there is no such thing as reflected waves."
> "Have faith, photons can be exchanged between equivalent inductors
> and capacitors in a transmission line so they move sideways at less
> than the speed of light instead of lengthways at the speed of light."
>
> Particle physicists would really be interested in any proof of that.
>
> "Have faith, a V/I ratio is identical to a physical impedance because
> a source, with an IQ of zero, cannot tell the difference." "Reflections
> completely disappear the instant that steady-state conditions are reached."
> There are many more faith-based characteristics of the steady-state model.
> These are just the ones that come to mind.

1719. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 02:04:20 UTC
From: rhf-mail@pacbell.net
Message-ID: <e5e13af8.0307201804.60d33ceb@posting.google.com>
Source record: 112162
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

RK,

Don't know if this is really about Shortwave; may be the interference
that it can cause to Shortwave reception.

But if you have your facts right then BPL would do little for our
rural communities but would do some major harm to radio reception in
Urban Areas.

~ RHF
.
.
= = = robkemp90210@hotmail.com (Rob Kemp)
= = = wrote in message news:<6114e4af.0307200743.77d5e419@posting.google.com>...
> The claim that BPL is good for rural deployment is yet another myth
> propagated by the BPL lobbyists. In essence it is bait and switch. The
> BPL strategy is to get the FCC to allow the high levels of
> interference / pollution as the FCC is focused on getting broadband to
> rural communities that don't have it.
>
> In reality, if the BPL lobbyists succeed, they will immediately focus
> on the wealthy suburban markets that are profitable (and already have
> cable and DSL) and ignore the rural areas.
>
> DSL can work out to about ~ 16,000 feet from the central office. BPL
> can only go 2,000 feet from the BPL equivalent of a DSLAM, then BPL
> needs an expensive repeater installed by a linesman trained to work
> with 11,000 volt cables. So for a 16,000 foot run 8 BPL repeaters are
> needed.
> At the customer's pole transformer a bridge will need to be installed
> to couple the signals from the 11,000 volt line to the 110 volt line
> (imagine what would happen if the bridge failed and your sockets had
> 11,000 volts!!).
>
> However the math is worked, there is no way they can implement this
> vast array of expensive equipment in rural areas with any hope of
> meeting the alleged pricing.
>
> The existing DSL broadband technology is proven and could be provided
> to almost everyone who has a phone, the barriers are political not
> technical. The solution to universal broadband lies in ensuring the
> phone companies serve all of their customers equally. BPL is a broken
> and polluting technology that is a pure distraction to the objective

> of universal broadband.

1720. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 02:41:48 UTC
From: Joel <joel@cyberbest.com>
Message-ID: <6qISa.419$7W4.127915029@twister2.starband.net>
Source record: 112163
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

While I would love a broadband connection out here in the woods. I'm not willing to sacrifice the spectrum. I'll just stick with my StarBand satellite Internet.

Joel AG4QC

"RHF" <rhf-mail@pacbell.net> wrote in message news:e5e13af8.0307201804.60d33ceb@posting.google.com...
> RK,
>
> Don't know if this is really about Shortwave; may be the interference
> that it can cause to Shortwave reception.
>
> But if you have your facts right then BPL would do little for our
> rural communities but would do some major harm to radio reception in
> Urban Areas.
>
>
> ~ RHF
> .
> .
> = = = robkemp90210@hotmail.com (Rob Kemp)
> = = = wrote in message news:<6114e4af.0307200743.77d5e419@posting.google.com>...
> > The claim that BPL is good for rural deployment is yet another myth
> > propagated by the BPL lobbyists. In essence it is bait and switch. The
> > BPL strategy is to get the FCC to allow the high levels of
> > interference / pollution as the FCC is focused on getting broadband to
> > rural communities that don't have it.
> >
> > In reality, if the BPL lobbyists succeed, they will immediately focus
> > on the wealthy suburban markets that are profitable (and already have
> > cable and DSL) and ignore the rural areas.
> >
> > DSL can work out to about ~ 16,000 feet from the central office. BPL
> > can only go 2,000 feet from the BPL equivalent of a DSLAM, then BPL
> > needs an expensive repeater installed by a linesman trained to work
> > with 11,000 volt cables. So for a 16,000 foot run 8 BPL repeaters are
> > needed.
> > At the customer's pole transformer a bridge will need to be installed
> > to couple the signals from the 11,000 volt line to the 110 volt line
> > (imagine what would happen if the bridge failed and your sockets had
> > 11,000 volts!!).

> >
> > However the math is worked, there is no way they can implement this
> > vast array of expensive equipment in rural areas with any hope of
> > meeting the alleged pricing.
> >
> > The existing DSL broadband technology is proven and could be provided
> > to almost everyone who has a phone, the barriers are political not
> > technical. The solution to universal broadband lies in ensuring the
> > phone companies serve all of their customers equally. BPL is a broken
> > and polluting technology that is a pure distraction to the objective
> > of universal broadband.

1721. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 03:03:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b5905_3@corp.newsgroups.com>
Source record: 112165

Roy Lewallen wrote:
> It's important not to confuse the sort of pulses or steps used in TDR
> with transient sine wave conditions.

Why? Do they obey different laws of physics?

> TDR also (obviously) involves time domain analysis. But it's quite
> different.

Why? Does a TDR obey a different set of physics laws?

> The reflected wave will be a simple
> replica of the incident wave, altered only in phase and amplitude.

Not if it contains random noise and all waves contain random noise.

> TDR is a very valuable technique, providing important information and
> illuminating insights about transmission line phenomena. But great care
> has to be taken in extrapolating TDR observations to what happens in a
> sinusoidal transient or steady state environment.

Why? Does a TDR obey a different set of physics laws than sine waves?
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

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1722. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 03:05:39 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <w_mcnZo9WIkUxYaiXTWJig@comcast.com>
Source record: 112164

It might be of interest to note that old time video amplifiers with peaking coils sometimes caused ghosts on the screen that were indistinguishable from ghosts caused by reflections.

Tam/WB2TT
"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message news:VYH$JqBSCyG$EAnu@ifwtech.co.uk...
> W5DXP wrote:
> >> Think what would have happened if you had measured the impedance at
> >>the TX end of your o/c transmission line (very high or very low,
> >>depending on the length) and replaced it with a resistor and
> >>inductor/capacitor giving the same value of R +/- jX.
> >> There's no transmission line, so no traveling waves of anything, and
> >>no reflections - just a transmitter with a very wrong value of load
> >>impedance. The 1625s would have burned up just the same.
> >
> >Yes they would, but in that case reflections are not the cause of the
> >impedance.
>
> Good... hold that thought.
>
> >In the first case, reflections are the *CAUSE* of the
> >impedance that burned up the transmitter.
>
> Correct; and the values of R and +/-jX that the transmitter sees are
> calculated by considering the reflected voltage and current waves.
>
> So now we have two cases, one where reflections happen and one where
> they can't. The transmitter suffers exactly the same problem in both
> cases, entirely because it sees the same wrong value of wrong load
> impedance.
>
> "Reflected power" simply doesn't enter into it.
>
>
> --
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
> http://www.ifwtech.co.uk/g3sek

1723. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 03:43:40 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <tqicnVmVgejv_IaiXTWJkA@comcast.com>
Source record: 112166

I think the steady state solution would be a lot more palatable if the analysis started at T=0, when you turn the source on. The extra step of seeing how you reach steady state makes the latter more "real". One could almost be convinced that there are no reflections in the steady state; problem is , there would be no other explanation for standing waves, and I can measure them with unambiguous instruments.

Tam/WB2TT

1724. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 04:06:52 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hicfox2.pminews@netnews.comcast.net>
Source record: 112167
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

On Sun, 20 Jul 2003 18:32:32 -0400, radio phun wrote:

>The problem is there is one person at the FCC who
>has known connections and investments into numerous
>telecom corporations. His name is Michael Powell.
>Get the big picture? Powell is to the FCC, what Murdoc
>is to mass media.....

Oh Goody. Turn that info over to the FCC Inspector General and the U S Attorney General, because it is a violation of Federal law to be so involved and/or he is perjuring himself on the required annual Financial Disclosure form.

Because we had to sell my then-wife's AT&T stock when I joined the FCC as a field engineer, I have no sympathy for someone else who tries to slide by without such divestiture....if in fact it is happening.

You do have solid proof of that, right?

--
73 de K2ASP - Phil Kane

1725. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 04:36:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b6ebe$1_3@corp.newsgroups.com>
Source record: 112168

Tarmo Tammaru wrote:
> I think the steady state solution would be a lot more palatable if the
> analysis started at T=0, when you turn the source on. The extra step of
> seeing how you reach steady state makes the latter more "real". One could
> almost be convinced that there are no reflections in the steady state;
> problem is , there would be no other explanation for standing waves, and I
> can measure them with unambiguous instruments.

I keep wondering what laws of physics get repealed just as the system
transitions to steady-state. Do photons really start moving from side
to side instead of end to end? Do the standing waves magically sustain
themselves without any reflected waves?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1726. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 04:38:47 UTC
From: WavyDave <nowaynowhere@yahoo.com>
Message-ID: <bffqu601aou@enews2.newsguy.com>
Source record: 112070

ZZZZZZZZZINGGGGG------>

(My Head)

Guess I am still at the lowly 'operator' stage. :(

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:ssakhvc8k5a04kum6fj17th6k4gjkg7nh9@4ax.com...
> >Actually, several people (W8JI among them) have measured the output
> >impedance of common amateur linear amplifiers by at least a couple of
> >methods. The most credible measurements show, interestingly, a value
> >very close to 50 ohms when the amplifier is adjusted for normal
operation.
>
> [sotto voce] "and yet it moves" - updated to
>
> >Of course, it doesn't really matter, but people continue to make a big
> >deal out of it.
> >
> >Roy Lewallen, W7EL
> >
>
> Hi All,
>
> As offered in other postings, I challenged for some to differentiate
> between themselves as Equipment Operators, Bench Techs, and
> Cut-And-Paste Theoreticians. The "oomph" we all got from that
> response was, as I also offered, the uncomfortable groan of avoiding
> serious testing to instead indulge in eternal debates, the offering of
> puzzles, and the recitation of dead white men's work.
>
> So it follows that I am as responsible as others to differentiate
> myself to the standards I set - it takes some time, but is not
> seriously difficult. The quality of that differentiation is clearly
> in the opprobrium above which maintains "it doesn't really matter" and
> I can accept that, again, by my own terms of
> "Does it make more than 1dB difference?"
> which is more a quantitative test than the philosophical, qualitative
> assertion that got us here.
>
> The difference lies in a particular Engineering Note offered in the
> 1960's by Hewlett Packard: "Microwave Mismatch Analysis, Application
> Note 56."
>
> This note in turn references the work adopted by the National Bureau

> of Standards published in IEEE Transactions of Microwave Theory and
> Techniques, Vol. MTT-11, no. 3, May 1963, p. 179, by R.W. Beatty.
>
> These references were then expanded in book form "Microwave Theory and
> Applications," Stephen F. Adam, Prentice-Hall, 1969.
>
> I took my training in the only school of Metrology in the US in 1972
> and took these works to heart, by far and away not because they were
> so much academic (even though they qualify in spades beyond all lesser
> discussion), but because they were written for real engineers employed
> in real measure employing real tools.
>
> So much for Hubris, my own or others.
>
> The simple fact of the matter is that if accuracy is not your cup of
> tea, you wouldn't have read this far anyway. If you are concerned
> with accuracy, and by that I mean making valid measurements of RF
> power, then the Z of your source is exceedingly important in the face
> of a mismatched load.
>
> To wit I offer a simple verification of this observation and the works
> enumerated above.
>
> 1. Take one Ham transmitter capable of supporting 5 to 10W into any
> load without its ALC engaging and altering the power (this simplifies
> matters but is not strictly necessary).
>
> 2. Obtain four 50 Ohm loads each capable of supporting that same 5 to
> 10W power without causing any of those loads to change Z (this is NOT
> as simple as it may seem, but is not that difficult if you don't take
> it for granted). Power will never be applied for more than 10 seconds
> in any case during readings (or as long as it takes for your
> transmitter to settle to a stable power).
>
> 3. Obtain a Wattmeter capable of reading both forward and reverse
> power, where 5W is full scale deflection for the forward and reverse
> power.
>
> 4. You will need an assortment of cables and T connectors (choose
> your own connector style suitable for the frequency that you can
> support these methods to be described, following).
>
> 5. Confirm ALL loads do not exhibit a reverse power reading for full
> power (that same 5 to 10W) applied to them, one at a time, through
> each and every cable.
>
> 5a. For the purposes of my demonstration, I employed a device of my
> own design that I call my BVT, a Binary Variable Transmission line.
> It contains an assortment of coaxial lines arranged such that they can
> be inserted, inline, in 1 foot increments, for 0 through 32 feet. If

> this sounds familiar, it was the subject of my very first posting to
> this group some 8 years ago.
>
> 6. Apply one of those 50 Ohm loads in parallel, directly across the
> transmitter output. Use a T connector to allow another line to be
> connected in parallel as well. This port will be called the "Plane of
> the Source."
>
> 7. Combine the remaining (3) 50 Ohm loads in parallel using two T
> connectors such that one port remains open to accept a line to be
> connected in parallel as well. This port will be called the "Plane of
> the Load."
>
> 8. Connect a length of transmission line from the Plane of the Source
> to the input of the Power Meter; and in turn, connect another line
> from the output of the Power Meter to the Plane of the Load. The
> center of the Power Meter (actually one port or the other depending on
> which line you will vary in the future) is the "Plane of the
> Measurement."
>
> 8a. I have chosen to use a 2 foot line to the input of the Power
> Meter; and at the output of the power meter I have a 3 foot line
> connecting to the BVT (which contains 1 foot of line in the zero
> position) with another 3 foot line at the BVT output to the Plane of
> the Load. As such, I had the capacity to change the position of the
> Plane of the Measurement by 32 feet by one foot additions from a
> minimum separation of roughly 8 feet. This also elongates the
> distance between the Planes of the Source and Load from 8 feet to a
> maximum of 40 feet.
>
> 9. I selected 24.9MHz by accident of meeting the Power Meter's
> sensitivity and the transmitter's capacity to load this enormous
> mismatch - it also happened to be eminently suitable for the data that
> follows.
>
> ALL data was taken by first setting the output power to force a
> forward power reading of 5W (full scale) for EVERY variation, and then
> taking the reverse power reading:
>
> Initial reading 1.70W reverse
> added 1 foot 1.45W
> 2 1.20W
> 3 0.95W
> 4 0.80W
> 5 0.60W
> 6 0.50W
> 7 0.45W
> 8 0.75W
> 9 0.80W
> 10 0.90W

> 11 1.00W
> 12 1.20W
> 13 1.30W
> 14 1.40W
> 15 1.45W
>
> So, by now it may become apparent that:
> there is only one mismatched system condition;
> that condition is not impacted by any ALC action (either through it
> not being engaged, or being nullified by maintaining a constant
> forward power);
> no change in the line conditions inject any additional mismatch (the
> BVT is flat through all settings 0-15);
> there is a substantial difference in what the apparent Power is.
> there is a substantial difference in what the apparent SWR is.
>
> The power determination for this system mismatched condition, i.e. a
> power meter between two Planes of discontinuity, exhibits a low of
> 3.30W to a high of 4.55W depending on its position in, and the length
> of the path between the Planes of discontinuity.
>
> Hence the answer to the question of what difference does it make?
> -1.395dB
> Which also answers my standard: does it make more than 1dB difference?
> Yes
>
> It then follows that for a source that exhibits a 1:2 mismatch that is
> feeding a 1:3 mismatch through a 50 Ohm system, you can always expect
> some error, and that if you are ignorant of the dimensions, that error
> can be as great as roughly 1.4dB.
>
> What do the experts calculate? Well, I won't go into that math,
> that is left to the student to find through research from any of the
> three references cited. The graphs offered by each of them only allow
> for a 2:1 mismatched source facing a 2:1 mismatched load which in turn
> will yield up to a 1dB error.
>
> Why the deliberated mismatch at the source? It refutes the myopic
> discussion of source Z by rendering a known value in parallel with an
> unknown (sic) which, when is 50 Ohms in itself, must render a source
> that is NOT 50 Ohms (guaranteed in fact, and supported by the evidence
> of data forecast by methods adopted by NBS).
>
> 73's
> Richard Clark, KB7QHC

1727. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 04:44:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhmru99ppvv30b@corp.supernews.com>
Source record: 112069

Did you really read what I wrote?

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> It's important not to confuse the sort of pulses or steps used in TDR
>> with transient sine wave conditions.
>
>
> Why? Do they obey different laws of physics?
>
>> TDR also (obviously) involves time domain analysis. But it's quite
>> different.
>
>
> Why? Does a TDR obey a different set of physics laws?
>
>> The reflected wave will be a simple replica of the incident wave,
>> altered only in phase and amplitude.
>
>
> Not if it contains random noise and all waves contain random noise.
>
>> TDR is a very valuable technique, providing important information and
>> illuminating insights about transmission line phenomena. But great
>> care has to be taken in extrapolating TDR observations to what happens
>> in a sinusoidal transient or steady state environment.
>
>
> Why? Does a TDR obey a different set of physics laws than sine waves?

1728. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 05:05:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1b7594_3@corp.newsgroups.com>
Source record: 112071

Roy Lewallen wrote:
> Did you really read what I wrote?

Yep, that's why I answered. In a nutshell, what laws of physics get repealed
just as steady-state is achieved?
--
73, Cecil http://www.qsl.net/w5dxp

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1729. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 05:24:30 UTC
From: kd1@sympatico.ca
Message-ID: <3F1B790E.82B98D45@sympatico.ca>
Source record: 112072

Tarmo Tammaru wrote:
> there would be no other explanation for standing waves,

May I suggest that you consider charge.
Consider how static charge can store energy in the capacitance of the line.
Consider how moving charge can store energy in the inductance of the line.
Consider how the charge moves to change the energy distribution within the line.
Do it for a pulse of charge; then for multiple pulses.
Consider what happens when the pulses collide; consider pulses of the same polarity and different.
Do it for a step of charge; then make the step so long it looks like DC.
Do it for sinusoids.
Do it for opens, shorts and terminated lines.
Do it for matched, unmatched and disconnected sources (disconnect just after injecting the pulse, step or sinusoid).
Do it for sources at both ends of the lines.

And soon you will have an explanation which does not require waves travelling up and down the line to explain the observed voltages and currents of the standing 'wave'.

...Keith

1730. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 05:42:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhmv9t7h1625b2@corp.supernews.com>
Source record: 112073

Sorry, that's not worthy of a reply.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> Did you really read what I wrote?
>
>
> Yep, that's why I answered. In a nutshell, what laws of physics get
> repealed
> just as steady-state is achieved?

1731. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 06:40:40 UTC
From: starman <starman@tech.net>
Message-ID: <3F1B8AE8.58875425@tech.net>
Source record: 112074
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.shortwave

Phil Kane wrote:
snipped
>
> Transmission voltages (34 KV and up) are something else. Those are
> never worked hot.

I have a video of a crew working on a 'hot' transmission line of several hundred thousand volts, using a helicopter. They don't shut down the big lines unless it's absolutely necessary.

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1732. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 07:10:25 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <6i7UHBHhH5G$EAw9@ifwtech.co.uk>
Source record: 112079

W5DXP wrote:
>Ian White, G3SEK wrote:
>> Yes! That principle of impedance substitution is so simple, so
>>fundamental, some people never notice it's there at all.
>
>And you would apparently like to pull the wool over the eyes of everyone
>who notices that the definition of impedance has changed in the process.
>Shame on you for that attempt at obfuscation!

You are using that principle of impedance substitution whenever you calibrate your antenna impedance bridge using known values of resistORS, capacitORS and inductORS.

Of course *you* are aware of the difference in what's connected to the instrument - you have more information than it has. The only claim Bill and I have been making is that you cannot tell the difference from any *electrical* measurement made at a single frequency in the steady state... and those were exactly the conditions that burned up your transmitter, so the substitution principle is valid for this branch of the discussion.

That whole principle relies on the fact that, at the same frequency and in the steady state, the "definition of impedance" in terms of its electrical properties does *not* change. That's the whole point.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1733. Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 11:56:22 UTC
From: Joel Dorfan <bdorfan@fred.icon.co.za>
Message-ID: <3f1bd513$0$230@hades.is.co.za>
Source record: 112076

I want to evaluate some Yagis using NEC software. There seem to be many EZNec, MultiNec etc. etc. Which have you tried? Which offers the best value for money. I dont mind paying but dont have the time to evaluate all of the free demos.

I would appreciate some pointers from the group.

Thanks

Joel
ZS6CBA

1734. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 12:15:52 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F1BD848.FF66EFA4@gte.net>
Source record: 112077

Joel Dorfan wrote:

> I want to evaluate some Yagis using NEC software. There seem to be many
> EZNec, MultiNec etc. etc. Which have you tried? Which offers the best value
> for money. I dont mind paying but dont have the time to evaluate all of the
> free demos.
>
> I would appreciate some pointers from the group.
>
> Thanks
>
> Joel
> ZS6CBA

Visit the W4RNL site to look intot he different capabilities of NEC and miniNEC. If still available, Beezley's YO is tailored just for Yagi design and is very user friendly.

Dale W4OP

1735. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 12:15:52 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <YPQSa.99944$wk6.27357@rwcrnsc52.ops.asp.att.net>
Source record: 112078

Roy LLewellyn, Mr. EZNEC, is a regular reader of this group. He's here
to answer questions if they arise.

You can't go wrong with the author/reviser/editor available on a
daily/hourly basis.

Deacon Dave, W1MCE

Joel Dorfan wrote:
> I want to evaluate some Yagis using NEC software. There seem to be many
> EZNec, MultiNec etc. etc. Which have you tried? Which offers the best value
> for money. I dont mind paying but dont have the time to evaluate all of the
> free demos.
>
> I would appreciate some pointers from the group.
>
> Thanks
>
> Joel
> ZS6CBA
>
>
>

1736. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 13:12:03 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfgor6$ernc2$1@ID-134747.news.uni-berlin.de>
Source record: 112080

My three day use of EZNEC Demo has made EZNEC a
definite want. There is nothing that the demo
won't do, there are few differences, according to
the author. But the Demo has become my favorite
toy, and I am saving my pennies.

--
73 es cul

wb3fup
a Salty Bear

"Joel Dorfan" <bdorfan@fred.icon.co.za> wrote in
message news:3f1bd513$0$230@hades.is.co.za...
> I want to evaluate some Yagis using NEC
software. There seem to be many
> EZNec, MultiNec etc. etc. Which have you tried?
Which offers the best value
> for money. I dont mind paying but dont have the
time to evaluate all of the
> free demos.
>
> I would appreciate some pointers from the group.
>
> Thanks
>
> Joel
> ZS6CBA
>
>
>

1737. Re: 60 meter ERP

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 13:18:48 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <bfgp7o$1efp$1@news1.tribune.com>
Source record: 112081

Reg has had that software on his site for years. It is called Dipole3.exe.
That is what I used to document my antenna for 60 meters.

KA9CAR

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1add61_1@corp.newsgroups.com...
> Edward Lewis wrote:
> > I just read the QST article on 60 meters and I have some questions.
> > The FCC said that 50 watts ERP is allowed and a half wave dipole will
> > be presumed to have a gain of 0 dBd. iI don,t think most hams will put
> > up a dipole for 60 , but will use existing antennas such as 30 40 or
> > 80 meter dipoles.how would you calculate the ERP for these antennas to
> > be in compliance with the FCC.
>
> I suspect the FCC would be satisfied with EZNEC modeling results.
> Give him four uninterrupted hours, and Reg will have a software
> package for it. :-)
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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1738. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 13:22:21 UTC
From: Joel Dorfan <bdorfan@fred.icon.co.za>
Message-ID: <3f1be93b$0$229@hades.is.co.za>
Source record: 112082

Thanks Dale,
Yes I believe that YO is the application that would do the job.

The next trick is to try and get hold of Brian Beezley. There does not seem to be an updated email address for him and I can't find a site from where the software can be downloaded.

Any clues anyone?

Joel

1739. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 14:01:15 UTC
From: Dean Arthur <dearthur@silverstar.com>
Message-ID: <3F1BF22C.4962221F@silverstar.com>
Source record: 112083
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Remember the UPS-220-222 MHz fiasco? FCC granted UPS that frequency range THEN UPS found it to be useless for their purposes. We still didn't get it back. Hams in Calif had set up the Condor net covering the state on 222 - all gone!

1740. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 14:08:09 UTC
From: Dean Arthur <dearthur@silverstar.com>
Message-ID: <3F1BF3CA.7433AFD3@silverstar.com>
Source record: 112084
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

Maybe two dozen hams in Star Valley. 10K-foot mtns on east side;
9K-foot mtns on west. Virtually no HF workings here. Everybody on 2M
with repeater at north end at 8900-feet linked westward to Oregon and
southward to Henderson, Nevada through Snowbird Links. Repeater at
south end is 1,200-feet AGL for valley traffic. Another repeater in
Jackson Hole for traffic there with some of us able to access it.
Everyone else on the Internet for 'Round-the-world communications!'

1741. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 14:11:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1bf5a0_4@corp.newsgroups.com>
Source record: 112086

kd1@sympatico.ca wrote:
> And soon you will have an explanation which does not require waves
> travelling up and down the line to explain the observed voltages and
> currents of the standing 'wave'.

Yes, soon you will have some mathematical shortcuts. But do mathematical shortcuts really cause photons to flow sideways between an equivalent capacitance and an equivalent inductance? Can you describe a bench experiment where photons are transferred from a capacitor to an inductor and back?
--
73, Cecil http://www.qsl.net/w5dxp

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1742. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 14:13:42 UTC
From: Dean Arthur <dearthur@silverstar.com>
Message-ID: <3F1BF517.B2454AE7@silverstar.com>
Source record: 112085
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

>...> Shoot, propose simultaneously that hams be allowed 50 kilowatts
output. Not that either of these are remedies for the potential
problem but
>...> maybe it will help the FCC understand whats going on.

Drat. My DER-325 was scrapped out in Hong Kong. Would have loved to
have the GRC radio system on board. Maybe the fore and aft masts, too.
16 dipole elements on forward radar mast operating on 220 MHz with 300+
mile range would have been cat's meow for long distance work and on a
measly 300 kilowatts!!

1743. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 14:28:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1bf9b1_4@corp.newsgroups.com>
Source record: 112087

Roy Lewallen wrote:

> W5DXP wrote:
>> In a nutshell, what laws of physics get repealed
>> just as steady-state is achieved?

> Sorry, that's not worthy of a reply.

OK, I'll answer it. No laws of physics get repealed just as
steady-state is achieved. All the steady-state model does is to
allow some mathematical shortcuts. (But it does not allow photons
to oscillate locally between equivalent lumped circuit constants.)

Some people apparently believe that those steady-state mathematical
shortcuts turn around and effect reality. Causing something happen in
reality by just thinking about a mental model is the domain of religion,
not science. The steady-state model does NOT effect reality. Conditions
on a transmission line are exactly the same whether the steady-state
model is used or not. Nothing magic, like disappearing standing waves,
happens at the instant steady-state is achieved.

Too many engineers believe in the primacy of consciousness rather
than in the primacy of existence.
--
73, Cecil http://www.qsl.net/w5dxp

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1744. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 14:39:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1bfc1d_4@corp.newsgroups.com>
Source record: 112088

Ian White, G3SEK wrote:
> You are using that principle of impedance substitution whenever you
> calibrate your antenna impedance bridge using known values of resistORS,
> capacitORS and inductORS.

Yes, but I comprehend what I am doing. For you to imply the "electrical
properties don't change" between a 50 ohm dummy load and a 50 ohm dipole
antenna is simply ridiculous.

> That whole principle relies on the fact that, at the same frequency and
> in the steady state, the "definition of impedance" in terms of its
> electrical properties does *not* change. That's the whole point.

The electrical properties *can* change and that's the whole point. The
electrical properties of a 50+j0 dummy load and a 50+j0 antenna are
almost completely different.

A transmission line can transfer photons. Can a lumped constant L-C
model transfer photons?
--
73, Cecil http://www.qsl.net/w5dxp

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1745. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 14:49:21 UTC
From: richardharrison@webtv.net
Message-ID: <21706-3F1BFD71-79@storefull-2314.public.lawson.webtv.net>
Source record: 112090

Ian, G3SEK wrote:
"A related topic would be the effect of tank circuit Q on bandwidth of HF amplifiers;"

Class A amplifiers are little used as HF finals, so in practical amplifiers current is only part-time.

Impedance of a parallel resonant circuit is high. Circuit impedance rises with inductance. Q rises with capacitance.

A Class C plate tank introduces a load on tube or transistor. It should waste only a small percentage of the power generated. It should have enough Q to linearize the output of the amplifier.

Terman says it is easy to show that the Class C tank circuit efficiency is: 1 - Qloaded/Qunloaded.

Loaded Q is the ratio of the circulating volt-amperes to the transmitted watts. If Q is too high, bandwidth is too narrow. If Q is too low, harmonics are high.

As Q is ordinarily high, the tank circuit impedance is higher than the load on the amplifier.

Impedance on the Class C amplifier has little effect on the tube or transistor loading. Output impedance presented by the transmitter to the load is determined in many cases by the percentage of the time the amplifier is switched-off.

Best regards, Richard Harrison, KB5WZI

1746. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 15:03:26 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <MIKcnQIygKlcnYGiXTWJhQ@crocker.com>
Source record: 112089
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

"W7TI" <noway@nohow.com> wrote in message
news:s4unhv0o4i3eabbhpsupo39mqjc45etdia@4ax.com...
> On Mon, 21 Jul 2003 00:26:47 GMT, "Phil Kane"
> <Phil.Kane@nov.shmovz.ka.pop> wrote:
>
> >Transmission voltages (34 KV and up) are something else. Those are
> > never worked hot.
>
> ____
>
> "Never"? A few years ago there was a video on one of the cable channels
> showing a crew changing an insulator on a several hundred KV line while
> hot. It ran about a half hour. Fascinating.
>
voltages up to at least 765kv are worked hot in the states. there is a
helicopter company that specializes in this kind of work so that those lines
don't have to be shut down to do repairs. lower voltages like 115kv and
69kv are worked hot with fiberglass 'hot sticks'.

1747. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 15:57:19 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <kN-cnQ6SHvT4kIGiXTWJiA@comcast.com>
Source record: 112091

Cecil,

Try this out. For a line driven by a sin wave, there is a lumped parameter equivalent circuit with impedance R + JX for any line length and any termination. For a line exited by a pulse, this equivalent circuit is an infinite series with nuls at n/PW; there is no length of line where the line is resonant.

Tam/WB2TT
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1b32e7$1_7@corp.newsgroups.com...
> Do steady-state signals obey one set of laws of physics and pulses
> obey a different set of laws of physics?

1748. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 16:23:52 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <NLEJ96AYOBH$EAdM@ifwtech.co.uk>
Source record: 112093

W5DXP wrote:
>Ian White, G3SEK wrote:
>> You are using that principle of impedance substitution whenever you
>>calibrate your antenna impedance bridge using known values of
>>resistORS, capacitORS and inductORS.
>
>Yes, but I comprehend what I am doing. For you to imply the "electrical
>properties don't change" between a 50 ohm dummy load and a 50 ohm dipole
>antenna is simply ridiculous.
>
I didn't either say that or imply it. What's truly "ridiculous" is for
you to *infer* that I did.

I think I've already made my points well enough for other readers to
judge, so I really am done this time.

No doubt you'll have the last word, Cecil. Use it well.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1749. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 16:36:17 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <5EUSa.101339$OZ2.20828@rwcrnsc54>
Source record: 112092

Was Descartes an engineer??

DD, W1MCE

W5DXP wrote:

> Roy Lewallen wrote:

[SNIP]

> Too many engineers believe in the primacy of consciousness rather
> than in the primacy of existence.

1750. Re: RatTail Antenna Booster

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 16:52:56 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <ITUSa.112913$Io.9669217@newsread2.prod.itd.earthlink.net>
Source record: 112094

Hi Scott -

This is an interesting question.

A device like this SHOULD work, as the typical HT suffers tremendously from the lack of a "counterpoise." One only has to see how the typical end-fed half-wave HT antenna completely destroys a quarter-wave HT antenna, to get the point.

HOWEVER: I have tried using a quarter-wave stub (like the rattail), connected directly to the coax connector... and it seems to do almost NO good. I'm frankly at a loss to explain this.

I'm convinced that some of the short duckies are tuned to expect the counterpoise effect of the little HT chassis, capacitively coupled to a human body; so maybe there's a reason why they wouldn't benefit from a quarter-wave stub. But I have no theory why a full-sized quarter-wave antenna doesn't perk up more when a stub is added.

Maybe some of our computer modeling fans can propose an explanation.

73, Ed W6LOL

"Scott Drumm" <denagoth@midsouth.rr.com> wrote in message news:KOBSa.89572$X43.61039@clmboh1-nws5.columbus.rr.com...
> Anyone tried this out on their HT? Does it work as advertised?
>
> http://rattailantenna.com/
>
> I was thinking about buying one for my IC-T22A. I've replaced the stock
> rubber duck w/ a Smiley SLD-2 12" 5/8 antenna, but want to see if I can
> reach some more distant stations.
>
> Thanks for the help!
>
> Scott Drumm
> N3XFD
>

1751. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 16:58:14 UTC
From: richardharrison@webtv.net
Message-ID: <25661-3F1C1BA6-383@storefull-2313.public.lawson.webtv.net>
Source record: 112095

Nic Santeen wrote:
"The RF source applied to a dipole generates a magnetic field and
electric field 90 degrees out of phase (it is a capacitive antenna)."

It could be an inductive antenna or a resonant (resistive) antenna, and the radiation fields, E&H, would still be at right angles in space, in the plane of the plane wave, perpendicular to each other and to the direction of travel.

Static fields distant from a current-carryinng wire are in a small way analogous. Imagine the current flowing toward you. Electric lines radiate like spokes radially positioned around the wire. Magnetic lines are concentric and make circles around the wire. At great diatance from the wire, the magnetic and electric lines are practically perpendicular and they are both perpendiicular to the direction of energy flow. Don`t make too much of this analogy, but it may be illustrative.

Borrow a copy of Terman`s 1955 edition from a library and study page No. 1.

BNest regards, Richard Harrison, KB5WZI

1752. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 17:12:42 UTC
From: richardharrison@webtv.net
Message-ID: <25662-3F1C1F0A-131@storefull-2313.public.lawson.webtv.net>
Source record: 112096

I left out the word "tank" in the sentence: Tank impedance on the Class C amplifier has little effect on tube or transistor loading." Sorry. Sometimes I delete too much when I shuffle things on the screen, I should write it first.

Best regards, Richard Harrison, KB5WZI

1753. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 17:39:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1c2642_2@corp.newsgroups.com>
Source record: 112097

Tarmo Tammaru wrote:
> Try this out. For a line driven by a sin wave, there is a lumped parameter
> equivalent circuit with impedance R + JX for any line length and any
> termination.

Yes, but that's ALL it is - just an equivalent circuit. "Equivalent"
doesn't mean equivalent radiation. "Equivalent" doesn't mean equivalent
forward and reflected waves. It ONLY means equivalent NET voltage and
equivalent NET current at a point. It is a shortcut. It does NOT effect
reality. Past the net voltage and net current point absolutely nothing
is equivalent.
--
73, Cecil http://www.qsl.net/w5dxp

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1754. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 17:44:02 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1c276a$1_2@corp.newsgroups.com>
Source record: 112098

Ian White, G3SEK wrote:

> W5DXP wrote:
>> Yes, but I comprehend what I am doing. For you to imply the "electrical
>> properties don't change" between a 50 ohm dummy load and a 50 ohm dipole
>> antenna is simply ridiculous.
>>
> I didn't either say that or imply it. What's truly "ridiculous" is for
> you to *infer* that I did.

I didn't have to infer anything, Ian, those words in quotes are *your
quoted words*. Here they are again:

> That whole principle relies on the fact that, at the same frequency
> and in the steady state, the "definition of impedance" in terms of
> its electrical properties does *not* change.

That certainly implies that there is no difference between the electrical
properties of the impedance of a 50 ohm dummy load and a 50 ohm antenna.
--
73, Cecil http://www.qsl.net/w5dxp

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1755. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 18:14:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhobcf4dnu5af6@corp.supernews.com>
Source record: 112099

You can contact Brian at his callbook address:

Brian Beezley, K6STI
3532 Linda Vista Dr.
San Marcos, CA 92069

He only accepts orders by mail.

Roy Lewallen, W7EL

Joel Dorfan wrote:
> Thanks Dale,
> Yes I believe that YO is the application that would do the job.
>
> The next trick is to try and get hold of Brian Beezley. There does not seem
> to be an updated email address for him and I can't find a site from where
> the software can be downloaded.
>
> Any clues anyone?
>
> Joel
>
>

1756. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 18:26:44 UTC
From: jder8745@aol.com
Message-ID: <20030721142644.00649.00000283@mb-m25.aol.com>
Source record: 112100

Reg, G4FGQ wrote:
"All antenna "systems" are resonant because they present a resistive
load to the transmitter. QED."

==========

But...is an antenna "system" (undefined) the same as an antenna?

Methinks an antenna is just one part of an antenna "system" and that it doesn't need to be resonant.

73 de Jack, K9CUN

1757. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 18:28:04 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1C30B4.F2F1283@uci.edu>
Source record: 112101

W5DXP wrote:
>
> Jim Kelley wrote:
> > "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> > Exactly like the other scenario, yeah, like the extra .033 Kw makes no
> > difference. That's a good one, Cecil :-)
>
> In the first scenario, the 0.033 Kw was loaded into the system before
> steady-state conditions were established.

That doesn't help get you out of any trouble here, Cecil. Nice try
though.
> The s-parameter equations
> consider the power reflected from a mismatched load as another source
> of power in the system. The two scenarios are very similar.

They differ in that one of them utilizes a third more power. Your
problem proves that your analysis and the notion of power flow are
flawed.

> Each of these rearward-traveling waves contains |35.36V*0.707A| = 25 joules/sec

Waves are not 'containers' for a rate of transfer of energy.

> They superpose to zero. What happens to that 50 joules/sec of rearward-
> traveling energy?

As Timo and I have both said to you, it can be shown that that 50
joules/sec does not travel rearward.

> You have already admitted that wave cancellation is
> responsible for Pref1 being zero.

"Admitted" is a funny word for it.

> When waves cease to exist, they are forced to give up their intrinsic energy.

Waves don't cease to exist. They either do exist, or they don't exist.
V3 and V4 are not manifested to the left of the boundary when conditions
dictate they would be equal in amplitude and 180 degrees out of phase.
And of course neither wave is defined to the right of the boundary.

73, AC6XG

1758. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 18:36:29 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <8kcohv4h8fjesbi4p903e9il076jv2h5f8@4ax.com>
Source record: 112103

And don't even think of trying to run it under XP.

Danny, K6MHE

On Mon, 21 Jul 2003 11:14:38 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>You can contact Brian at his callbook address:
>
>Brian Beezley, K6STI
>3532 Linda Vista Dr.
>San Marcos, CA 92069
>
>He only accepts orders by mail.
>
>Roy Lewallen, W7EL
>
>Joel Dorfan wrote:
>> Thanks Dale,
>> Yes I believe that YO is the application that would do the job.
>>
>> The next trick is to try and get hold of Brian Beezley. There does not seem
>> to be an updated email address for him and I can't find a site from where
>> the software can be downloaded.
>>
>> Any clues anyone?
>>
>> Joel
>>
>>

1759. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 18:54:04 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f1c3629@shknews01>
Source record: 112102

"Richard Harrison" <richardharrison@webtv.net> wrote
> It could be an inductive antenna or a resonant (resistive) antenna, and
> the radiation fields, E&H, would still be at right angles in space, in
> the plane of the plane wave, perpendicular to each other and to the
> direction of travel.

I am aware of how these vectorial fields look like ...

When I said "magnetic field and electric field are 90 degrees out of phase (it is a capacitive antenna)", I was refering that in any point in space, when the electric field peaks, the magnetic field hits zero; when the electric field drops to zero, the magnetic field change direction and peaks again in the other direction, etceteras. I said nothing about the spatial position of their vectors - which is a known, even by me.
I just said that there is a shift(!) between the sinusoidals.

My point is that a clean EM radiation has both fields in phase, which means that the scalar values of both vectors (electric and magnetic) change synchronously: when the electric field peaks, the magnetic field peaks as well, when the electric field hits zero, so does the magnetic field.

Therefore, I was saying that I suspect the superposition of two different EM radiation coming out from a dipole. These two fields do not necessarily reinforce eachother, but rather they create their own counterparts with wich they go along.

You must have misunderstood me.

> Borrow a copy of Terman`s 1955 edition from a library and study page No.
1.

Thank you for the reference.

Cordially,

Nic.

1760. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 19:13:19 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307211113.1c2030d8@posting.google.com>
Source record: 112104

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhmbdlen3p3g6b@corp.supernews.com>...
> Well, let's see. We can start with an isotropic antenna, which
> distributes its power equally in all directions. I did that one three
> days ago on this newsgroup, in the thread "Theoretical antenna
> question". The result is that the power density from an isotropic source
> at any distance r is
>
> PD = P / (4 * pi * r^2)
>
> where P is the total power radiated. Power density PD will be in
> watts/square meter if P is in watts and r is in meters.
>

That's just the power divided by the surface area of the outwardly
traveling EM wave that is a perfect sphere in the case of an isotropic
raditator.

> In the far field, the field strength E from any antenna is sqrt(PD *
> Z0), where Z0 is the impedance of free space, very nearly 120 * pi ohms.
> E is in volts/meter if PD is watts/meter^2 and Z0 is in ohms.
> Substituting in the first equation gives
>
> E = sqrt[(P * Z0) / (4 * pi * r^2)] ~ sqrt(30 * P) / r
>

This is more proof that the "transformer" action between two
antennas is highly dependant on the impedance of the medium between
them.

Roy, i don't mean to be an overly inquisitive laid-off engineer
with too much time on my hands, but how was E = sqrt (PD * Zo)
derived exactly? This is really the key equation.

Here's something else I'm wondering about. If you get an answer
of 1 uV/meter, does this mean that a perfect conductor of 1 meter
length placed in this field (polarized with the E field) will measure
1uV RMS if you measure the AC voltage on the ends? In the real world,
what sort of receiving antenna do they use to measure E fields?
Obviously, the recieve antenna will affect the measurement...perhaps
you want something broadband, so as not to favor a particular
frequency (a resonance on the receive antenna will throw off the
reading)? Perhaps something as isotropic as possible, so orientation
is not as critical. How does the FCC measure it, what equipment do
they use?

Slick

1761. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 19:25:27 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <H6XSa.102467$GL4.26610@rwcrnsc53>
Source record: 112105

JDer8745 wrote:

> Reg, G4FGQ wrote:
> "All antenna "systems" are resonant because they present a resistive
> load to the transmitter. QED."
>
> ==========
>
> But...is an antenna "system" (undefined) the same as an antenna?
>
[SNIP] NOPE!!

> Methinks an antenna is just one part of an antenna "system" and that it doesn't
> need to be resonant.
>
> 73 de Jack, K9CUN
>

1762. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 19:32:05 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307211132.266ddc9d@posting.google.com>
Source record: 112106

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhmbdlen3p3g6b@corp.supernews.com>...
>
> In the far field, the field strength E from any antenna is sqrt(PD *
> Z0), where Z0 is the impedance of free space, very nearly 120 * pi ohms.
> E is in volts/meter if PD is watts/meter^2 and Z0 is in ohms.

Oh, i think it's something like this:

Power density is in Watts per square meter, or V**2/(R*m**2).
If you accept that R = impedance of free space = Z0, then these will
cancel, and you are left with E = sqrt (V**2/m**2) = V/m.

Slick

1763. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 20:01:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1c4797_7@corp.newsgroups.com>
Source record: 112107

Jim Kelley wrote:
> Your
> problem proves that your analysis and the notion of power flow are
> flawed.

You haven't answered my question so you have not earned the right to
set up a new straw man. Why does Pref1 suddenly go to zero just as
Pref2 arrives at the impedance discontinuity?

> As Timo and I have both said to you, it can be shown that that 50
> joules/sec does not travel rearward.

You have not presented an iota of evidence that Pref2 does not travel
rearward. Half of that 50 joules/sec comes from rearward-traveling Pref2.
Sorry, until you address that contradiction in your concepts, you don't
have any creditability on this subject.

You have repeatedly refused to answer this simple question: How does
the energy in the reflected wave from the mismatched load get turned
around? We know it possesses momentum so it does turn around. What is
your physics mechanism for explaining the change in direction of
momentum of Pref2?

>>You have already admitted that wave cancellation is
>>responsible for Pref1 being zero.
>
> "Admitted" is a funny word for it.

After months of denying it, you finally admitted it. Admitted seems
entirely appropriate.

>>When waves cease to exist, they are forced to give up their intrinsic energy.
>
> Waves don't cease to exist.

That's where you are wrong. Waves cease to exist when they encounter a
matched dummy load, for instance. Waves also cease to exist when they
are destroyed by wave cancellation. Light waves cease to exist when they
encounter a perfectly flat black surface. Your assertion is false.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1764. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 20:09:48 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hidw8af.pminews@netnews.comcast.net>
Source record: 112108
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

On Mon, 21 Jul 2003 08:01:15 -0600, Dean Arthur wrote:

>Remember the UPS-220-222 MHz fiasco? FCC granted UPS that frequency
>range THEN UPS found it to be useless for their purposes.

Amateur Urban Myth Number 1. UPS never applied for, and were
never granted, a license to operate a system on 220 MHz. The push
to "develop" that band was made by "Tio Carlos" Roberts, an ex-FCC
"fair haired boy" engineer who had stayed with the agency long
enough to talk them into giving him a grant to pursue a Master's
degree in Communications Engineering on a non-competitive basis - I
would have loved to get considered for that grant but I was not of
Hispanic heritage - and then dickered around as a rather ineffective
Bureau Chief until "the industry" waved money in front of him.

The ACSB equipment that he was hawking never worked, and UPS got
tired to waiting and went to The Big Emm and bought the existing
800 MHz system.

>We still didn't get it back.

By that time, other nation-wide entities (including the American Red
Cross) had applied for and were granted licenses for more conventional
(FM) networks nationwide.

The ARRL did appeal the takeaway through the courts but the courts
did not reverse the Commission.

>Hams in Calif had set up the Condor net covering
>the state on 222 - all gone!

222 and above is still there.

--
73 de K2ASP - Phil Kane

1765. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 20:09:48 UTC
From: Phil Kane <Phil.Kane@nov.shmovz.ka.pop>
Message-ID: <cuvyxnansvbet.hidwmbg.pminews@netnews.comcast.net>
Source record: 112109
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

On Mon, 21 Jul 2003 15:03:26 -0000, David Robbins wrote:

>voltages up to at least 765kv are worked hot in the states. there is a
>helicopter company that specializes in this kind of work so that those lines
>don't have to be shut down to do repairs. lower voltages like 115kv and
>69kv are worked hot with fiberglass 'hot sticks'.

I stand corrected - my power company source was incorrect.....

--
73 de K2ASP - Phil Kane

1766. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 20:14:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfhhiq$ar1$1@hercules.btinternet.com>
Source record: 112110

> Methinks an antenna is just one part of an antenna "system" and that it
doesn't
> need to be resonant.
>
> 73 de Jack, K9CUN
>
==========

Jack, you are perfectly correct. Of course the antenna doesn't need to be self-resonant. In practice it seldom exactly is.

It is only necessary that the load presented to the transmitter should be a pure (or near enough) resistance of the required value. Which is usually 50 ohms. But it can be any resistive value as the designer may specify. I have a transmitter which requires a 75-ohm resistive load. I have worked with it across the North Atlantic Ocean on 10 watts which PROVES beyond all reasonable doubt I am right. ;o)

IF THE LOAD PRESENTED TO THE TRANSMITTER IS PURELY RESISTIVE THEN, WHATEVER REACTIVE NETWORK OR CIRCUIT PRESENTS IT, BY DEFINITION, MUST BE IN A RESONANT CONDITION, REGARDLESS OF WHAT STATE THE ANTENNA HAPPENS TO BE IN.

The idea is so simple and obvious even the guru's can't get their skulls round it. ;o)

To hosts at Tea Parties in Boston, Massachusets - I take two lumps of suger with mine.

Reg.

1767. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 20:46:13 UTC
From: dplatt@radagast.org
Message-ID: <vhok8lt77udn85@corp.supernews.com>
Source record: 112111
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

In article <cuvyxnansvbet.hidw8af.pminews@netnews.comcast.net>,
Phil Kane <Phil.Kane@nov.shmovz.ka.pop> wrote:

>>Hams in Calif had set up the Condor net covering
>>the state on 222 - all gone!
>
> 222 and above is still there.

As is the Condor Connection. The repeaters are all in the 222-225
band. My understanding is that the inter-repeater links are all on
440 these days. One or two of the repeaters are down at the moment,
but most of them are up and working.

Most of the 222-225 repeater frequency allocations here in the SF Bay
area seem to be occupied by active repeaters. Some of them are
standalone, but at least half seem to be crosslinked to local 2-meter
repeaters.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1768. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 21:06:15 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1C55C7.C8EA6583@uci.edu>
Source record: 112114

W5DXP wrote:
>
> Jim Kelley wrote:
> > Your
> > problem proves that your analysis and the notion of power flow are
> > flawed.
>
> You haven't answered my question so you have not earned the right to
> set up a new straw man. Why does Pref1 suddenly go to zero just as
> Pref2 arrives at the impedance discontinuity?

Has wave cancellation suddenly become a point of contention?

Your latest example obviously shows the weakness in your argument.

> > As Timo and I have both said to you, it can be shown that that 50
> > joules/sec does not travel rearward.

> You have not presented an iota of evidence that Pref2 does not travel
> rearward.

The absence of any evidence that it does presents a more formidable
problem, in my opinion.

> You have repeatedly refused to answer this simple question: How does
> the energy in the reflected wave from the mismatched load get turned
> around?

That's a lie, and everyone here knows it. I've answered the question
every time it was posed. Timo answer it the same way I have. Energy
does not get turned around - it never flows to the left of the
discontinuity.

> We know it possesses momentum so it does turn around.

Must be the Royal 'we'.

> What is
> your physics mechanism for explaining the change in direction of
> momentum of Pref2?

What reason can you provide for continuing to beat your neice?

> >>You have already admitted that wave cancellation is
> >>responsible for Pref1 being zero.
> >
> > "Admitted" is a funny word for it.

> After months of denying it, you finally admitted it. Admitted seems
> entirely appropriate.

That's an absolute fabrication. Revisionist history. I was the one who INSISTED that no power ever flowed back from the discontinuity. In fact you argued with me about it. You've got a major mental glich happening there, Cecil.

> Waves cease to exist when they encounter a
> matched dummy load, for instance.

The wave is transformed at a load. It doesn't simply "cease to exist". But I can see this is leading to another of your symantics arguments. You could avoid them in the future by using convention terminology. But I doubt you really want to avoid them. Seems they're the 'secret weapon' of the newsgroup warrior.

73, ac6xg

1769. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 21:07:43 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <TtCcnQNf-Lm-y4GiXTWJiA@crocker.com>
Source record: 112112

> > Methinks an antenna is just one part of an antenna "system" and that it doesn't
> > need to be resonant.
> >
and you are basically correct. an antenna is 'resonant' at only specific frequencies, even a small bit away from those frequencies it goes out of resonance but performance is virtually unchanged... if this weren't true the venerable 1/2 wave dipole and 1/4 wave verticals would only work on a single frequency... so we know from experience that you don't have to have an exactly resonant antenna.

note above i said 'frequencies'. this is to account of course for the resonances at multiples of the lowest resonant frequency.

likewise you can operate an antenna well away from it's resonances and it will still 'work'... theoretically an infinitely small dipole will radiate a field only a couple db weaker than a 1/2 wave dipole in free space... with the difference being that the 1/2 wave dipole changes the shape of the doughnut a bit, thus creating stronger fields in some directions and weaker ones in other directions. keep raising the frequency so that an antenna is longer and longer as measured in wavelengths and the pattern of these fields changes, but the total radiated power remains the same... so you can say that any antenna 'works' at any frequency and be correct.

The kicker comes when you start considering the whole system. while any antenna will radiate whatever power you get into it (minus a bit for resistance of the elements that gets lost as heat), the problem can be getting that power to go into it in the first place. this is where the 'resonant' antenna does help out. at resonance an antenna presents a purely resistive impedance to the feed line, generally this is a relatively easy load to push power into.... except of course in extreme cases of very low or very high impedances. as such it simplifies the requirements for the feedline and transmitter.

if a transmitter doesn't have to handle highly reactive loads, or extremely high or low impedances, it can be made much simpler and from easier to build or buy parts. if you have to design a transmitter to power a highly reactive load you have to be able to handle higher voltages or currents... higher voltages mean wider capacitor spacings, more insulation, and higher dielectric losses.. higher currents mean thicker conductors or expensive plating to lower resistance, and higher resistive losses.. both of those losses mean that in order to create the same radiated field intensity you need to generate more power in the transmitter to get it through the feed system to the antenna where it can be radiate. so while the antenna will radiate whatever you can give it, just getting it there in the first place

can be a chore.

1770. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 21:16:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhom1pi2qfsu36@corp.supernews.com>
Source record: 112113

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhmbdlen3p3g6b@corp.supernews.com>...
>
>>Well, let's see. We can start with an isotropic antenna, which
>>distributes its power equally in all directions. I did that one three
>>days ago on this newsgroup, in the thread "Theoretical antenna
>>question". The result is that the power density from an isotropic source
>>at any distance r is
>>
>> PD = P / (4 * pi * r^2)
>>
>>where P is the total power radiated. Power density PD will be in
>>watts/square meter if P is in watts and r is in meters.
>>
>
>
>
> That's just the power divided by the surface area of the outwardly
> traveling EM wave that is a perfect sphere in the case of an isotropic
> raditator.
>
Right.
>
>
>>In the far field, the field strength E from any antenna is sqrt(PD *
>>Z0), where Z0 is the impedance of free space, very nearly 120 * pi ohms.
>>E is in volts/meter if PD is watts/meter^2 and Z0 is in ohms.
>>Substituting in the first equation gives
>>
>> E = sqrt[(P * Z0) / (4 * pi * r^2)] ~ sqrt(30 * P) / r
>>
>
>
>
> This is more proof that the "transformer" action between two
> antennas is highly dependant on the impedance of the medium between
> them.

There's no doubt, and certainly no disagreement from me, that the mutual
coupling or "transformer action" between two antennas is strongly
affected by the medium between them.

> Roy, i don't mean to be an overly inquisitive laid-off engineer
> with too much time on my hands, but how was E = sqrt (PD * Zo)

> derived exactly? This is really the key equation.

The power density is related to E and H fields by the Poynting vector, where

PD = E X H

I'm not going to derive this one -- you can find it in any
electromagnetics text.

In the far field in a lossless medium, E is in time phase with H.
Consequently, the magnitude of PD is simply |E| * |H|. The latter two
have to be RMS values for PD in watts; for peak values, you need an
addition factor of 1/2. Again in the far field, E/H = Z0, where Z0 is
the impedance of the medium. The definition of Z0 is generally defined
in terms of the permittivity and permeability of the medium, and the far
field E/H relationship follows from it. That's another one I won't
derive here, and that you can easily find in a text. In a lossless
medium, Z0 is purely real, making the math simple.

So, (dealing now only with magnitudes) given that PD = E * H and Z0 =
E/H, it follows that PD = E^2/Z0 = H^2 * Z0. Solving for E gives the
equation you're asking about.

> Here's something else I'm wondering about. If you get an answer
> of 1 uV/meter, does this mean that a perfect conductor of 1 meter
> length placed in this field (polarized with the E field) will measure
> 1uV RMS if you measure the AC voltage on the ends?

No, it doesn't quite work out that way, because of the triangular
current distribution on the 1 meter wire (assuming that the wavelength
is >> 1 meter). The "effective height" of a wire that's short in terms
of wavelength turns out to be 1/2 the actual length.

In the real world,
> what sort of receiving antenna do they use to measure E fields?

Near field E intensity is typically measured with a short probe. Far
field measurement is done with conventional antennas. In the far field,
once the E, H, or power density is known, the other two can be calculated.

> Obviously, the recieve antenna will affect the measurement...perhaps
> you want something broadband, so as not to favor a particular
> frequency (a resonance on the receive antenna will throw off the
> reading)? Perhaps something as isotropic as possible, so orientation
> is not as critical. How does the FCC measure it, what equipment do
> they use?

To my knowledge, the FCC doesn't do any measurements. Test labs doing
far field measurements typically use a conical dipole for the HF range,
and log periodic antenna for VHF and UHF. Although these are inherently
broadband, the dipole in particular varies a great deal with frequency.
So each antenna comes with a correction factor table. That's why EMI
measurement antennas, though simple, are expensive.

Some of the FCC Part 15 measurements I've been involved with are actually done within the near field, but are done with standard antennas nonetheless. Although the conversion from power density to field strength isn't entirely valid, everybody plays by the same rules. I think some of the FCC rules for safety now required for amateurs are also in this category.

I haven't seen quantitative near field measurements being done, just qualitative ones using a short probe.

Roy Lewallen, W7EL

1771. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 22:11:12 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030721181112.06855.00000327@mb-m06.aol.com>
Source record: 112116

Cecil begs to differ:
>
>The electrical properties *can* change and that's the whole point. The
>electrical properties of a 50+j0 dummy load and a 50+j0 antenna are
>almost completely different.
>

Like what, as far as the source and feedline are concerned?
Ain't that basically "AC" RF power being produced by the TX, flowing through the transmission line, to 50+j0? (Resistance/impedance)
Who gives the hoot if that 50+j0 is power eating resistor or power barfing antenna. Call it virtual(y) non-radiating antenna or virtual(y) radiating resistor. Simply transducers looking pretty to the feedline and doing their assigned thing. F the SWR, matchit !
RIP

BUm

1772. Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 22:12:05 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307211412.57c27d0c@posting.google.com>
Source record: 112115

jder8745@aol.com (JDer8745) wrote in message
news:<20030721142644.00649.00000283@mb-m25.aol.com>...
> Reg, G4FGQ wrote:
> "All antenna "systems" are resonant because they present a resistive
> load to the transmitter. QED."
>
> ==========
>
> But...is an antenna "system" (undefined) the same as an antenna?
>
> Methinks an antenna is just one part of an antenna "system" and that it doesn't
> need to be resonant.
>
> 73 de Jack, K9CUN

It doesn't. It only needs to be matched to the line. Or maybe I should
really say, the line matched to it. As far as "resonant", the
impedance could be nearly anything. If the reactance is tuned out,
it's resonant. A dipole, appx 70 ohms in free space. But make it a two
wire folded dipole, and you jump to nearly 300 ohms. But both are
still resonant. Make it a three wire job, and you jump to 450-600
ohms???.. You get the picture. It's still resonant. Many people prefer
a
dipole fed with coax, because it's "resonant" with an appx 50 ohm
feedpoint, and needs no matching. But it's not the antenna change, or
resonance, or lack of it, that would be an improvement. It's the lack
of a matching device and it's losses. And the already good match makes
the use of coax very low loss on most HF frequencies. On the low bands
, it's about as good as some ladder lines. Being the radio is usually
appx 50 ohm, it makes that case convenient, and naturally makes the
use of the "resonant" dipole seem superior to many other methods of
feeding a dipole. And it is usually. But it could have easily been
any other impedance. There is nothing etched in stone that says it has
to be 50 ohms. Many antennas won't ever be resonant the way they are
used. And some of these can have as much or more gain than any of
them. In the case of a dipole, to me, it would be foolish to replace a
coax fed single wire dipole, with a 2 wire folded dipole, fed with
coax and a 4:1 balun. I bet the single wire dipole would be more
efficient overall due to losses in the balun. Sure, small loses, but
they are there. :(It's all mainly a matching device/feedline loss
sort of thing. If you get power to the radiator, it will radiate,
resonant or not. MK

1773. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 22:14:10 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030721181410.06855.00000328@mb-m06.aol.com>
Source record: 112117

There is also 4NEC2, free, good value for the money, does optimization too and works with MultiNEC and EZNEC.

Yuri

1774. Re: efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 22:15:37 UTC
From: <>
Message-ID: <20030721181537.07529.00000227@mb-m14.aol.com>
Source record: 112118

But aren't there ground independant verticals, like the Half Square or a
Bob-Tail-Curtain?

U of M
GO BLUE!!!

God, Guns, and Guts
Protect America!!!

1775. Re: efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 22:29:23 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030721182923.06855.00000329@mb-m06.aol.com>
Source record: 112019

>
>But aren't there ground independant verticals, like the Half Square or a
>Bob-Tail-Curtain?
>
>
>
>U of M
>GO BLUE!!!
>
>God, Guns, and Guts
>Protect America!!!
>

Every vertical "needs" the ground for its efficient performance especially at the low angles. Vertical dipoles and their elevated cousins are still "looking" out at the ground, farther waway and with a bit less of participation.
Wanna see dramatic display of salt water "ground" performance/contribution? Take your any verticaly polarized antenna and compare its performace between ground ground and salt water ground. You would see somewhere between 10 - 15 dB difference.

Yuri

1776. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 22:41:18 UTC
From: Brenda Ann <brendad@shinbiro.com>
Message-ID: <bfho11$7jk$1@news1.kornet.net>
Source record: 112020
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

"nothermark" <trash@gnomex.cotse.net> wrote in message
news:4dqohvcn4v3ms4htk1ceoldopvfpv1mg6k@4ax.com...
>
> All the colleges I know of (10 or so in 3 cities) offer broadband as
> part of the tuition. They have high speed links already as they are
> major telco customers for their telephone lines and dial in customers.
> I don't see why they would switch away from their existing bundle.

Yes, most colleges (if not all) already have T-1 or T-3 lines which are networked through every building. I seriously doubt they would ever consider BPL technology because it would be a net loss of something on the order of 70% of their current bandwidth. Each student has more or less the equivalent of something like 5% of the total bandwidth available via BPL.. (these are only guesstimates, but they are based upon figures I have seen posted about BPL's bandwidth, it starts getting down to dial-up levels by the time it's been distributed to 2,000 users..)

1777. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 23:07:13 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307211507.6147536f@posting.google.com>
Source record: 112021

Implicit in Roy's answer, but perhaps worth stating, is that the
result is for an antenna in freespace. If you are working with an
antenna over earth, things will be different because the energy is
radiated into a hemisphere instead of isotropically, and because of
interference and diffraction patterns, and absorption by the earth,
vegetation, etc. At some frequencies, absorption by things in the
atmosphere attenuates the signal, too.

Cheers,
Tom

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhmbdlen3p3g6b@corp.supernews.com>...
> Well, let's see. We can start with an isotropic antenna, which
> distributes its power equally in all directions. I did that one three
> days ago on this newsgroup, in the thread "Theoretical antenna
> question". The result is that the power density from an isotropic source
> at any distance r is
>
> PD = P / (4 * pi * r^2)
>
> where P is the total power radiated. Power density PD will be in
> watts/square meter if P is in watts and r is in meters.
>
> In the far field, the field strength E from any antenna is sqrt(PD *
> Z0), where Z0 is the impedance of free space, very nearly 120 * pi ohms.
> E is in volts/meter if PD is watts/meter^2 and Z0 is in ohms.
> Substituting in the first equation gives
>
> E = sqrt[(P * Z0) / (4 * pi * r^2)] ~ sqrt(30 * P) / r
>
> So that's the field strength from an isotropic source. In free space,
> the power density from a dipole in its most favorable direction is 1.64
> times the power density from an isotropic source at the same distance.
> This is the dipole's directivity which, if it's lossless, is the same as
> the gain (2.15 dBi). You can find this derivation in nearly any antenna
> text. So the field from a free-space dipole in its best direction is
>
> E = sqrt(1.64 * 30 * P) / r = 7.01 * sqrt(P) / r
>
> Roy Lewallen, W7EL
>
> Dr. Slick wrote:
> > Hi Folks,
> >
> > Someone once mentioned the following to me:

> >
> >
> > "You can calculate field strength from power and distance according to
> > this formula I found in an old broadcast engineering handbook...
> >
> > e = 7 * sqrt(P) / d
> >
> > where e = field strength in volts/meter, d = distance in meters, P =
> > power in watts. Antenna is assumed to be 1/2 wave dipole."
> >
> >
> > I'd like to know exactly how this simple formula was derived.
> >
> > Any info greatly appreciated.
> >
> >
> > Thanks,
> >
> > Slick

1778. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 23:15:26 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1C740E.D1967921@uci.edu>
Source record: 112024

W5DXP wrote:

> There are many more faith-based characteristics of the steady-state model.

Actually, the steady state "model" describes the observable aspects of
the phenomenon. According to a least one theorist, physics is a science
of measurement. Science is of course a study of observable phenomena.

73, AC6XG

1779. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 23:33:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhou36im7uoffd@corp.supernews.com>
Source record: 112023

Thanks for making that clear, Tom. I should also have emphasized that it's valid only in the far field, where the wave is essentially a plane wave with E/H equal to the impedance of the medium.

Roy Lewallen, W7EL

Tom Bruhns wrote:
> Implicit in Roy's answer, but perhaps worth stating, is that the
> result is for an antenna in freespace. If you are working with an
> antenna over earth, things will be different because the energy is
> radiated into a hemisphere instead of isotropically, and because of
> interference and diffraction patterns, and absorption by the earth,
> vegetation, etc. At some frequencies, absorption by things in the
> atmosphere attenuates the signal, too.
>
> Cheers,
> Tom

1780. Re: efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-21 23:51:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhov4mhoe7cca1@corp.supernews.com>
Source record: 112025

There are two quite distinct sources of ground loss involved with vertical antennas. You're talking about one, and Yuri is talking about the other. Makes for a lively discussion, but it's a lot like the blind men describing the elephant.

One type of loss is caused when it's necessary to connect one conductor of the feedline to the Earth. Current returning to this feedline conductor is equal in magnitude to the current flowing into the antenna from the other conductor, and it creates a simple I^2 * R loss flowing through the ground. This loss can be minimized by using a system of ground radials to decrease the loss resistance R near the base of the antenna, where the current density is highest. Another solution is to use a vertical antenna with a high feedpoint resistance. Examples are the half square, bobtail curtain, and half wavelength vertical. These antennas require very little feedpoint current, and consequently very little ground current. They can be very efficient with only a very simple ground system.

But there's another source of loss, encountered after the signal is radiated. When a vertically polarized signal strikes the ground, a lot of its energy is lost to heating of the ground. This is particularly true at low angles of incidence. The end result is severe attenuation of low angle radiation. Particularly for low angles, this occurs farther away from the antenna than a reasonable radial system extends. So you're stuck with this loss, unless you can physically move your antenna to a swamp or similar high-conductivity environment. Horizontally polarized waves react differently.

The demo version of EZNEC will show this quite dramatically. If you choose the MININEC type ground model, it acts like you have a perfect radial system. That is, the first source of loss I mentioned is zero. But the second is still there. You can simulate the effect of ground system loss simply by adding a resistive "load" at the antenna base. Compare the patterns of a vertical and horizontal, *to the same scale*, by superimposing them on a 2D plot, using different qualities of ground. You'll find it quite educational.

Roy Lewallen, W7EL

Yuri Blanarovich wrote:
>>But aren't there ground independant verticals, like the Half Square or a
>>Bob-Tail-Curtain?
>>
>>
>>
>>U of M

>>GO BLUE!!!
>>
>>God, Guns, and Guts
>>Protect America!!!
>>
>
>
> Every vertical "needs" the ground for its efficient performance especially at
> the low angles. Vertical dipoles and their elevated cousins are still "looking"
> out at the ground, farther waway and with a bit less of participation.
> Wanna see dramatic display of salt water "ground" performance/contribution?
> Take your any verticaly polarized antenna and compare its performace between
> ground ground and salt water ground. You would see somewhere between 10 - 15 dB
> difference.
>
> Yuri

1781. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 01:01:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1C8CF1.F7D160D@uci.edu>
Source record: 112028

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> > Has wave cancellation suddenly become a point of contention?
>
> It was our point of contention for months. Finally, you relented.

It's been my impression that wave cancellation and interference has
always been the one thing we've agreed upon.

> > Your latest example obviously shows the weakness in your argument.
>
> It obviously shows the strength of my argument since you avoid
> discussing it at all costs. :-)

If I wasn't discussing it, you obviously wouldn't have had anything to
post reply comments about. That your numbers are the same in two
scenarios, each involving a different input power level perfectly
illustrates your misinterpretion of the meaning of the numbers.

> > I've answered the question every time it was posed.
>
> But your "answer" is always a bogus non-answer, an empty mantra.

So now you agree that I've answered the question. The fact you disagree
with the answer is irrelevant to that point.

> > Energy does not get turned around - it never
> > flows to the left of the discontinuity.

> According to Ramo & Whinnery, reflected energy does indeed flow
> rearward from a mismatched load. That reflected energy possesses
> momentum in the rearward direction and changes direction at the
> impedance discontinuity. You still have not offered an acceptable
> explanation for that energy and momentum turn around.

Apparently, neither have Ramo & Whinnery. But that's understandable,
given that the idea is entirely your invention.

> > What reason can you provide for continuing to beat your neice?

> Your only response is a diversion. That speaks volumes.

It speaks Cecilian, actually. You didn't notice the similarity in
technique? It was a response in kind to the exact form of the question
you asked.

> > I was the one who
> > INSISTED that no power ever flowed back from the discontinuity. In fact
> > you argued with me about it.

> I NEVER argued with you about that.

I cannot recall a single instance of you ever agreeing with anything I've written on the subject - including (V3 + V4) * (I3 + I4) = 0, and P3+P4-(2*SQRT(P3*P4)=0. That's wave cancellation my friend, and I posted these things at the beginning of this discussion. You've always argued with the validity of these equations.

> It was a mistake to try again to be civil to you.

When did that happen?

> > The wave is transformed at a load. It doesn't simply "cease to exist".

> The energy in the wave is transformed from RF to heat by the dummy
> load. The RF wave certainly does cease to exist.

As I said, we're now in an argument over semantics caused by your creative use of terminology. "Cease to exist" in any case implies something which isn't true.

But back to the point, for what amount of time do the cancelled waves "exist" in order that they might then be able to "cease to exist"? If you say during the transient period between T0 and steady-state, then we're in agreement.

73, Jim AC6XG

1782. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 01:13:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1c73fb_2@corp-news.newsgroups.com>
Source record: 112022

Reg Edwards wrote:
> It is only necessary that the load presented to the transmitter should be a
> pure (or near enough) resistance of the required value. Which is usually 50
> ohms.

My SGC-500 amp says it will handle an SWR of 6:1 just fine.
If that is true, it means it will handle any impedance on
or inside a 6:1 circle on a 50 ohm Smith Chart. The great
majority of those impedances are not resistive.
--
73, Cecil, W5DXP

1783. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 01:43:09 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030721214309.07171.00000372@mb-m12.aol.com>
Source record: 112029

>
>Yuri Blanarovich wrote:
>> Who gives the hoot if that 50+j0 is power eating resistor or power barfing
>> antenna.
>1
>You don't care whether all your power is going into a dummy
>load or into your antenna?
>2
>We are trying to figure out something about transmission lines
>so we take away the transmission line and replace it with an
>"equivalent circuit" that doesn't act like a transmission at all?
>How in the world does that tell us anything about transmission
>lines?
>--
>73, Cecil, W5DXP
>
1
Am I getting sucked into the bottomless black hole of transmission lines?
Yea, I care! If I want to test or tune my transmitter or amplifier and need a dummy, I use dummy load. When I need to radiate killer signals I use my Razor beams, but they are designed to have 50 ohm impedance and broad bandwidth (possible, been there, done it) no matching crap, no reflections (ok very small) and I don't give a Freak about nurturing reflections on the line. I hate reflected waves and I suppress their generation/reflection/travel and endless discussions about problem that nobody wants.

2
Huh? You haven't figured that SWR is bad for transmission lines?
All I want to know about transmission line that it doesn't have impedance bumps, keeps its impedance, that it has lowest possible loss and doesn't radiate or let the water in. (That goes for open wire feeders too :-)
Oh, color doesn't matter and it should be repulsive to chipmunks and other SWR ignorant critters.
Why is this endless argument about reflections going on? We know they are bad, we know how to eliminate them, so what's the problem? You love them so much that you want to keep them in your coax?
There are no reflections around this shack, only in the mirror of my ugly face after 48 hr contest.
OK hit me now that it is impossible to have reflectionless antenna-coax-tx.
My answer, yea, there are some (very little) and they are insignificant to me to worry about and lose sleep and hours at the keyboard. Ins't it like eunuch dreaming about sex? :-)

SK
73 Yuri da noSWR BUm

1784. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 01:50:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1c7c88_2@corp-news.newsgroups.com>
Source record: 112026

Jim Kelley wrote:

> W5DXP wrote:
> Has wave cancellation suddenly become a point of contention?

It was our point of contention for months. Finally, you relented.

> Your latest example obviously shows the weakness in your argument.

It obviously shows the strength of my argument since you avoid
discussing it at all costs. :-)

>>You have not presented an iota of evidence that Pref2 does not travel
>>rearward.
>
> The absence of any evidence that it does presents a more formidable
> problem, in my opinion.

I quoted the evidence from Ramo & Whinnery. You just ignored it.

> I've answered the question every time it was posed.

But your "answer" is always a bogus non-answer, an empty mantra.

> Energy does not get turned around - it never
> flows to the left of the discontinuity.

According to Ramo & Whinnery, reflected energy does indeed flow
rearward from a mismatched load. That reflected energy possesses
momentum in the rearward direction and changes direction at the
impedance discontinuity. You still have not offered an acceptable
explanation for that energy and momentum turn around.

> What reason can you provide for continuing to beat your neice?

Your only response is a diversion. That speaks volumes.

> I was the one who
> INSISTED that no power ever flowed back from the discontinuity. In fact
> you argued with me about it.

I NEVER argued with you about that. You are back to your lying ways.
I would NEVER argue with a Bird wattmeter? You obviously have me
confused with Dr. Best. In fact, I published part of my article
saying that everything takes place at exactly the impedance discontinuity
and nowhere else. Having to lie about what I have said is just proof of
the weakness of your argument.

I'm sorry, Jim. I refuse to engage in a discussion at your chosen ethical and moral level. It was a mistake to try again to be civil to you.

> The wave is transformed at a load. It doesn't simply "cease to exist".

The energy in the wave is transformed from RF to heat by the dummy load. The RF wave certainly does cease to exist. You're not back to your phantom waves that last forever without a source of energy, are you?
--
73, Cecil, W5DXP

1785. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 01:58:10 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307211758.174ac4d2@posting.google.com>
Source record: 112030

"Joel Dorfan" <bdorfan@fred.icon.co.za> wrote in message
news:<3f1bd513$0$230@hades.is.co.za>...
> I want to evaluate some Yagis using NEC software. There seem to be many
> EZNec, MultiNec etc. etc. Which have you tried? Which offers the best value
> for money. I dont mind paying but dont have the time to evaluate all of the
> free demos.
>
> I would appreciate some pointers from the group.
>
> Thanks
>
> Joel
> ZS6CBA

Joel,
I have no experience with anything other than AO which I have used
for many years. I purchased A.O. because it had the ability of
analysing any given radiator over different quality grounds and also
for it's ability to change the geometry of a radiator so that gain,
swr, F/B e.t.c can be optimised depending on your requirement.
Since I like to rig up different geometries of radiators on the
computor
before spending time on the outside experimenting I find it very
revealing when A.O. changes things around some what to achieve say
gain which I asked the program to do. It is also a great learning tool
because you can see
where major changes occur while the program runs that gives you
insights as to
what further changes you can present to the program and follow the
computors
progress as it changes geometries e.t.c.
I have just purchaes the A.O. Pro program which cost $300.
This program is the same as the std A.O. program except it has many
more pulses available e.t.c. which is extremely useful for accuracy
when dealing with very
close spaced wires, large arrays, together with the ability to use
terms beyond inductance and capacitance but also impedance which is
invaluable when designing
frequency agile antennas. Remember, that programs can only be seen to
be accurate when programs are run repeatedly with the increasing
number of pulses
until any increase of pulse numbers does not effect a change in
results.
If you are not dealing with large arrays or close spaced radiators

where the number of pulses available is a requisite for accuracy
then the standard amateur version should suffice.
As far as I am aware the A.O. program can achieve what most of the
other programs can achieve whereas most other programs cannot achieve
what A.O. can achieve which really tells the story.
Hope the above helps you to make the right descision for you
Regards
Art

1786. Re: RatTail Antenna Booster

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 02:02:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhp6ptrq7djn08@corp.supernews.com>
Source record: 112031

The best possibility I can think of is that the impedance presented by the HT case/human hand and body is considerably lower than the impedance presented by the wire. If this is true, the body would get most of the current, and the quarter wave wire wouldn't get enough to make a significant difference to the total field. Another possibility is that coupling between the body and the quarter wave wire reduces the wire's current to a low level.

I recommend that anyone interested in HT antennas take a look at "An Investigation of 2-Meter HT Antenna Performance" by Ken Pierpont, KF4OW and Ed Brummer, W4RTZ, in the _ARRL Antenna Compendium_, Vol. 4. It looks to me like a good job of making some comparisons between antenna types. Unfortunately, they didn't try a single quarter wavelength wire, although they did try a 4-wire ground plane, and found a significant effect from it.

Roy Lewallen, W7EL

Ed Senior wrote:
> Hi Scott -
>
> This is an interesting question.
>
> A device like this SHOULD work, as the typical HT suffers tremendously
> from the lack of a "counterpoise." One only has to see how the typical
> end-fed half-wave HT antenna completely destroys a quarter-wave HT
> antenna, to get the point.
>
> HOWEVER: I have tried using a quarter-wave stub (like the rattail),
> connected directly to the coax connector... and it seems to do almost
> NO good. I'm frankly at a loss to explain this.
>
> I'm convinced that some of the short duckies are tuned to expect
> the counterpoise effect of the little HT chassis, capacitively coupled
> to a human body; so maybe there's a reason why they wouldn't
> benefit from a quarter-wave stub. But I have no theory why a full-sized
> quarter-wave antenna doesn't perk up more when a stub is added.
>
> Maybe some of our computer modeling fans can propose an explanation.
>
> 73, Ed W6LOL
>
> "Scott Drumm" <denagoth@midsouth.rr.com> wrote in message
> news:KOBSa.89572$X43.61039@clmboh1-nws5.columbus.rr.com...
>

>>Anyone tried this out on their HT? Does it work as advertised?
>>
>>http://rattailantenna.com/
>>
>>I was thinking about buying one for my IC-T22A. I've replaced the stock
>>rubber duck w/ a Smiley SLD-2 12" 5/8 antenna, but want to see if I can
>>reach some more distant stations.
>>
>>Thanks for the help!
>>
>>Scott Drumm
>>N3XFD
>>
>
>
>

1787. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 02:05:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1c8003$1_2@corp-news.newsgroups.com>
Source record: 112027

Yuri Blanarovich wrote:
> Who gives the hoot if that 50+j0 is power eating resistor or power barfing
> antenna.

You don't care whether all your power is going into a dummy
load or into your antenna?

We are trying to figure out something about transmission lines
so we take away the transmission line and replace it with an
"equivalent circuit" that doesn't act like a transmission at all?
How in the world does that tell us anything about transmission
lines?
--
73, Cecil, W5DXP

1788. Re: TV antenna question-cable length

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 02:10:26 UTC
From: gmz79@aol.comnospam
Message-ID: <20030721221026.28191.00000306@mb-m24.aol.com>
Source record: 112032

>"Henry B." <hbienert@cox.net> wrote in message
>news:loxSa.19295$b03.12633@lakeread03...
>> At the second house in the country,my TV antenna,which is in the attic, is
>> working fairly well but I wonder if shortening the cable from the present
>50
>> feet to the 20 feet I really need will help.The present cable has very
>> professional fittings at each end since it was sold as a unit .
>> I have a crimper and fittings
>>
>> --
>> Hank

Whack it down.
Might just make the difference between fairly well and very good.
It did at my cabin in the country.
KC*VIF
Greg Z
to thine own sound be true

1789. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 02:23:26 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307211823.7e9f6402@posting.google.com>
Source record: 112033

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<beuh9f$33u$1@hercules.btinternet.com>...
> > What's all this stuff about resonant antennas? Some great antenna designs
> do
> > not use a resonant length.
> >
> >
> All antenna 'systems' are resonant because they all present a resistive load
> to the transmitter. QED.

I suppose I am being picky Reg but shouldn't resonance be defined as
"totally" resistive load. An antenna can only be 'resonant' at one
point or frequency because movement from this point collects
reactance.
Fortunately it still has a 'resistive' component load which is the
PRIME requisite for radiation, whereas 'resonance' is not.
With the above being fully understood by newcomers a lot of the
mystery about 'antennas' and 'antenna systems' falls aside.
Cheers
Art

1790. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 02:37:16 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030721223716.07171.00000379@mb-m12.aol.com>
Source record: 112034

>
>Joel,
>I have no experience with anything other than AO which I have used
>for many years.

deletsky...

>As far as I am aware the A.O. program can achieve what most of the
>other programs can achieve whereas most other programs cannot achieve
>what A.O. can achieve which really tells the story.
>Hope the above helps you to make the right descision for you
>Regards
>Art
>

Does anyone see any contradiction here?
The question was about NEC based programs, AO is not NECky program.

Maybe too much SWR going on?
What a great artwise :-)

Bada NEC BUm

BTW try 4NEC2, its FREEEEEEE

1791. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 02:41:52 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030721224152.07171.00000383@mb-m12.aol.com>
Source record: 112035

F. Art unpatented:

>Fortunately it still has a 'resistive' component load which is the
> PRIME requisite for radiation, whereas 'resonance' is not.

Here is your answer Cecil. Resistor that radiates.

1792. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 03:27:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1cb013_3@corp.newsgroups.com>
Source record: 112036

Yuri Blanarovich wrote:
> Huh? You haven't figured that SWR is bad for transmission lines?

An SWR between 4:1 and 16:1 is what allows me to use a 130 ft.
$20 dipole fed with 400 ohm window line on all HF bands without
needing an antenna tuner. What's wrong with live and let live?
I find your approach to antennas boring as heck but I am not
going to rag on you about it. Different strokes for different
folks. One has to have a transmission line anyway - might as
well let it perform the matching function.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1793. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 04:03:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1cb89a_3@corp.newsgroups.com>
Source record: 112037

Jim Kelley wrote:
> I cannot recall a single instance of you ever agreeing with anything
> I've written on the subject - including (V3 + V4) * (I3 + I4) = 0,
> and P3+P4-(2*SQRT(P3*P4)=0.

You really need to get your head checked. I am the person who first posted P3+P4-[2*Sqrt(P3*P4)]=0. It is proof of wave cancellation, the event you vehemently denied for about six weeks. And I agree that (V3*I3) + (V4*I4) + interference = (V3+V4)*(I3+I4) = 0. In fact, since you admitted that wave cancellation exists at an impedance discontinuity in a Z0-matched line, we have very little disagreement left. The only thing we disagree on now is how long it takes the two rearward-traveling wavefronts to cancel. I say it happens in a dt of time as dt approaches zero. You say it happens in zero time. Just how far apart are those two concepts?

> You've always argued with the validity of these equations.

BS! You argue loud and long, eventually change your mind, and then come back in a few days with The Big Lie - that is what you believed all the while. Anyone who has been following this discussion has witnessed you using that underhanded technique any number of times.

>>It was a mistake to try again to be civil to you.
>
> When did that happen?

I tried to be nice to you, Jim, and you spit in my face all over again. Please find someone else to abuse.

> But back to the point, for what amount of time do the cancelled waves
> "exist" in order that they might then be able to "cease to exist"? If
> you say during the transient period between T0 and steady-state, then
> we're in agreement.

Exactly what laws of physics completely change during the transient period between TO and steady-state? Photons start moving sideways instead of carrying energy up and down the transmission line???? More bafflegab!

Pref2(1-|rho|^2) obviously exists all the way from the mismatched load back to the impedance discontinuity. You have avoided explaining that momentum reversing mechanism like the plague. How do you get those photons turned around?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1794. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 04:10:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1cba3b$1_3@corp.newsgroups.com>
Source record: 112038

Yuri Blanarovich wrote:
> Here is your answer Cecil. Resistor that radiates.

If, as Jim says, an RF wave is not destroyed by being dissipated
in a resistor dummy load, it has to radiate - yes? no?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1795. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 04:24:31 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307212024.28641436@posting.google.com>
Source record: 112039
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

Ed,

In reply to your question on the technical requirements, (apologies in advance for the verbose response but would like to ensure that the implementation difference between European PLC/PLT and our BPL is understood by everyone).

In Europe BPL (PLC/PLT) is connected to the 220V (European voltage) at the transformer that feeds 100~200 homes. Typically backhaul from the transformer is a dedicated data line. European power lines are underground and the emission limits are lower (NB30) but there are still major interference problems. At NB30 emission limits PLC/PLT is good for about 900 feet.

Here in the U.S. our power system architecture is different with a transformer for 4~6 homes in the suburbs, in rural areas many homes will have individual transformers as the houses are far apart.

BPL is transmitted down (and emitted from) the 11KV medium voltage lines that go to the house transformers. 11KV lines have significant attenuation (and radiation) at HF.

The repeater issue has been "swept under carpet" as they are expensive and need a truck roll to install. The BPL lobby's focus has been to persuade the world that every socket magically becomes an Internet connection.

For details on a typical BPL repeater check;
http://www.amperion.com/products.asp

There are no details on specific repeater distances at the Amperion site, just a vague comment about data rates and latency. Latency will cause problems for VoIP and gamers (the ping numbers will be bad).

It is clear from the Amperion information that these repeaters are complex as they decode the data. Presume that power is somehow picked off the 11KV line.

The source for the 2,000 feet is here;
http://www2.arrl.org/news/features/2003/06/01/1/
"According to industry sources, data rates of up to 20 MB/s are possible for distances of up to 2,000 feet, and of up to 3 MB/s for distances of up to 4,000 feet."

The ARRL comments are for raw data rates under very ideal conditions, actual download speed shared by all customers will be about 35% of the raw data rate. The BPL systems both in Europe and the U.S. have symmetrical upload/download speeds which is puzzling, as would expect users to care more about download speeds.

If the FCC raises the emission limits, then the repeater distance will be greater. Suspect if they don't, the BPL operators will still turn up the power anyway and wait for complaints

"Ed G." <Spectrumhog@_REMOVE_StarBand.net> wrote in message news:<Xns93BE7E5C0161Frog207Junocom@148.78.248.75>...
> While I certainly don't want to see BPL implemented, I must question
> your statements about the power companies' technical requirements to
> deploy BPL to rural customers.
>
> Can you please provide official sources for the technical information
> you posted?
>
>
> Ed WB6SAT

1796. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 04:36:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <51ephv8f8cj73iadv3bc3b6q5u9s91911c@4ax.com>
Source record: 112040

On Sun, 20 Jul 2003 23:38:47 -0500, "WavyDave"
<nowaynowhere@yahoo.com> wrote:

>ZZZZZZZZZINGGGGG------>
>
> (My Head)
>
>Guess I am still at the lowly 'operator' stage. :(
>

Lowly only if you have any pretensions about being expert in the field of power measurement - and come to some other conclusion that is indefensible. If not, enjoy the hobby for what you seek in it.

Even equipment operators can put these issues to good use (or bad use in the sense that follows) if you participate in a Shoot-Out and use an amplifier with other than 50 Ohm output Z feeding an antenna with other than 50 Ohm input Z. Through hi-grading the 50 Ohm feedline to select that choice position along it for the Judges' Wattmeter, you can shave yourself 1 or 2dB advantage over the others through their ignorance of the Mismatch Error.

Of course, this is almost certainly a common condition and everyone is in the dark. So are the results, but what the hey, its only a game.

I offer the cutting line at "does it make more than 1dB difference" to offer a qualitative assessment. Personally, and as a belief, I rarely care about 3 or 6dB (more or less); hence 1dB is extremely liberal in their favor (and they rarely even meet that gracious low-ball). It is only the cut-and-paste theoreticians that demand their solutions are more accurate than nature can guarantee - and that it does make a difference. Such is the stuff of CFA and EH claims.

73's
Richard Clark, KB7QHC

1797. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 04:56:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <csfphv0rttp2ladkgpbq8fraqmrjv4uo40@4ax.com>
Source record: 112041

On Sun, 20 Jul 2003 10:50:35 -0000, "David Robbins" <k1ttt@arrl.net>
wrote:

>
>> >Actually, several people (W8JI among them) have measured the output
>> >impedance of common amateur linear amplifiers by at least a couple of
>> >methods. The most credible measurements show, interestingly, a value
>> >very close to 50 ohms when the amplifier is adjusted for normal
>operation.
>
>but is that a real resistive 50 ohms, or a dissipationless 50 ohms
>non-resistive? or could it be a virtual 50 ohms hiding some other fake
>steady state value?

What would make it real for you?

> you can't read it when you connect an ohm meter to the
>output connector, so how can it be a resistance?

You can't read a 50 Ohm resistor with an Ohmmeter through a 0.1 ï¿½F
capacitor either, would you hold one while you pour a KW at 10M to the
series pair?

>or is it really a complex
>impedance that can be ignored when you calculate the output power?

I used real loads. I can repeat this with reactive ones, but it will
only shift the curve of data.

>but then
>again it might be due to internal reflections making it an infinite sum of
>many other factors?

That is the entire point and expressly demonstrated between the
mismatched plane of the source and the mismatched plane of the load.

>maybe we have to learn how to conjugate our impedances
>before we can have a decent discussion about it?

Care to give an example?

> but what if its only a
>matching system to free space impedance? when there are reflections does it
>reflect or absorb? who started this topic anyway????
>

Hi David,

What if? What is reflecting? In this case BOTH the source AND the load. If you wish, we can jimmy up the load to present 377 Ohms and drive the error of power determination even higher (probably on the order of 50-80%). However, to this point two hours of work is sufficient to demonstrate this if anyone wishes to confirm my analysis. To this point a couple of days has revealed no data to have refuted my analysis. Denial is an option and opinion is free. Even at this steep discount none step up to the bench. I didn't expect anyone would anyway. ;-)

73's
Richard Clark, KB7QHC

1798. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 05:11:51 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfih2n$mb6$1@titan.btinternet.com>
Source record: 112042

> Reg Edwards wrote:
> > It is only necessary that the load presented to the transmitter should
be a
> > pure (or near enough) resistance of the required value. Which is usually
50
> > ohms.
>
> My SGC-500 amp says it will handle an SWR of 6:1 just fine.
> If that is true, it means it will handle any impedance on
> or inside a 6:1 circle on a 50 ohm Smith Chart. The great
> majority of those impedances are not resistive.
> --
> 73, Cecil, W5DXP
>
==========

Dear Talking SGC-500,

Why do think I took the precaution of qualifying my statement with "or near
enough" ?

By the way, you would be most unhappy if your Tuned-tank or Pi-tank output
circuit didn't present your plate(s) with a near-enough purely resistive
load of the correct value. And would you mind asking your slave driver to
stop cheating with the aid of his 19th Century Smith Chart, please.

Reg, G4FGQ

1799. Re: RatTail Antenna Booster

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 05:31:28 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <Q_3Ta.105752$GL4.28081@rwcrnsc53>
Source record: 112043

Piece of wire for a counterpoise? Sure, they work. wire is cheaper than this device though.
"Scott Drumm" <denagoth@midsouth.rr.com> wrote in message news:KOBSa.89572$X43.61039@clmboh1-nws5.columbus.rr.com...
> Anyone tried this out on their HT? Does it work as advertised?
>
> http://rattailantenna.com/
>
> I was thinking about buying one for my IC-T22A. I've replaced the stock
> rubber duck w/ a Smiley SLD-2 12" 5/8 antenna, but want to see if I can
> reach some more distant stations.
>
> Thanks for the help!
>
> Scott Drumm
> N3XFD
>

1800. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 05:31:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hqiphvchlec32a3fho28ens65aa0th36ij@4ax.com>
Source record: 112044

On Sun, 20 Jul 2003 08:05:05 -0700, W7TI <noway@nohow.com> wrote:

>On Sun, 20 Jul 2003 07:21:07 GMT, Richard Clark <kb7qhc@comcast.net>
>wrote:
>
>>The "oomph" we all got from that
>>response was, as I also offered, the uncomfortable groan of avoiding
>>serious testing to instead indulge in eternal debates, the offering of
>>puzzles, and the recitation of dead white men's work.
>
>_____
>
>And while you're doing all that testing and measuring, I will have
>Worked All Stations. :-)
>
>--
>73, Bill W7TI

Hi Bill,

You cover a lot of ground in 2 hours then. QSL cards must be pasted
to your walls 6 inches deep, ceiling to floor. Even at a quarter inch
deep you qualify well beyond the "oomph" spectacularly demonstrated by
others. ;-)

73's
Richard Clark, KB7QHC

1801. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 10:09:02 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0307220209.25f444d6@posting.google.com>
Source record: 112045

"Nic. Santean" <nic@csd.uwo.ca> wrote in message news:<3f1c3629@shknews01>...

Hi Nic,
this a simple, intuitive and maybe completely wrong approach:
Let's consider a travelling EM wave at any point, distant from
antenna. Both the E and H fields change in time. IMHO the power
density at that point should be constant in time. When E=0, all energy
concetrates in H, which is either +Hmaximum, or -Hmaximum at that
moment. Vice versa, when H=0, E is + or - Emaximum.
> When I said "magnetic field and electric field are 90 degrees out of
> phase (it is a capacitive antenna)", I was refering that in any point in
> space, when the electric field peaks, the magnetic field hits zero; when
> the electric field drops to zero, the magnetic field change direction and
> peaks again in the other direction, etceteras. I said nothing about the
> spatial position of their vectors - which is a known, even by me.
> I just said that there is a shift(!) between the sinusoidals.
Yes, it seems right.

> My point is that a clean EM radiation has both fields in phase, which
> means that the scalar values of both vectors (electric and magnetic)
> change synchronously: when the electric field peaks, the magnetic field
> peaks as well, when the electric field hits zero, so does the magnetic
> field.
Why should they change "synchronously", causing the power density at
any point swing from zero to "maximum squared" ?

> Therefore, I was saying that I suspect the superposition of two different
> EM radiation coming out from a dipole.
Be careful, the near field, approx. to 10x wavelength from an antenna,
may differ from the far field.

BR from Ivan

1802. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 10:10:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d0e81$1_2@corp.newsgroups.com>
Source record: 112046

Richard Clark wrote:
> To this point a couple of days has revealed no data to have
> refuted my analysis. Denial is an option and opinion is free. Even
> at this steep discount none step up to the bench. I didn't expect
> anyone would anyway. ;-)

Please state your conclusions in concepts that people can understand.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1803. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 10:30:24 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <4n8Ta.107310$OZ2.20345@rwcrnsc54>
Source record: 112047

I was taught that the Smith CHart is a twentieth [20th] century 'tool'.

BTW, it's not cheating! When I took my final exam in transmission lines Professor James Kirwin allowed, and even provided, Smith Charts for student use.

DD, W1MCE

Reg Edwards wrote:
[SNIPPED]
>...
>> And would you mind asking your slave driver to
> stop cheating with the aid of his 19th Century Smith Chart, please.
> ----
> Reg, G4FGQ
>
>

1804. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 10:32:48 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <kp8Ta.108740$sY2.48179@rwcrnsc51.ops.asp.att.net>
Source record: 112048

Oh Yuri!! All resistors in any circuit radiate EM energy!

DD, W1MCE
+ + +
Yuri Blanarovich wrote:

> F. Art unpatented:
>
>
>>Fortunately it still has a 'resistive' component load which is the
>>PRIME requisite for radiation, whereas 'resonance' is not.
>
>
> Here is your answer Cecil. Resistor that radiates.

1805. Re: Can't stand it any longer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 10:37:32 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0307220237.11dbe1a8@posting.google.com>
Source record: 112049

Hi all,
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bfcqvnnmi1@sparta.btinternet.com>...
> ... There's nothing magical about 50 ohms. It could be
> any value as any appropriately designed SWR meter will assume. I have a
> 75-ohm model. All is based on assumptions. The only absolute value is SWR
> itself which does not depend on Zo or Z load but merely on their ratio. ...
Absolutely true. Any Zo is good. If we optimize a coax of a given
outer diameter with respect to maximum transferred power, we end with
Zo close to 50 ohms. If we do the same with respect to minimum losses,
we end up with Zo close to 75 ohms. That and only that is why 50 ohm
coaxes are preferred with transmitters (and transceivers) while 75 ohm
coaxes with receivers. Compromise value 60 ohms did not get into life.

BR from Ivan OK1SIP

1806. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 10:38:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d152a_2@corp.newsgroups.com>
Source record: 112050

OK1SIP wrote:
> this a simple, intuitive and maybe completely wrong approach:
> Let's consider a travelling EM wave at any point, distant from
> antenna. Both the E and H fields change in time. IMHO the power
> density at that point should be constant in time.

From _Optics_, by Hecht: Equation 3.43 is the instantaneous flow of energy per unit area per unit time, i.e. the instantaneous Poynting Vector and is a cosine squared function. "It should be evident that E^xH^ cycles from maxima to minima. At optical frequencies, S^ is an extremely rapidly varying function of time ... Therefore, its instantaneous value would be an impractical quantity to measure directly. This suggests that we employ an averaging process."

The average power density (irradiance) is constant, not the instantaneous power density which is a cosine squared function.

> Why should they change "synchronously", causing the power density at
> any point swing from zero to "maximum squared" ?

From _Optics_, by Hecht:
"Since Ey and Bz differ only by a scalar, and so have the same time-dependence, E and B are *in-phase* at all points in space".
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1807. Dipole connected to grounded receiver?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 11:49:49 UTC
From: Tom <tstimac01@yahoo.com>
Message-ID: <bfj8a7$7kp$2@ls219.htnet.hr>
Source record: 112060

I have one question about dipole connected to grounded receiver.

I've made dipole antenna. One "pole" is connected to center line of coax, the other to shield line of the coax. Cable goes down to receiver and connects with BNC. The BNC is (of course) connected to case. The case is grounded.

Can someone tell me, what is te purpose of the dipole if one of the poles is grounded? I mean, why i built two poles when one goes directly to ground!Shouldn't it be easier to build just a monopole? I'm puzzled....

Thanks in advance
tom

1808. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:08:36 UTC
From: luke <luke^2@noluke.com>
Message-ID: <3F1D4562.81140B77@noluke.com>
Source record: 112051
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

Watched an interesting program while ago on tlc or discovery about
electrocutions, power line workers in special helicopter were checking
lines
for bad insulators/leaks and were working on one section when the linesman
got electrocuted. Even with all safety equipment in use, he was knocked
out,
lost several teeth but survived.

Even with the power off these hv lines, there is some level of residual
power there
perhaps from static, the program did not get into details.

I would like to see how those cell antenna are installed on top of these
power towers.
Guess they use special crane to do it.

luke

> On Mon, 21 Jul 2003 00:26:47 GMT, "Phil Kane"
> <Phil.Kane@nov.shmovz.ka.pop> wrote:
>
> >Transmission voltages (34 KV and up) are something else. Those are
> > never worked hot.
>

1809. Re: Stuff Cecil would argue about (was:The Cecilian Gambit, a variation on the Galilean Defense revisited)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:08:55 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <3f1bf3f6_2@newsfeed>
Source record: 112052

Cecil, you'd argue with a cop or a judge that speed limits are indeterminate if the sign didn't have units posted.

You wrote: Please state your conclusions in concepts that people can understand.

"State"? Do you mean "write" or "post"?
"conclusions"? DYM "opinions"? With references, a/o bibliography?:
"concepts"? What DYM ? New or old?
"people"? What, or which, people DYM?
"understand"? at what level DYM? K-20?

To the rest of the group which hasn't plonked this Gordian-knotted thread:

Let's post more stuff over which Cecil would argue ;o)

1. The article in Nov. 1992 QST, pp 59-63, and its Technical Correspondence rejoinder later on in the next year.

2. Your turn

73, Dave, N3HE

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message news:3f1d0e81$1_2@corp.newsgroups.com...

SNIP>
> Please state your conclusions in concepts that people can understand.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
SNIP

1810. Re: efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:12:03 UTC
From: luke <luke^2@noluke.com>
Message-ID: <3F1D4631.DD17B812@noluke.com>
Source record: 112053

Hi,

Good answers to the question !

Always walk away a little smarter after reading this group !

73 luke

Roy wrote:

> There are two quite distinct sources of ground loss involved with
> vertical antennas. You're talking about one, and Yuri is talking about
> the other. Makes for a lively discussion, but it's a lot like the blind
> men describing the elephant.
>
> One type of loss is caused when it's necessary to connect one conductor
> of the feedline to the Earth. Current returning to this feedline
> conductor is equal in magnitude to the current flowing into the antenna
> from the other conductor, and it creates a simple I^2 * R loss flowing
> through the ground. This loss can be minimized by using a system of
> ground radials to decrease the loss resistance R near the base of the
> antenna, where the current density is highest. Another solution is to
> use a vertical antenna with a high feedpoint resistance. Examples are
> the half square, bobtail curtain, and half wavelength vertical. These
> antennas require very little feedpoint current, and consequently very
> little ground current. They can be very efficient with only a very
> simple ground system.
>
> But there's another source of loss, encountered after the signal is
> radiated. When a vertically polarized signal strikes the ground, a lot
> of its energy is lost to heating of the ground. This is particularly
> true at low angles of incidence. The end result is severe attenuation of
> low angle radiation. Particularly for low angles, this occurs farther
> away from the antenna than a reasonable radial system extends. So you're
> stuck with this loss, unless you can physically move your antenna to a
> swamp or similar high-conductivity environment. Horizontally polarized
> waves react differently.
>
> The demo version of EZNEC will show this quite dramatically. If you
> choose the MININEC type ground model, it acts like you have a perfect
> radial system. That is, the first source of loss I mentioned is zero.
> But the second is still there. You can simulate the effect of ground
> system loss simply by adding a resistive "load" at the antenna base.
> Compare the patterns of a vertical and horizontal, *to the same scale*,
> by superimposing them on a 2D plot, using different qualities of ground.
> You'll find it quite educational.

>
> Roy Lewallen, W7EL
>
> Yuri Blanarovich wrote:
> >>But aren't there ground independant verticals, like the Half Square or a
> >>Bob-Tail-Curtain?
> >>
> >>
> >>
> >>U of M
> >>GO BLUE!!!
> >>
> >>God, Guns, and Guts
> >>Protect America!!!
> >>
> >
> >
> > Every vertical "needs" the ground for its efficient performance especially at
> > the low angles. Vertical dipoles and their elevated cousins are still "looking"
> > out at the ground, farther waway and with a bit less of participation.
> > Wanna see dramatic display of salt water "ground" performance/contribution?
> > Take your any verticaly polarized antenna and compare its performace between
> > ground ground and salt water ground. You would see somewhere between 10 - 15 dB
> > difference.
> >
> > Yuri

1811. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:17:15 UTC
From: WB2JKX <mycall-N0SPAM@arrl.net>
Message-ID: <LHbTa.67462$0v4.4498427@bgtnsc04-news.ops.worldnet.att.net>
Source record: 112054
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

Rob Kemp <robkemp90210@hotmail.com> wrote in message
news:6114e4af.0307212024.28641436@posting.google.com...
> Ed,
>
> In reply to your question on the technical requirements, (apologies in
> advance for the verbose response but would like to ensure that the
> implementation difference between European PLC/PLT and our BPL is
> understood by everyone).
>
> In Europe BPL (PLC/PLT) is connected to the 220V (European voltage) at
> the transformer that feeds 100~200 homes. Typically backhaul from the
> transformer is a dedicated data line. European power lines are
> underground and the emission limits are lower (NB30) but there are
> still major interference problems. At NB30 emission limits PLC/PLT is
> good for about 900 feet.
>
> Here in the U.S. our power system architecture is different with a
> transformer for 4~6 homes in the suburbs, in rural areas many homes
> will have individual transformers as the houses are far apart.
>
> BPL is transmitted down (and emitted from) the 11KV medium voltage
> lines that go to the house transformers. 11KV lines have significant
> attenuation (and radiation) at HF.
>
> The repeater issue has been "swept under carpet" as they are expensive
> and need a truck roll to install. The BPL lobby's focus has been to
> persuade the world that every socket magically becomes an Internet
> connection.
>
> For details on a typical BPL repeater check;
> http://www.amperion.com/products.asp
>
> There are no details on specific repeater distances at the Amperion
> site, just a vague comment about data rates and latency. Latency will
> cause problems for VoIP and gamers (the ping numbers will be bad).
>
> It is clear from the Amperion information that these repeaters are
> complex as they decode the data. Presume that power is somehow picked
> off the 11KV line.
>
> The source for the 2,000 feet is here;
> http://www2.arrl.org/news/features/2003/06/01/1/

> "According to industry sources, data rates of up to 20 MB/s are
> possible for distances of up to 2,000 feet, and of up to 3 MB/s for
> distances of up to 4,000 feet."
>
> The ARRL comments are for raw data rates under very ideal conditions,
> actual download speed shared by all customers will be about 35% of the
> raw data rate. The BPL systems both in Europe and the U.S. have
> symmetrical upload/download speeds which is puzzling, as would expect
> users to care more about download speeds.
>
> If the FCC raises the emission limits, then the repeater distance will
> be greater. Suspect if they don't, the BPL operators will still turn
> up the power anyway and wait for complaints
>
> "Ed G." <Spectrumhog@_REMOVE_StarBand.net> wrote in message
news:<Xns93BE7E5C0161Frog207Junocom@148.78.248.75>...
> > While I certainly don't want to see BPL implemented, I must question
> > your statements about the power companies' technical requirements to
> > deploy BPL to rural customers.
> >
> > Can you please provide official sources for the technical information
> > you posted?
> >
> >
> > Ed WB6SAT

It would seem that the use of repeaters on the HV lines would require the
power line to be broken into isolated sections (RF-wise) where the repeaters
are located, with the 60Hz bypassed around the repeater. This can't be good
for reliable electric service.

1812. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:24:16 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <dJ6cnXnRM-iP1ICiXTWJkg@crocker.com>
Source record: 112055
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

"luke" <luke^2@noluke.com> wrote in message
news:3F1D4562.81140B77@noluke.com...
> Watched an interesting program while ago on tlc or discovery about
> electrocutions, power line workers in special helicopter were checking
> lines
> for bad insulators/leaks and were working on one section when the linesman
> got electrocuted. Even with all safety equipment in use, he was knocked
> out,
> lost several teeth but survived.
>
> Even with the power off these hv lines, there is some level of residual
> power there
> perhaps from static, the program did not get into details.

if they are not properly grounded they can build up a static charge just from wind or passing clouds(thunderstorms or clouds that are building a charge separation even though they haven't actually caused lightning yet). they can also get charged by induced voltages from nearby energized lines, where the line you are working on runs parallel to another energized line it acts like a huge one turn transformer and if not grounded it can build up quite a high voltage.

>
> I would like to see how those cell antenna are installed on top of these
> power towers.
> Guess they use special crane to do it.

crane, helicopter, carry it up on your back, whatever it takes they get them up there... providing grounding and isolation at the base of the tower is the bigger problem. the control shack they connect to requires both AC power and usually a connection to a land based phone network. both of these need extra protection because if the hv line flashes over an insulator due to a fault or lightning the voltage at the base of the structure can get quite high, this can flash back over to the low voltage line and phone lines and get back into those systems. phone lines are easiest to protect by using fiber optics but power is another problem. One utility engineer i talked to at a lightning protection meeting described how a fault like that got into the distribution lines and blew the service drops off several houses down the road causing all sorts of collateral damage.

1813. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:40:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d4dfd$1_1@corp.newsgroups.com>
Source record: 112057

David J. Windisch wrote:
> Cecil, you'd argue with a cop or a judge that speed limits are indeterminate
> if the sign didn't have units posted.
>
> You wrote: Please state your conclusions in concepts that people can
> understand.

A simple request for understandable information is an argument?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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1814. AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:42:44 UTC
From: Rev Tom Cox <rvtomcox@epix.net>
Message-ID: <E3cTa.9760$EZ5.3350629@news1.epix.net>
Source record: 112056

As he subject implies I purchased an all in one unit,with surround sound etc. The problem is I have yet to get even a static or buzz not to mention a real radio station on either the am or fm mode. The cheapos sent a small dipole antenna for the fm,(who wants a dipole antenna on their living room wall, and an obviously just as cheapo am loop antenna. I have now tried a $35 indoor antenna for am/fm that is under 12 volt power to boost signal. Still nothing works. The unit was in the shop for the dvd player and I ask them to check the function of the am/fm and the repair tag came back as all ok. I am surrounded by trees, but frankly all the other radios in the house work from my small portables to the large receiver that was replaced by the new unit.
Does anyone have any ideas as to what my next step should be? Assuming the am/fm function works then I am having trouble with the antenna, and an outside antenna is not out of the question but does not satisfy the am side. Open to all suggestions and Thanks for listening to a real neophyte in this area.

--

1815. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:49:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d5021_1@corp.newsgroups.com>
Source record: 112058
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

WB2JKX wrote:
> It would seem that the use of repeaters on the HV lines would require the
> power line to be broken into isolated sections (RF-wise) where the repeaters
> are located, with the 60Hz bypassed around the repeater. This can't be good
> for reliable electric service.

The power companies have already been using power line carrier repeaters
for many, many years. The repeaters are the bypass, not vice versa.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1816. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 14:59:08 UTC
From: richardharrison@webtv.net
Message-ID: <1777-3F1D513C-460@storefull-2315.public.lawson.webtv.net>
Source record: 112061

Nic Santeen wrote:
"My point is that a clean EM radiation has both fields in phase."

But in Nic`s preceding sentence Nic wrote:
"I just said that there was a shift (!) between sinusoids."

The two adjacent sentences seem contradictory. One respondent mentioned near fields. No need to complicate this issue now. Power was also inserted as an issue but its waveform differs from that of volts and amps.

A sinewave, volts or amps contains twice as many alternations as cycles. Each voltage peak, regardless of polarity, produces a positive power peak on each alternation in a resistance. Thus, the power is 2X the frequency of the voltage.

On a transmission line, the power flowing in each direction is forced to have current in the corresponding direction peak when the volts in that direction peak. The Zo of the line enforces synchronization..

In the free-space far-field, an optimally placed wire, 1-meter long, has exactly the number of microvolts induced in it as decribes the microvolts per meter of the field inducing the volts.

The r-f power flowing through the square meter containing the wire is calculated by squaring the volts per meter and dividing by 377 ohms.

Conclusion to be drawn is that 377 ohms is a resistance and the E and H fields induce power. Note, we have fields in space. There may be zero electrons in the space and the fields move merrily along. There is no current until a conductor is encountered.

Best regards, Richard Harrison, KB5WZI

1817. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 15:00:06 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <t42dnZ-4MIjlzICiXTWJig@crocker.com>
Source record: 112059

"Rev Tom Cox" <rvtomcox@epix.net> wrote in message
news:E3cTa.9760$EZ5.3350629@news1.epix.net...
> As he subject implies I purchased an all in one unit,with surround sound
> etc. The problem is I have yet to get even a static or buzz not to mention
a
> real radio station on either the am or fm mode. The cheapos sent a small
> dipole antenna for the fm,(who wants a dipole antenna on their living room
> wall, and an obviously just as cheapo am loop antenna. I have now tried a
> $35 indoor antenna for am/fm that is under 12 volt power to boost signal.
> Still nothing works. The unit was in the shop for the dvd player and I
ask
> them to check the function of the am/fm and the repair tag came back as
all
> ok. I am surrounded by trees, but frankly all the other radios in the
> house work from my small portables to the large receiver that was replaced
> by the new unit.
> Does anyone have any ideas as to what my next step should be? Assuming the
> am/fm function works then I am having trouble with the antenna, and an
> outside antenna is not out of the question but does not satisfy the am
side.
> Open to all suggestions and Thanks for listening to a real neophyte in
this
> area.

isn't radio shack the 'answer store'??? have you tried asking them what the
problem is? with the cheapy AM loop antennas that come with those things
you should hear loud 60hz hum when it is close to the tv, if you don't then
most likely it isn't hooked up properly or the receiver isn't working. fm
depends more on how close to the stations you are, but if you have other fm
radios that work well with built in antennas and you can't pick up the same
stations on the supplied dipole something is probably wrong there also.

1818. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 15:27:08 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfjl4g$fid9l$1@ID-134747.news.uni-berlin.de>
Source record: 112062

Go the store you bought your unit from. Spend
3.99 on a folded dipole cut for the middle of the
FM broadcast band (430-2385). Put it on the wall
in an "inverted V" configuration. Enjoy, you
will not notice the antenna 120 days later, they
are that inconspicuous. Spend no more than $50.
Buy stacked folded dipole antenna (150-2164
15.99), coax to feed from antenna to receiver, 2
75/300 ohm baluns (assuming your receiver's
antenna input IS NOT coaxial), wall bracket & mast
(if you do not stick the antenna in the attic).
The antenna is two of the folded dipoles,
constructed of aluminum tube, stacked at right
angles to each other to be omni directional. I
have owned and used both solutions for more than
20 years. I have sold, at Radio Shack the
solutions for 6 years to hundreds of customers w/o
return or complaint, and occasionally with
compliment.

--
73 es cul

wb3fup
a Salty Bear

"Rev Tom Cox" <rvtomcox@epix.net> wrote in message
news:E3cTa.9760$EZ5.3350629@news1.epix.net...
> As he subject implies I purchased an all in one
unit,with surround sound
> etc. The problem is I have yet to get even a
static or buzz not to mention a
> real radio station on either the am or fm mode.
The cheapos sent a small
> dipole antenna for the fm,(who wants a dipole
antenna on their living room
> wall, and an obviously just as cheapo am loop
antenna. I have now tried a
> $35 indoor antenna for am/fm that is under 12
volt power to boost signal.
> Still nothing works. The unit was in the shop
for the dvd player and I ask
> them to check the function of the am/fm and the
repair tag came back as all

> ok. I am surrounded by trees, but frankly all
the other radios in the
> house work from my small portables to the large
receiver that was replaced
> by the new unit.
> Does anyone have any ideas as to what my next
step should be? Assuming the
> am/fm function works then I am having trouble
with the antenna, and an
> outside antenna is not out of the question but
does not satisfy the am side.
> Open to all suggestions and Thanks for listening
to a real neophyte in this
> area.
>
> --
>
>

1819. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 15:30:58 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030722113058.28191.00000318@mb-m24.aol.com>
Source record: 112063

>
>Oh Yuri!! All resistors in any circuit radiate EM energy!
>
>DD, W1MCE

...and cause SWR. Can you picture little, unmatched radiating resistor in the circuit? Live and learn eh?
I thought they ate the RF without passing any to our precious environment. What me dummy!
But I think we should start new thread or threat on how much resistor, capacitor or asamatteroffact anything radiates, how the SWR affects this un/desired property, what the photons and black holes do about it and how to magnify this effect so we can beat the record on number of postings.
Back to my no SWR feedlines.

Bada Fun BUm

1820. Re: Dipole connected to grounded receiver?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 15:44:04 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030722114404.28191.00000319@mb-m24.aol.com>
Source record: 112064

>
>Can someone tell me, what is te purpose of the dipole if one of the poles is
>grounded? I mean, why i built two poles when one goes directly to
>ground!Shouldn't it be easier to build just a monopole? I'm puzzled....
>
>Thanks in advance
>tom
>
>
>

Answer lies in the fact that any piece of wire, depending on its (electrical)
length in terms of wavelength is not anymore just "shorting" conductor. It is
an antenna, feedline or anything in between, definitely not just DC current
"grounding wire".
The other "pole" has the important function too, but that is another antenna
story.

Yuri

1821. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 15:56:04 UTC
From: richardharrison@webtv.net
Message-ID: <926-3F1D5E94-153@storefull-2316.public.lawson.webtv.net>
Source record: 112066

Cecil, W5DXP wrote:
"That`s where you are wrong."

This argument has evoked plain statements, i.e., "When waves cease to exist, they are forced to give up their intrinsic energy." And, "Waves don`t cease to exist."

The statements need qualifications. Perhaps waves "cancel" without ceasing to exist.

My speculation is that two radiated fields which cancel don`t eliminate each other at all. They simply coincide out-of-phase, and their resultant is zero along an azimuth where cancellation of their effect continues. If we had a way to identify the vectors composing the zero resultant, we could prove them there. Separate modulation might be contrived to perform identification. The modulation idea comes from what happens as a null azimuth in a MW BC radiation pattern is approached. Carrier and sideband frequencies don`t cancel exactly together and it sounds weird.

On wires, it`s different. Connect same-frequency energy exactly out-of-phase, and you have a short circuit. In space, you don`t have an electric current. You may have zero electrons. You have only fields until you encounter a conductor.

Best regards, Richard Harrison, KB5WZI

1822. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 15:58:34 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030722115834.28191.00000322@mb-m24.aol.com>
Source record: 112065

>
>Yuri Blanarovich wrote:
>> Huh? You haven't figured that SWR is bad for transmission lines?
>
>An SWR between 4:1 and 16:1 is what allows me to use a 130 ft.
>$20 dipole fed with 400 ohm window line on all HF bands without
>needing an antenna tuner. What's wrong with live and let live?
>I find your approach to antennas boring as heck but I am not
>going to rag on you about it. Different strokes for different
>folks. One has to have a transmission line anyway - might as
>well let it perform the matching function.
>--
>73, Cecil http://www.qsl.net/w5dxp
>
>

Did I deny to let you live with your SWRed piece of wire? Be happy.

If my 7 el Razor, Quad Yagi log driven design is boring, and your piece of wire is exciting, may the SWR be with you!

Gee, what a revolutionary concept, let your transmission line do the matching for your doublet with open wire feeders. Yo everybody, tear down your coax fed beams, arrays, towers, just put up doublet and work the WAS in no time. Can you picture all those stupid contesters, serious DXers with decent antennas wasting their efforts to eliminate SWR from their feedlines? Yep, I can picture trying to use coax feedlines for matching kilowats to non-resonant antennas. Good for melting the ice in the gutters.

Be happy with your doublet, I am looking for "boring" killer antennas that can hear and work stuff that others can't. To me much more fun and challenge than your SWR endeavors.

da (Quagi) Razor BUm

1823. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 16:24:54 UTC
From: richardharrison@webtv.net
Message-ID: <1395-3F1D6556-461@storefull-2311.public.lawson.webtv.net>
Source record: 112067

Art Unwin wrote:
"Way back in this thread you alludedd to antennas as being
transformers."

Art seems ready to bring up #*+@%$! ("the thing" as Phil Harris would
say) yet another time.

I would like to see Art produce some hard numbers indicating improvement
by his "thing" as compared with other antennas. Art has indicated he
wants others to produce his numbers, even refine his design. I`d like
Art to even differentiate his "thing" from a "T" or "Delta" match,
regardless of where the feedline wires go.

Fresh participants might be persuaded to do Art`s work or salute his
design.

Best regards, Richard Harrison, KB5WZI

1824. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:03:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhqriotockluac@corp.supernews.com>
Source record: 112068

I never saw the original posting, but it's been quoted enough that I think I understand the original question.

The E and H fields might very well be out of time phase near the antenna. And very close to the antenna (within a pretty small fraction of a wavelength), the magnitude of the E/H ratio will be considerably greater than 377 ohms if the antenna is much shorter than a half wavelength. However, beyond a wavelength or so, the E/H ratio will be very close to 377 ohms, and E and H will be in time phase. They'll be oriented at a 90 degree angle with respect to each other in space, but will be in time phase.

In the far field, the ratio of E to H (both magnitude and phase) are dictated by the medium, not the antenna.

Anyone interested in investigating this can do so very easily with EZNEC, even the demo version, using the near field analysis. It gives both magnitude and phase of E and H fields at any point in space for any antenna you can model.

Roy Lewallen, W7EL

1825. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:15:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d7248_2@corp.newsgroups.com>
Source record: 111919

Yuri Blanarovich wrote:
>>Oh Yuri!! All resistors in any circuit radiate EM energy!
>
> ...and cause SWR. Can you picture little, unmatched radiating resistor in the
> circuit? Live and learn eh?
> I thought they ate the RF without passing any to our precious environment.

They do eat RF without passing more than a negligible amount to our
environment. But they also convert the energy from RF energy to radiated
heat which is just as much of an EM wave as the RF wave was. The old
RF wave is destroyed but since the energy in that RF wave cannot be
destroyed, it must be converted. In this case it is converted to
an infrared wavelength.

The way to keep a resistor from radiating heat is to enclose it in
a heat sink in which case the heat sink probably radiates heat as
well as conducts heat.
--
73, Cecil http://www.qsl.net/w5dxp

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1826. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:25:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <v7sqhvofittlacefnm29qdajv79nm80nrn@4ax.com>
Source record: 111920

On Tue, 22 Jul 2003 05:10:00 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> To this point a couple of days has revealed no data to have
>> refuted my analysis. Denial is an option and opinion is free. Even
>> at this steep discount none step up to the bench. I didn't expect
>> anyone would anyway. ;-)
>
>Please state your conclusions in concepts that people can understand.

Hi Cecil,

This was not a monograph for the Sunday Supplement. Those who
understand the concepts of reflection are aware of the implications.
Feel free to abandon the topic if you find the report too difficult to
follow as I am not offering any amendments nor advancing any
speculations. Debate is not a goal here.

If, on the other hand you have new data to offer; please feel free to
post it.

73's
Richard Clark, KB7QHC

1827. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:25:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d74ac_2@corp.newsgroups.com>
Source record: 111921

Richard Harrison wrote:
> The statements need qualifications. Perhaps waves "cancel" without
> ceasing to exist.

Some waves cancel without ceasing to exist. But if the cancellation
is permanent, the waves simply cease to exist.

> My speculation is that two radiated fields which cancel don`t eliminate
> each other at all.

That is true, but that is not what we are discussing. We are discussing
permanent wave cancellation within the confines of a transmission line.

> On wires, it`s different. Connect same-frequency energy exactly
> out-of-phase, and you have a short circuit.

No you don't, Richard. Maximum current occurs at a short circuit.
The net current from two canceled waves is zero. The net voltage
from two canceled waves is zero. It is neither a short circuit
nor an open circuit to the canceled waves. It is simply wave
cancellation. To the canceled waves, it looks like both a short
circuit to the two voltages and an open circuit to the two currents.

It is the same thing that happens at the air to thin-film interface
in perfect non-glare glass when the incident beam is coherent.
--
73, Cecil http://www.qsl.net/w5dxp

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1828. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:38:09 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030722133809.18033.00000308@mb-m17.aol.com>
Source record: 111922

> I thought they ate the RF without passing any to our precious environment.

That was cheeque in tongue.

Enough! Bye!

1829. Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:38:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhqtkg8ukomqcf@corp.supernews.com>
Source record: 111923

Thought I'd change the thread name to more accurately reflect its content. This seems to be the fate of nearly all threads in this newsgroup.

Roy Lewallen, W7EL

1830. Re: The Cecilian Gambit, a variation on the Galilean Defense revisited

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:38:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d779b$1_2@corp.newsgroups.com>
Source record: 111924

Richard Clark wrote:

> <Cecil.A.Moore@ieee.org> wrote:
>>Please state your conclusions in concepts that people can understand.
>
> Those who
> understand the concepts of reflection are aware of the implications.
> Feel free to abandon the topic if you find the report too difficult to
> follow as I am not offering any amendments nor advancing any
> speculations.

Can we assume that you are incapable of stating your conclusions in
concepts that people can understand? In other words, what was the
purpose of your posting?
--
73, Cecil http://www.qsl.net/w5dxp

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1831. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 17:50:18 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <tTWdnSLIQLL95ICiXTWJhw@comcast.com>
Source record: 111925

If you get nothing on AM, not even at night, you are doing something wrong. Take another look at the instruction manual. Make sure the loop antenna is hooked up correctly, and that you don't have some wrong button pushed, as for instance, tape monitor; you could also be in some mode that mutes all stations that are not transmitting a digital ID. Can you take it back to where you had it repaired, and have them show you that everything is OK?

Tam/WB2TT
"Rev Tom Cox" <rvtomcox@epix.net> wrote in message
news:E3cTa.9760$EZ5.3350629@news1.epix.net...
> As he subject implies I purchased an all in one unit,with surround sound
> etc. The problem is I have yet to get even a static or buzz not to mention
a
> real radio station on either the am or fm mode. The cheapos sent a small
> dipole antenna for the fm,(who wants a dipole antenna on their living room
> wall, and an obviously just as cheapo am loop antenna. I have now tried a
> $35 indoor antenna for am/fm that is under 12 volt power to boost signal.
> Still nothing works. The unit was in the shop for the dvd player and I
ask
> them to check the function of the am/fm and the repair tag came back as
all
> ok. I am surrounded by trees, but frankly all the other radios in the
> house work from my small portables to the large receiver that was replaced
> by the new unit.
> Does anyone have any ideas as to what my next step should be? Assuming the
> am/fm function works then I am having trouble with the antenna, and an
> outside antenna is not out of the question but does not satisfy the am
side.
> Open to all suggestions and Thanks for listening to a real neophyte in
this
> area.
>
> --
>
>

1832. Re: Dipole connected to grounded receiver?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 18:01:50 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <-LGcnZ4PIp6L4YCiU-KYvw@comcast.com>
Source record: 111926

Tom,

The dipole is a balanced antenna, fed at the center. Stricly speaking, you should be using a 1:1 balun to connect to an unbalanced feedline. However, no great harm comes if you just connect it to the coax directly. DO NOT use a standard TV/FM balun, they are 4:1, and you are better off with it just like it is.

Tam/WB2TT
"Tom" <tstimac01@yahoo.com> wrote in message
news:bfj8a7$7kp$2@ls219.htnet.hr...
> I have one question about dipole connected to grounded receiver.
>
> I've made dipole antenna. One "pole" is connected to center line of coax,
> the other to shield line of the coax. Cable goes down to receiver and
> connects with BNC. The BNC is (of course) connected to case. The case is
> grounded.
>
> Can someone tell me, what is te purpose of the dipole if one of the poles
is
> grounded? I mean, why i built two poles when one goes directly to
> ground!Shouldn't it be easier to build just a monopole? I'm puzzled....
>
> Thanks in advance
> tom
>
>

1833. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 18:07:04 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f1d7c9c@shknews01>
Source record: 111928

> Nic Santean wrote:
> "My point is that a clean EM radiation has both fields in phase."
>
> But in Nic`s preceding sentence Nic wrote:
> "I just said that there was a shift (!) between sinusoids."
>
> The two adjacent sentences seem contradictory.

Well ! ? This is the whole point : they "seem contradictory" only
to those who believe that these fields are the actual components
of the SAME EM radiation ! Is this contradiction which made
me infer that actually there are two different EM radiations emanating
out of the dipole antenna : each of these out of phase varying fields
are the source of a separate EM radiation. These two separate
EM radiations eventually get superimposed at far distance (fact also
noticed in other two replies - this also explains why we are talking
about near and far fields).

What you just pointed out is actually what I wanted to prove.

BTW, this also implies that the dipole antenna is not an "optimal
transducer" - not even in theory. I leave this for other discussion.

Cordially,

Nic.

1834. Guide to the rec.radio Newsgroups

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 18:10:54 UTC
From: No Cal Ham <"No Cal Ham"@nowhere.net>
Message-ID: <N6fTa.8507$ff.4216@fed1read01>
Source record: 111927

http://faqs.jmas.co.jp/FAQs/radio/personal-intro

1835. Re: Dipole connected to grounded receiver?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 18:15:25 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfjv00$fk9ch$1@ID-134747.news.uni-berlin.de>
Source record: 111929

Thank you for the solution to a problem I did not realize I had. One of the pleasures of QRP is low power levels. One of the ways to get a greater bandwidth from a dipole is to make it a folded dipole. A great way to feed a folded dipole would be with a "TV" balun.

--
73 es cul

wb3fup
a Salty Bear

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message news:-LGcnZ4PIp6L4YCiU-KYvw@comcast.com...
> Tom,
>
> The dipole is a balanced antenna, fed at the center. Stricly speaking, you
> should be using a 1:1 balun to connect to an unbalanced feedline. However,
> no great harm comes if you just connect it to the coax directly. DO NOT use
> a standard TV/FM balun, they are 4:1, and you are better off with it just
> like it is.
>
> Tam/WB2TT
> "Tom" <tstimac01@yahoo.com> wrote in message
> news:bfj8a7$7kp$2@ls219.htnet.hr...
> > I have one question about dipole connected to grounded receiver.
> >
> > I've made dipole antenna. One "pole" is connected to center line of coax,
> > the other to shield line of the coax. Cable goes down to receiver and
> > connects with BNC. The BNC is (of course) connected to case. The case is
> > grounded.
> >
> > Can someone tell me, what is te purpose of the dipole if one of the poles
> is
> > grounded? I mean, why i built two poles when

one goes directly to
> > ground!Shouldn't it be easier to build just a
monopole? I'm puzzled....
> >
> > Thanks in advance
> > tom
> >
> >
>
>

1836. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 18:21:04 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1D8090.FA2E4A0@uci.edu>
Source record: 111930

W5DXP wrote:
> You really need to get your head checked.

It's true. Maybe the doc could tell me how I could think it possible to
have a rational discussion with you.

> > You've always argued with the validity of these equations.
>
> BS! You argue loud and long, eventually change your mind, and then
> come back in a few days with The Big Lie - that is what you believed
> all the while. Anyone who has been following this discussion has
> witnessed you using that underhanded technique any number of times.

I got these off my hard drive. Posted 5/6/03

Jim Kelley wrote:
>
> OC_CAM's Razor wrote:
> >
> > Jim Kelley wrote:
> > > OC_CAM's Razor wrote:
> > >
> > >>There are no matched loads in my entire
> > >>article.
> > >
> > > I was probably just misled by the caption for Fig 3. which reads
> > > "Steady-State Energy Flow Diagram for a Matched System".
> >
> > It's a Z0-matched system with a mismatched load, for God's sake.
> > How else could it have reflections from the load?
>
> It's ridiculous to discuss _energy_ reflections from a load in which all
> the _energy_ from the source is delivered to the load. When the fields
> in the reflected waves cancel, as is the case in the steady state in an
> impedance matched system, _energy_ is not reflected, or re-reflected.
> _Energy_, real useable energy, simply isn't transferred back and forth
> in the way you envision.
>
> (V3+V4) * (I3+I4) = 0. V3 is real, V4 is real, as are I3 and I4. But
> their field cancellation represents zero energy transfer. Your mistake
> is in trying to make power (a virtual commodity in transmission lines),
> V3*I3 interfere with V4*I4. That simply cannot and does not happen.
> It's a conceptual error supported only by a math error.
>
> _Energy_ is only reflected in a mismatched system, and even then it is

> only that portion of the total energy represented by the uncancelled
> portions of the reflected waves; that for which the net fields are
> non-zero in the direction of interest. That is the benchmark in any
> situation in which travelling waves combine non-ortohogonally.
>
> 73, AC6XG

Here's another the same day:

OC_CAM's Razor wrote:
>
> Jim Kelley wrote:
> > What I wrote
> > above describes the case where net energy/sec equals zero because V3 =
> > -V4 and I3 = -I4.
>
> So what happens to V3*I3 + V4*I4?

By now the math error should have become apparent to anyone bothering to
read through this litany of insulting inuendos and allusions. The
correct form is to take the product of the sums rather than the sum of
the products.
(V3+V4) * (I3+I4) = 0

AC6XG

The day before that I wrote:

I wish I could claim it was my model. Physics says that energy and
intensity are proportional. Hecht says that I = I1 + I2 + 2(I1 I2)^-2
cos theta. When cos theta is 1, and I1 = I2, I = 4I1. When cos theta =
0, I = zero. Energy is zero at interference nulls. Period. Note what
the intensity is at the nodes. You might try re-working the problem
taking that into consideration. Just some kindly advice, Cecil.

It was on 5/9/03 that I first posted the correct general form of the
irradiance equation:

I1 + I2 + 2*SQRT(I1*I2)*cos theta

> Exactly what laws of physics completely change during the transient period
> between TO and steady-state?

None. Funny you should think they would.

> You have avoided explaining that momentum
> reversing mechanism like the plague.

What momentum reversing mechanism?

ac6xg

1837. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 19:00:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfk1l6$dq8$1@hercules.btinternet.com>
Source record: 111931

"Dave Shrader" wrote

> I was taught that the Smith CHart is a twentieth [20th] century 'tool'.
>
==========

Transmission lines have been around for about 150 years.
There was a variety of charts used to solve transmission line problems while Victoria was still in good health.
40 or 50 years later Smith drew some circles round one, marked it off in decibels, forward and reflected, and somebody attached his name to it.

In my exams I was stuck with a slide rule. Never used a Smith Chart myself.
I once had one in my hands handed out during a lecture.

==========
> BTW, it's not cheating! When I took my final exam in transmission lines
> Professor James Kirwin allowed, and even provided, Smith Charts for
> student use.

==========

Never heard of Kirwin. He sounds like a nice generous fellow. You got me wrong. The chart never cheats. But it does make a few 'naughty' assumptions. Unless the user is aware of them they will lead you right up the garden path as frequency decreases.

Reg, G4FGQ

1838. Re: Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 19:04:39 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <kj2rhvs83tt3t27k3lvu62ps73shrn8316@4ax.com>
Source record: 111934

On Tue, 22 Jul 2003 10:38:13 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Thought I'd change the thread name to more accurately reflect its
>content. This seems to be the fate of nearly all threads in this newsgroup.
>
>Roy Lewallen, W7EL

Boy, ain't that the truth.

Danny, K6MHE

1839. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 19:10:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1d8d1f_8@corp.newsgroups.com>
Source record: 111933

Jim Kelley wrote:
>
> W5DXP wrote:
>
>>You really need to get your head checked.
>
>
> It's true. Maybe the doc could tell me how I could think it possible to
> have a rational discussion with you.
>
>
>>>You've always argued with the validity of these equations.
>>
>>BS! You argue loud and long, eventually change your mind, and then
>>come back in a few days with The Big Lie - that is what you believed
>>all the while. Anyone who has been following this discussion has
>>witnessed you using that underhanded technique any number of times.
>
> I got these off my hard drive. Posted 5/6/03

Thanks for proving my point. If you continually change your mind to
be correct, you can maintain your omniscient self image. OTOH, you
have not proved anything I said to be incorrect.

>>You have avoided explaining that momentum
>>reversing mechanism like the plague.
>
> What momentum reversing mechanism?

From _Optics_, by Hecht: "One of the most significant properties of
the electromagnetic wave is that it transports energy and momentum."

Are you ready to change your mind yet one more time and admit, contrary
to your previous assertions, that EM waves transport energy and possess
momentum?

Let's stop the debate over who said what (long before you even started
posting to this newsgroup). Please pick one point of technical disagreement
that you think exists between us and let's discuss it rationally devoid
of your numerous diversions, ad hominem attacks, and falsehoods.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1840. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 19:12:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfk2a9evn1@hercules.btinternet.com>
Source record: 111932

Transmission lines with high SWR are amongst the most useful of radio components. We couldn't do without them.

1841. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 20:09:35 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3SgTa.111167$sY2.49027@rwcrnsc51.ops.asp.att.net>
Source record: 111935

Yuri, I'm pulling your leg a little bit, but just a little bit.

Hot resistors radiate EM energy in the IR region of the spectrum <grin>.

DD, W1MCE

Yuri Blanarovich wrote:

>>Oh Yuri!! All resistors in any circuit radiate EM energy!
>>
>>DD, W1MCE
>
>
> ...and cause SWR. Can you picture little, unmatched radiating resistor in the
> circuit? Live and learn eh?
> I thought they ate the RF without passing any to our precious environment. What
> me dummy!
> But I think we should start new thread or threat on how much resistor,
> capacitor or asamatteroffact anything radiates, how the SWR affects this
> un/desired property, what the photons and black holes do about it and how to
> magnify this effect so we can beat the record on number of postings.
> Back to my no SWR feedlines.
>
> Bada Fun BUm

1842. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 20:10:22 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <OSgTa.111168$sY2.49105@rwcrnsc51.ops.asp.att.net>
Source record: 111936

Cecil, you are sharp!!

DD

W5DXP wrote:

> Yuri Blanarovich wrote:
>
>>> Oh Yuri!! All resistors in any circuit radiate EM energy!
>>
>>
>> ...and cause SWR. Can you picture little, unmatched radiating resistor
>> in the
>> circuit? Live and learn eh? I thought they ate the RF without passing
>> any to our precious environment.
>
>
> They do eat RF without passing more than a negligible amount to our
> environment. But they also convert the energy from RF energy to radiated
> heat which is just as much of an EM wave as the RF wave was. The old
> RF wave is destroyed but since the energy in that RF wave cannot be
> destroyed, it must be converted. In this case it is converted to
> an infrared wavelength.
>
> The way to keep a resistor from radiating heat is to enclose it in
> a heat sink in which case the heat sink probably radiates heat as
> well as conducts heat.

1843. Re: Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 20:12:36 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <UUgTa.109808$GL4.28453@rwcrnsc53>
Source record: 111937

Roy, you've been getting blamed for everything lately.

Now we can blame you for the new thread ... you started it! <grin>

DD, W1MCE

Roy Lewallen wrote:

> Thought I'd change the thread name to more accurately reflect its
> content. This seems to be the fate of nearly all threads in this newsgroup.
>
> Roy Lewallen, W7EL
>

1844. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 20:45:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1da36f$1_3@corp.newsgroups.com>
Source record: 111938

Dave Shrader wrote:
> Cecil, you are sharp!!

:-) Why do you think I draw so much flak? :-) I agree with Albert.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1845. Re: Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 20:48:42 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1da435_3@corp.newsgroups.com>
Source record: 111939

Dave Shrader wrote:
> Roy, you've been getting blamed for everything lately.
> Now we can blame you for the new thread ... you started it! <grin>

Roy doesn't seem to appreciate me making hamburger out of ham radio's sacred cows. :-) I actually enjoy the T-Bones best of all.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1846. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 21:59:30 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <6tiTa.115291$Io.9834696@newsread2.prod.itd.earthlink.net>
Source record: 111940

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1bf9b1_4@corp.newsgroups.com...
> Roy Lewallen wrote:
>
> > W5DXP wrote:
> >> In a nutshell, what laws of physics get repealed
> >> just as steady-state is achieved?
>
> > Sorry, that's not worthy of a reply.
>
> OK, I'll answer it. No laws of physics get repealed just as
> steady-state is achieved. All the steady-state model does is to
> allow some mathematical shortcuts. (But it does not allow photons
> to oscillate locally between equivalent lumped circuit constants.)
>
> Some people apparently believe that those steady-state mathematical
> shortcuts turn around and effect reality. Causing something happen in
> reality by just thinking about a mental model is the domain of religion,
> not science. The steady-state model does NOT effect reality. Conditions
> on a transmission line are exactly the same whether the steady-state
> model is used or not. Nothing magic, like disappearing standing waves,
> happens at the instant steady-state is achieved.

Standing waves disappear at the instant steady state is reached??????

Cecil, something must have changed since I last talked with you, because
your statement above indicacates you're out of your mind!

Walt

1847. Re: Dipole connected to grounded receiver?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 22:19:20 UTC
From: Tom <tstimac01@yahoo.com>
Message-ID: <bfkd5k$gf8$1@ls219.htnet.hr>
Source record: 111941

W7TI wrote:
> It just happens to be grounded for convenience, because the circuitry in
> the radio is grounded and making the connection between antenna and
> radio is easier. Strictly speaking, we shouldn't be using the word
> "grounded" here, but rather we should refer to a common connection.
> Neither the antenna nor the radio has to be connected to an actual earth
> ground to work.

Well actually my story is a little bit different. I've spent 1 and half hour diging the hole and beating the pipe with the sledge hammer for another 2 hours in front of my building while listening my neighbours complaining.... all that just to finally have a good grounding.

Connected the ground to my receiver and realized that from now on my dipole is no longer "floating". One of its ends is now directly grounded through the BNC connection on the case.

So now i would just like to know can i disconnect one of the poles from my dipole and use monopole? Is maybe the trick in capacity between two poles? Is that the reason why i can't remove one pole?

Thanks in advance....
tom

1848. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 22:44:58 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1DBE6A.89F0997@uci.edu>
Source record: 111942

Richard Harrison wrote:
>
> Cecil, W5DXP wrote:
> "That`s where you are wrong."
>
> This argument has evoked plain statements, i.e., "When waves cease to
> exist, they are forced to give up their intrinsic energy." And, "Waves
> don`t cease to exist."
>
> The statements need qualifications. Perhaps waves "cancel" without
> ceasing to exist.

In the case we've been discussing the waves in fact never exist, except on paper. This is because, for example, V3 and V4 cancel at the very point at which they would begin to propagate. Cancellation precludes their existance because they cancel for any time element (after the transient period) and for every spacial element one can enter into the equation. Contrary to what has been suggested, they do not first appear and then subsequently disappear. Waves cannot just "cease to exist" for the very same reason that energy cannot cease to exist.

It may be somewhat easier to see this when we consider that each boundary can be viewed as a radiator, or re-radiator. When a wave impinges upon it, the boundary conditions and the nature of the incident wave determine how waves will be re-radiated from it. With a wave impinging upon the boundary from one direction only, we would have one outcome. With two or more waves impinging upon the boundary, we may have a different outcome.

73, Jim AC6XG

1849. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 22:52:27 UTC
From: Elmer E Ing <"Elmer E Ing"@tutor.org>
Message-ID: <KejTa.9962$ff.3495@fed1read01>
Source record: 111943

Ah there is the right way, the wrong way, and the Ham's way.
Bravo -- continuity is continuity

"W7TI" <noway@nohow.com> wrote in message
news:38erhvgsnrmodl5idetg445vu6hilsia73@4ax.com...
> Maybe this has been done before, but it's the first time I've heard of
> this method.
>
> While struggling as usual to attach some PL-259s to some Belden 9913F,
> it occurred to me that the four little holes for soldering the braid
> were not really needed. Instead, I soldered the braid directly to the
> connector at the point where it entered. Picture at:
>
> www.dslextreme.com/users/teeaye/coax.jpg
>
> I soldered it all around the connector, although I suppose only one
> point would be ok.
>
> The braid is exposed so it would need weatherproofing for outside use.
> But all in all, it seems to me to be far superior to trying to solder
> through the little holes. It's much stronger and you can easily see if
> you have a good connection.
>
> Also, only a small-wattage iron is needed. I used a 40-watt Weller,
> which is not hot enough doing it the normal way. There is less metal
> acting as a heat sink.
>
> Another advantage is you can trim the braid much farther back from where
> you strip the center conductor. This helps reduce the chances of a
> stray strand causing a short.
>
> The only drawback I can see would be if the coax were hanging down and
> swinging in the breeze - the solder could develop metal fatigue over
> time. On the other hand, the coax should be strain-relieved anyway,
> else it's just holding on by the four holes and the center conductor.
> Not much better, if at all.
>
> Comments?
>
> --
> 73, Bill W7TI

1850. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:15:29 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfkgi9mhv1@slb2.atl.mindspring.net>
Source record: 111944

You have answered your own question. If all the other radios work...to some degree. And the new one does not...at all. The new one is broke.

As for checking out the AM/FM at the shop. This could mean this to 'some' It lite up..it works.

Dan/W4NTI

"Rev Tom Cox" <rvtomcox@epix.net> wrote in message news:E3cTa.9760$EZ5.3350629@news1.epix.net...
> As he subject implies I purchased an all in one unit,with surround sound
> etc. The problem is I have yet to get even a static or buzz not to mention a
> real radio station on either the am or fm mode. The cheapos sent a small
> dipole antenna for the fm,(who wants a dipole antenna on their living room
> wall, and an obviously just as cheapo am loop antenna. I have now tried a
> $35 indoor antenna for am/fm that is under 12 volt power to boost signal.
> Still nothing works. The unit was in the shop for the dvd player and I ask
> them to check the function of the am/fm and the repair tag came back as all
> ok. I am surrounded by trees, but frankly all the other radios in the
> house work from my small portables to the large receiver that was replaced
> by the new unit.
> Does anyone have any ideas as to what my next step should be? Assuming the
> am/fm function works then I am having trouble with the antenna, and an
> outside antenna is not out of the question but does not satisfy the am side.
> Open to all suggestions and Thanks for listening to a real neophyte in this
> area.
>
> --
>
>

1851. Re: Dipole connected to grounded receiver?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:19:05 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <C-idnTimHZXyW4CiXTWJjg@comcast.com>
Source record: 111945

Just don't try to use in on 160m. I put one on a network analyzer once, and looked like it would be good down to 40M. And you do mean QRP! That's #30 wire in there.

Tam/WB2TT
"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bfjv00$fk9ch$1@ID-134747.news.uni-berlin.de...
> Thank you for the solution to a problem I did not
> realize I had. One of the pleasures of QRP is low
> power levels. One of the ways to get a greater
> bandwidth from a dipole is to make it a folded
> dipole. A great way to feed a folded dipole would
> be with a "TV" balun.
>
> --
> 73 es cul
>
> wb3fup
> a Salty Bear
>
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in
> message news:-LGcnZ4PIp6L4YCiU-KYvw@comcast.com...
> > Tom,
> >
> > The dipole is a balanced antenna, fed at the
> center. Stricly speaking, you
> > should be using a 1:1 balun to connect to an
> unbalanced feedline. However,
> > no great harm comes if you just connect it to
> the coax directly. DO NOT use
> > a standard TV/FM balun, they are 4:1, and you
> are better off with it just
> > like it is.
> >
> > Tam/WB2TT
> > "Tom" <tstimac01@yahoo.com> wrote in message
> > news:bfj8a7$7kp$2@ls219.htnet.hr...
> > > I have one question about dipole connected to
> grounded receiver.
> > >
> > > I've made dipole antenna. One "pole" is
> connected to center line of coax,
> > > the other to shield line of the coax. Cable
> goes down to receiver and

> > > connects with BNC. The BNC is (of course)
> connected to case. The case is
> > > grounded.
> > >
> > > Can someone tell me, what is te purpose of the
> dipole if one of the poles
> > is
> > > grounded? I mean, why i built two poles when
> one goes directly to
> > > ground!Shouldn't it be easier to build just a
> monopole? I'm puzzled....
> > >
> > > Thanks in advance
> > > tom
> > >
> > >
> >
> >
>
>

1852. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:20:21 UTC
From: helmsman <helmsman@mindspring.com>
Message-ID: <lkhrhvk3lktk81mrj0e3q535ckm4i4dl4v@4ax.com>
Source record: 111946

On Tue, 22 Jul 2003 15:42:26 -0700, W7TI <noway@nohow.com> wrote:

>Maybe this has been done before, but it's the first time I've heard of
>this method.
>
>Comments?

Bravo!!!!

.
Boycott anything made in France and vacation somewhere else.

1853. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:20:36 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030722192036.09680.00000324@mb-m11.aol.com>
Source record: 111947

>The only drawback I can see would be if the coax were hanging down and
>swinging in the breeze - the solder could develop metal fatigue over
>time. On the other hand, the coax should be strain-relieved anyway,
>else it's just holding on by the four holes and the center conductor.
>Not much better, if at all.
>W7TI

It's not holding by four holes, but by being screwed by the jacket.
Screwing the connector body onto the coax jacket provides weather proofing and mechanical "connection" between the cable and connector. What you did is to expose the watersucking braid to rain and braid will eventually break off at the junction of braid.solder/braid (tiny hair wires). If you never use the coax outside and don't rock it, you might be OK.
But can you picture "horrible" impedance jump because of your action? Cecil will never forgive you!
Kinda we were all stupid for all those years doing it the other way? :-)

Yuri

1854. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:44:06 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <a%jTa.110164$wk6.28270@rwcrnsc52.ops.asp.att.net>
Source record: 111948
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

W7TI wrote:

> On 21 Jul 2003 21:24:31 -0700, robkemp90210@hotmail.com (Rob Kemp)
> wrote:
>
>
>>"According to industry sources, data rates of up to 20 MB/s are
>>possible for distances of up to 2,000 feet, and of up to 3 MB/s for
>>distances of up to 4,000 feet."
>
>
> ----------
>
> I came in late here, but if that's all the farther we're talking about,
> why not use low power microwave links? Is there some technical reason
> to favor BPL?
>
NOPE!! But, there is a FINANCIAL INTEREST

1855. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:46:28 UTC
From: Rich <rk911@ANTISPAM.yahoo.com>
Message-ID: <88jrhvkleg7eput0j5458odm5df2amve7k@4ax.com>
Source record: 111950

On Tue, 22 Jul 2003 14:42:44 GMT, "Rev Tom Cox" <rvtomcox@epix.net>
wrote:

>As he subject implies I purchased an all in one unit,with surround sound
>etc. The problem is I have yet to get even a static or buzz not to mention a
>real radio station on either the am or fm mode. The cheapos sent a small
>dipole antenna for the fm,(who wants a dipole antenna on their living room
>wall, and an obviously just as cheapo am loop antenna. I have now tried a
>$35 indoor antenna for am/fm that is under 12 volt power to boost signal.
>Still nothing works. The unit was in the shop for the dvd player and I ask
>them to check the function of the am/fm and the repair tag came back as all
>ok. I am surrounded by trees, but frankly all the other radios in the
>house work from my small portables to the large receiver that was replaced
>by the new unit.
>Does anyone have any ideas as to what my next step should be? Assuming the
>am/fm function works then I am having trouble with the antenna, and an
>outside antenna is not out of the question but does not satisfy the am side.
>Open to all suggestions and Thanks for listening to a real neophyte in this
>area.

take it back to the store and demand a refund. your unit is not
working. fm reception may require an external antenna of some sort
but there should be a ferrite antenna built-in to the unit for AM.
unless you're living in the middle of the mojave desert you should
hear SOMETHING on AM.

73,

rich, n9dko

1856. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:48:24 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <c3kTa.110514$GL4.28396@rwcrnsc53>
Source record: 111949

Rev. Tom, it sounds like you were sold a defective radio.

Take it to Radio Shack and have them demonstrate in their store that it
is working!!

Rev. Dave

Rev Tom Cox wrote:

> As he subject implies I purchased an all in one unit,with surround sound
> etc. The problem is I have yet to get even a static or buzz not to mention a
> real radio station on either the am or fm mode. The cheapos sent a small
> dipole antenna for the fm,(who wants a dipole antenna on their living room
> wall, and an obviously just as cheapo am loop antenna. I have now tried a
> $35 indoor antenna for am/fm that is under 12 volt power to boost signal.
> Still nothing works. The unit was in the shop for the dvd player and I ask
> them to check the function of the am/fm and the repair tag came back as all
> ok. I am surrounded by trees, but frankly all the other radios in the
> house work from my small portables to the large receiver that was replaced
> by the new unit.
> Does anyone have any ideas as to what my next step should be? Assuming the
> am/fm function works then I am having trouble with the antenna, and an
> outside antenna is not out of the question but does not satisfy the am side.
> Open to all suggestions and Thanks for listening to a real neophyte in this
> area.
>

1857. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-22 23:54:12 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <E8kTa.110213$wk6.28532@rwcrnsc52.ops.asp.att.net>
Source record: 111951

1) It NEEDS weatherproofing.

2) It produces an impedance discontinuity that is larger than that
produced by correct assembly. It will be more noticeable on upper HF and
VHF than 160 or 80 meters.

3) There is no strain relief.

4) If it meets your needs then only weatherproof it.

DD, W1MCE

W7TI wrote:

> Maybe this has been done before, but it's the first time I've heard of
> this method.
>
> While struggling as usual to attach some PL-259s to some Belden 9913F,
> it occurred to me that the four little holes for soldering the braid
> were not really needed. Instead, I soldered the braid directly to the
> connector at the point where it entered. Picture at:
>
> www.dslextreme.com/users/teeaye/coax.jpg
>
> I soldered it all around the connector, although I suppose only one
> point would be ok.
>
> The braid is exposed so it would need weatherproofing for outside use.
> But all in all, it seems to me to be far superior to trying to solder
> through the little holes. It's much stronger and you can easily see if
> you have a good connection.
>
> Also, only a small-wattage iron is needed. I used a 40-watt Weller,
> which is not hot enough doing it the normal way. There is less metal
> acting as a heat sink.
>
> Another advantage is you can trim the braid much farther back from where
> you strip the center conductor. This helps reduce the chances of a
> stray strand causing a short.
>
> The only drawback I can see would be if the coax were hanging down and
> swinging in the breeze - the solder could develop metal fatigue over
> time. On the other hand, the coax should be strain-relieved anyway,
> else it's just holding on by the four holes and the center conductor.
> Not much better, if at all.
>

> Comments?
>

1858. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 00:17:31 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307221301.14604b40@posting.google.com>
Source record: 111952

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhom1pi2qfsu36@corp.supernews.com>...
>
> The power density is related to E and H fields by the Poynting vector, where
>
> PD = E X H
>
> I'm not going to derive this one -- you can find it in any
> electromagnetics text.
>
> In the far field in a lossless medium, E is in time phase with H.
> Consequently, the magnitude of PD is simply |E| * |H|. The latter two
> have to be RMS values for PD in watts; for peak values, you need an
> addition factor of 1/2. Again in the far field, E/H = Z0, where Z0 is
> the impedance of the medium. The definition of Z0 is generally defined
> in terms of the permittivity and permeability of the medium, and the far
> field E/H relationship follows from it. That's another one I won't
> derive here, and that you can easily find in a text. In a lossless
> medium, Z0 is purely real, making the math simple.
>
> So, (dealing now only with magnitudes) given that PD = E * H and Z0 =
> E/H, it follows that PD = E^2/Z0 = H^2 * Z0. Solving for E gives the
> equation you're asking about.
>

Thanks Roy, i'm gonna look up these derivations.

> > Here's something else I'm wondering about. If you get an answer
> > of 1 uV/meter, does this mean that a perfect conductor of 1 meter
> > length placed in this field (polarized with the E field) will measure
> > 1uV RMS if you measure the AC voltage on the ends?
>
> No, it doesn't quite work out that way, because of the triangular
> current distribution on the 1 meter wire (assuming that the wavelength
> is >> 1 meter). The "effective height" of a wire that's short in terms
> of wavelength turns out to be 1/2 the actual length.
>

Well, that sounds reasonable and is why i asked what people used
on the receiving end for field-strength measurements. Would the above
be valid for wavelength << than one meter? Perhaps i'm totally off
because the 1 uV/meter might mean that one would measure the 1uV RMS
across 1 meter of the medium in question (377 Ohms for free-space, no
wire involved at all?)?

> In the real world,
> > what sort of receiving antenna do they use to measure E fields?
>
> Near field E intensity is typically measured with a short probe. Far
> field measurement is done with conventional antennas. In the far field,
> once the E, H, or power density is known, the other two can be calculated.
>

Short probe that may be much shorter than one wavelength,
unfortunately?

> > Obviously, the recieve antenna will affect the measurement...perhaps
> > you want something broadband, so as not to favor a particular
> > frequency (a resonance on the receive antenna will throw off the
> > reading)? Perhaps something as isotropic as possible, so orientation
> > is not as critical. How does the FCC measure it, what equipment do
> > they use?
>
> To my knowledge, the FCC doesn't do any measurements. Test labs doing
> far field measurements typically use a conical dipole for the HF range,
> and log periodic antenna for VHF and UHF. Although these are inherently
> broadband, the dipole in particular varies a great deal with frequency.
> So each antenna comes with a correction factor table. That's why EMI
> measurement antennas, though simple, are expensive.
>

That's what i wanted to read, that they use a correction factor
table so that they can take out the natural resonance(s) of the
receive antenna. And it makes total sense that they would use a
different antenna for each frequency range.

The tricky part of making the correction factor table would be
that ideally, you would have an isotropic radiator that was perfectly
wide-band, and feed this with known input powers. This being
impossible, i would imagine that they might take advantage of the
reciprocity of antennas, and use the same antenna for both transmit
and receive, and then divide the correction factor by two, 1/2
correction for each antenna.

> Some of the FCC Part 15 measurements I've been involved with are
> actually done within the near field, but are done with standard antennas
> nonetheless. Although the conversion from power density to field
> strength isn't entirely valid, everybody plays by the same rules. I
> think some of the FCC rules for safety now required for amateurs are
> also in this category.
>
> I haven't seen quantitative near field measurements being done, just
> qualitative ones using a short probe.
>
> Roy Lewallen, W7EL

Perhaps the far-field measurements would require too sensitive a
field-strength meter? Or maybe it's just more convenient to measure

up close.

Slick

1859. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 00:20:50 UTC
From: James <james@nospamforme.org>
Message-ID: <3F1DD4E1.1E7E8E15@nospamforme.org>
Source record: 111953
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

NC State University here in Raleigh has wired the entire residential campus,
RESNET, along
with the entire campus. A story in the paper reported that they ran enough
cable, including optical,
to go from Raleigh to Florida and back !

I think this bpl is a ploy to trash the bands so they can sell them off to
highest bidders
once the tv stations move to digital and leave the hf bands.

jim

Brenda wrote:

> "nothermark" <trash@gnomex.cotse.net> wrote in message
>
>
> Yes, most colleges (if not all) already have T-1 or T-3 lines which are
> networked through every building. I seriously doubt they would ever
> consider BPL technology because it would be a net loss of something on the
> order of 70% of their current bandwidth. Each student has more or less the
> equivalent of something like 5% of the total bandwidth available via BPL..
> (these are only guesstimates, but they are based upon figures I have seen
> posted about BPL's bandwidth, it starts getting down to dial-up levels by
> the time it's been distributed to 2,000 users..)

1860. 30 meter add-on for HF2-V idea

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 00:50:49 UTC
From: t_ashland@yahoo.com
Message-ID: <6e6aeba9.0307221358.7aef741f@posting.google.com>
Source record: 111954

I haven't tried it, but I thought why wouldn't a 23' foot piece of wire parallel to the HF2-V fed at the base work for 30 meters? I realize you might have to retune 40 and 80, but it sure would beat buying the 30 meter add on kit. Any thoughts would be appreciated. Anyone try any other 30 meter solutions with this vertical?
73,

Terry, WK0F

1861. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 00:53:46 UTC
From: richardharrison@webtv.net
Message-ID: <25662-3F1DDC9A-210@storefull-2313.public.lawson.webtv.net>
Source record: 111958

Cecil, W5DXP wrote:
"Nothing magic, like disappearing standing waves, happens at the instant stead-state is achieved."

Print doesn`t convey sarcasm nearly so well as does tone of voice. Cecil knows as well as anybody that a standing wave is manifestation of the stagnant phase between incident and reflected waves persisting on a long transmission line.

What Cecil said is true. No magic moment arrives when anything goes "poof!" at the end of a transistion.

The insane usually insist that they are sane. But, they seldom vouch for each other, hence my testimony.

Best regards, Richard Harrison, KB5WZI

1862. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 01:01:20 UTC
From: Brenda Ann <brendad@shinbiro.com>
Message-ID: <bfkkje$iv8$1@news1.kornet.net>
Source record: 111955
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

"James" <james@nospamforme.org> wrote in message
news:3F1DD4E1.1E7E8E15@nospamforme.org...
> I think this bpl is a ploy to trash the bands so they can sell them off to
> highest bidders
> once the tv stations move to digital and leave the hf bands.
>
> jim

There is no broadcast television in the HF bands. Channel 2 is 54-60 MHz,
low VHF... but that part of the band (up through channel 5) is also within
the scope of BPL frequencies..

1863. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 01:03:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhrnmu43m03lad@corp.supernews.com>
Source record: 111956

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhom1pi2qfsu36@corp.supernews.com>...
> . . .
>>
>>No, it doesn't quite work out that way, because of the triangular
>>current distribution on the 1 meter wire (assuming that the wavelength
>>is >> 1 meter). The "effective height" of a wire that's short in terms
>>of wavelength turns out to be 1/2 the actual length.
>>
>
>
>
> Well, that sounds reasonable and is why i asked what people used
> on the receiving end for field-strength measurements. Would the above
> be valid for wavelength << than one meter? Perhaps i'm totally off
> because the 1 uV/meter might mean that one would measure the 1uV RMS
> across 1 meter of the medium in question (377 Ohms for free-space, no
> wire involved at all?)?

It's valid only as long as the length of the wire is << a half
wavelength (actually, << 1/4 wavelength for a single wire, half
wavelength for a dipole).

Here's the problem with that transformer concept again. A field is not a
voltage. So you can't measure it with a voltmeter. You can convert the
fields to voltages and currents by use of a transducer -- an antenna --
then you can measure the voltage and current from the antenna with
ordinary meters.

Good thing, too. Otherwise we'd all get electrocuted by the Earth's 100
volt/meter field. (And that's on a day with no storm nearby.)

The relationship between the fields, voltages, and currents is nicely
expressed by Maxwell's equations.

>
>
>
>
>> In the real world,
>>
>>>what sort of receiving antenna do they use to measure E fields?
>>
>>Near field E intensity is typically measured with a short probe. Far
>>field measurement is done with conventional antennas. In the far field,

>>once the E, H, or power density is known, the other two can be calculated.
>>
>
>
>
> Short probe that may be much shorter than one wavelength,
> unfortunately?

Yep.

> . . .

>
>>Some of the FCC Part 15 measurements I've been involved with are
>>actually done within the near field, but are done with standard antennas
>>nonetheless. Although the conversion from power density to field
>>strength isn't entirely valid, everybody plays by the same rules. I
>>think some of the FCC rules for safety now required for amateurs are
>>also in this category.
>>
>>I haven't seen quantitative near field measurements being done, just
>>qualitative ones using a short probe.
>>
>>Roy Lewallen, W7EL
>
>
>
> Perhaps the far-field measurements would require too sensitive a
> field-strength meter? Or maybe it's just more convenient to measure
> up close.

No, it's far field measurements that are more common. One problem with making near field measurements is that the near field varies all over the map with the type of antenna and the exact spot where you're making the measurement. And it's of no importance at all to anything very far away at all. I've only seen near field probing done to locate the source of a problem emission. Compliance measurements are usually done with far-field techniques, in or at least at the fringes of the far field. The "within the near field" measurements I'm referring to are HF measurements done at distances that aren't firmly in the far field. (The far field boundary depends on the nature of the radiating structure, and is nebulous anyway.) The FCC addresses this issue for Part 15 somewhat in section 15.31(f).

Roy Lewallen, W7EL

1864. Re: TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 01:07:20 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <htnrhvc9qgrdhev9skiod79l12h20rct2p@4ax.com>
Source record: 111957

On Mon, 14 Jul 2003 22:14:10 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>Roger,
>
>He is talking about having the two antennas pointed in different directions.
>Bad news for ghosts.

And here I thought ghosts thrived in that situation.<:-))

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>
>Tam/WB2TT
>

1865. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 01:46:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3oprhvogkkuegmisb8p9dblngrfs95h8lk@4ax.com>
Source record: 111959

On Tue, 22 Jul 2003 19:53:46 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Cecil, W5DXP wrote:
>"Nothing magic, like disappearing standing waves, happens at the instant
>stead-state is achieved."
>
>Print doesn`t convey sarcasm nearly so well as does tone of voice. Cecil
>knows as well as anybody that a standing wave is manifestation of the
>stagnant phase between incident and reflected waves persisting on a long
>transmission line.
>
>What Cecil said is true. No magic moment arrives when anything goes
>"poof!" at the end of a transistion.
>
>The insane usually insist that they are sane. But, they seldom vouch for
>each other, hence my testimony.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

The record of your quotation, above, is incomplete.
>"Nothing magic, like the invention of talking movies, happens at the instant
>stead-state is achieved."

>"Nothing magic, like exploding suns, happens at the instant
>stead-state is achieved."

>"Nothing magic, like the kidnapping of the Lindberg baby, happens at the instant
>stead-state is achieved."

>"Nothing magic, like signing of the Declaration of Independance, happens at the instant
>stead-state is achieved."

As with any babbling of inmates: so much to say, so little said in the
first place....

The Marquis de Sade put more effort into his writing and got more
participation out of the inhabitants of Charenton in his production of
the "Persecution and Assassination of Jean-Paul Marat."

73's
Richard Clark, KB7QHC

1866. Re: efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 02:00:06 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <G_ITa.12104$Vx2.5848866@newssvr28.news.prodigy.com>
Source record: 111960

Really? Even a vertical dipole?

de AI8W, Chris

Yuri Blanarovich wrote:
>>But aren't there ground independant verticals, like the Half Square or a
>>Bob-Tail-Curtain?
>>
>>
>>
>>U of M
>>GO BLUE!!!
>>
>>God, Guns, and Guts
>>Protect America!!!
>>
>
>
> Every vertical "needs" the ground for its efficient performance especially at
> the low angles. Vertical dipoles and their elevated cousins are still "looking"
> out at the ground, farther waway and with a bit less of participation.
> Wanna see dramatic display of salt water "ground" performance/contribution?
> Take your any verticaly polarized antenna and compare its performace between
> ground ground and salt water ground. You would see somewhere between 10 - 15 dB
> difference.
>
> Yuri

1867. Re: efficiency of horizontal vs vertical antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 02:23:24 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030722222324.09680.00000332@mb-m11.aol.com>
Source record: 111961

>
>Really? Even a vertical dipole?
>
>de AI8W, Chris

Yesereee!
K2KW and "team vertical" (Force 12) did some tests and measurements across the San Francisco Bay and found that using half wave vertical dipole and moving it from the salt water/beach boundary (0 dB reference) they would get 3 dB gain being 1/4 wave away from the edge, - 2dB for 1/2 wave and + 2 dB for 3/4 wave. Anything that is vertically polarized gets help from better ground, especially at the low angles in the pattern.
Claims of advertisers that their wundervertical needs no radials or ground are full of SWR!

I am trying to find some practical results of verticals being operated on the side of a hill. Anyone out there with experience?

Yuri da vertical fan BUm

1868. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 02:31:51 UTC
From: dxer@aol.com
Message-ID: <20030722223151.03007.00000400@mb-m01.aol.com>
Source record: 111962

There are lots of interesting and very good antennas for AM DXing. A box loop is very good. As are some commercial loops.
There is the K9AY and the EWE and the beverage on the groung antenne. The EWE is very interesting.

There is a club with a web page that is dedicated to AM DXing with lots of info at,

http://www.ircaonline.org/

Here is a good article on the EWE antenna for AM DXing at.

http://www.nrcdxas.org/articles/ewe.html

Craig N0BSA

1869. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 02:38:43 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307221838.fcdf9b8@posting.google.com>
Source record: 111963

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0307201110.383da88a@posting.google.com>...
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307200652.27fcdea9@posting.google.com>...
> > >
> > >
> > > Slick
> >
> > Dr Slick,
> > Way back in this thread you alluded to antennas as being
> > transformers. The more I think about that statement the more I see
> > it as being fact. Anything that involved coupling which all
> > antennas do can be drawn as a transformer !
> > Since the thread migrated all over the place did you feel that
> > the group agreed with that position?
> > Regards
> > Art
>
>
> Some have emailed me personally, and we have pretty much agreed on
> these two points(even Roy agreed with these, if you read his posts
> here):
>
>
> 1. Two antennas (also called transducers) placed close together
> actually can be considered a transformer, albeit a very inefficient
> one.

Humm...By antenna I assume it also means a radiator. This would
suggest
that a stagger tuned radiators would fall into the catagory discussed
above.
Now I have a problem with that statement, because I very much see it
as a transformer which is VERY efficient and not as you stated "albiet
a very inefficient one".
Can you explain to me how a stagger tuned antenna migrate into
inefficient radiators?
Seems to me that Thevenin's theorem would show this as being
incorrect !

---
snip
>
>
>

> Slick

Regards
Art

1870. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 03:04:15 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F1DFB2F.661BACF2@cwis.net>
Source record: 111964

```
Rev Tom,
Save yourself time and trouble, take it back for
a refund. If they ask 'why', tell them.
'Doc
```

1871. Re: Hustler 6btv Vertical Tech Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 03:26:38 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <YfnTa.1533$5b7.1141@lakeread01>
Source record: 111965

Looks to me like you got a section or trap in the wrong place. Double check
your assembly.

--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64

"Gary Boyer" <gboyer@columbus.rr.com> wrote in message
news:26gSa.4407$R46.2485@fe3.columbus.rr.com...
> I can not get the reson. freq. in the band..for example..everything is low
> in frequency:
>
> 10 Meters center freq. 27.262 MHz.
> 15 Meters " " 20.895 MHz.
> 20 Meters " " 14.653 MHz.
>
> The Vertical is ground mounted with radials.....,manufact. spacing cannot
be
> adjusted any further...I used a mfj ant. analyzes. to measure the reson.
> freq,..anyone else had this problem..if so, how did you fix it...any
> suggestions would be most appreciated...tnx.....Gary..K8BY
>
>

1872. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 03:45:00 UTC
From: mikehaack@aol.com
Message-ID: <20030722234500.00723.00000338@mb-m25.aol.com>
Source record: 111966

And whats so wrong about installing the connector the way it was designed?

I've put on hundreds, and have never had trouble soldering the braid unto a quality connector.

Whats the problem I'm missing here..?
73 de Mike, WB9B

1873. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 03:47:29 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f1e06ef_4@news1.prserv.net>
Source record: 111967

Cecil:

Manufacturer and model #?
Or location of one in South Texas?
Or URL for manufacturer of one?
Outside a sub-station, of course, which will be the requirement for BPL repeaters, which will also have to be bi-directional.

--
Crazy George
Remove NO and SPAM from return address
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message news:3f1d5021_1@corp.newsgroups.com...
> WB2JKX wrote:
> > It would seem that the use of repeaters on the HV lines would require the
> > power line to be broken into isolated sections (RF-wise) where the repeaters
> > are located, with the 60Hz bypassed around the repeater. This can't be good
> > for reliable electric service.
>
> The power companies have already been using power line carrier repeaters
> for many, many years. The repeaters are the bypass, not vice versa.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1874. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 03:57:05 UTC
From: Jerry Oxendine <joxendi@bellsouth.net>
Message-ID: <vwnTa.3794$H73.2778@fe02.atl2.webusenet.com>
Source record: 111968

W7TI <noway@nohow.com> wrote in message
news:1svrhv85rtot69rkvuhlr62lolidns92nl@4ax.com...
> On 22 Jul 2003 23:20:36 GMT, k3bu@aol.comnoSaddam (Yuri Blanarovich)
> wrote:
>
> >It's not holding by four holes, but by being screwed by the jacket.
> >Screwing the connector body onto the coax jacket provides weather
proofing and
> >mechanical "connection" between the cable and connector. What you did is
to
> >expose the watersucking braid to rain and braid will eventually break off
at
> >the junction of braid.solder/braid (tiny hair wires). If you never use
the coax
> >outside and don't rock it, you might be OK.
> <snip>
>
> I agree, the "watersucking" braid needs to be waterproofed if used
> outdoors.
>
>
> >But can you picture "horrible" impedance jump because of your action?
Cecil
> >will never forgive you!
> <snip>
>
> Good point. I will do a test on 144 MHz and see if there is a
> measurable difference. The diameter of the connector is larger than the
> diameter of the braid, but only for about 1/2 inch or so. At microwave
> freqs that would be a no-no, but then who uses PL-259s for microwave?
>
> I'll report back what I find.
>
> --
> 73, Bill W7TI

I have NEVER soldered those damned holes. I remove the outer cover and
"pick" the braid all round. Then I remove the inner cover (center
conductor)and tin it. Then I fold the braid back over the remaining out
cover and then
screw on the adaptor (if any) onto the braid. Then I tighten the adaptor
onto
the body of the connector and tighten with pliers. Then I solder the center
wire

as usual. If there is any braid left I trim it off with a knife. This compares with
the "old" way and does not cause any more absorption--one ought to moisture-proof one's outside connectors anyway. Actually, in my experience, soldering
those stupid holes causes trouble of its own. With the braid soldered, the braid
suspends the feedline anyway, right? This means that the braid and the center
pin are in the same "room", as it were. All it takes is one eensy weensy wire of
that braid to get down into the center and short out the whole thing. By folding
the braid back AWAY under the adaptor (or under the rear of the PL-259 body) it isolates the assembly. Besides, it is easier to unsolder a connector and use it
again. It does work. and I have been doing it for over 30 years.

73

Jerry
K4KWH

1875. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 04:04:48 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f1e0af9_4@news1.prserv.net>
Source record: 111969

Mike:

Like you, I used to ask that. Then I had a couple of clumsy technicians assigned to me. (Fortunately, not at the same time0.) And, I really believe they were trying, but they could NOT assemble ANY connector properly, even after dozens of tries. One could even mess up screw on Type F. Some people are just not competent with their hands. An illustration in the other direction: How many people can paint like Michelangelo?

--
Crazy George
Remove NO and SPAM from return address
"MIKEHAACK" <mikehaack@aol.com> wrote in message
news:20030722234500.00723.00000338@mb-m25.aol.com...
>
> And whats so wrong about installing the connector the way it was
designed?
>
> I've put on hundreds, and have never had trouble soldering the braid unto
a
> quality connector.
>
> Whats the problem I'm missing here..?
> 73 de Mike, WB9B
>

1876. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 04:12:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1e0c2f$1_1@corp.newsgroups.com>
Source record: 111970

Walter Maxwell wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
>>Nothing magic, like disappearing standing waves,
>>happens at the instant steady-state is achieved.
>
> Standing waves disappear at the instant steady state is reached??????

That's what some say. The energy is supposed to stop moving end to
end and just slosh side to side locally between the lumped constants.
They say that reflected traveling waves disappear when steady-state is
reached. I say such a disappearing act would have to be magic.
--
73, Cecil http://www.qsl.net/w5dxp

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1877. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 04:29:51 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bfl302$s2a$1@slb9.atl.mindspring.net>
Source record: 111971

W7TI:

To do it right you gotta spend a little money and get the right tools.

To do it "right" you gotta buy a great big 200 watt soldering iron and pour the heat to it
for a only a short time. The coax braid is then soldered all around, not just tacked down
with a little surface solder at those four little holes.

Do it but don't skimp on tools, "Just do it right!"

--
Peter K1PO
Indialantic By-the-Sea, FL.

"W7TI" <noway@nohow.com> wrote in message
news:38erhvgsnrmodl5idetg445vu6hilsia73@4ax.com...
> Maybe this has been done before, but it's the first time I've heard of
> this method.
>
> While struggling as usual to attach some PL-259s to some Belden 9913F,
> it occurred to me that the four little holes for soldering the braid
> were not really needed. Instead, I soldered the braid directly to the
> connector at the point where it entered. Picture at:
>
> www.dslextreme.com/users/teeaye/coax.jpg
>
> I soldered it all around the connector, although I suppose only one
> point would be ok.
>
> The braid is exposed so it would need weatherproofing for outside use.
> But all in all, it seems to me to be far superior to trying to solder
> through the little holes. It's much stronger and you can easily see if
> you have a good connection.
>
> Also, only a small-wattage iron is needed. I used a 40-watt Weller,
> which is not hot enough doing it the normal way. There is less metal
> acting as a heat sink.
>
> Another advantage is you can trim the braid much farther back from where
> you strip the center conductor. This helps reduce the chances of a
> stray strand causing a short.
>
> The only drawback I can see would be if the coax were hanging down and
> swinging in the breeze - the solder could develop metal fatigue over

> time. On the other hand, the coax should be strain-relieved anyway,
> else it's just holding on by the four holes and the center conductor.
> Not much better, if at all.
>
> Comments?
>
> --
> 73, Bill W7TI

1878. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 04:33:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1e1109$1_1@corp.newsgroups.com>
Source record: 111972

Jim Kelley wrote:
> Waves cannot just "cease to exist" for
> the very same reason that energy cannot cease to exist.

More bafflegab. An RF wave ceases to exist when it is dissipated in a dummy load. The energy cannot cease to exist and turns to heat but the RF wave, in a perfect dummy load, ceases to exist. Heat is not RF. A light wave incident upon a perfect flat black plane ceases to exist. The light waves that haven't exited the room you are in when you turn off the light cease to exist. Some light waves falling upon plants cease to exist in the process of photosynthesis.

From _Optics_, by Hecht: "Unlike ordinary objects, photons cannot be seen directly; what is known of them comes from observing the results of their being either created or annihilated."

When photons are created, their wave function starts. When photons are annihilated, their wave function ceases to exist. There is no such thing as preservation of photons. You really need to get yourself a better physics book.

EM waves cease to exist all the time but the energy in those waves cannot be destroyed.
--
73, Cecil http://www.qsl.net/w5dxp

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1879. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 04:34:07 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1e114a$1_1@corp.newsgroups.com>
Source record: 111973

Elmer E Ing wrote:
> Ah there is the right way, the wrong way, and the Ham's way.
> Bravo -- continuity is continuity

And an impedance bump is an impedance bump. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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1880. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 04:48:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1e14a8_1@corp.newsgroups.com>
Source record: 111974

Crazy George wrote:
> Manufacturer and model #?
> Or location of one in South Texas?
> Or URL for manufacturer of one?
> Outside a sub-station, of course, which will be the requirement for BPL
> repeaters, which will also have to be bi-directional.

When I worked for Dresser Industries in Houston in the 60's, some
of our SCADA systems sold to power companies operated over power
line carrier systems. As I remember, it operated on RF frequencies
below the AM broadcast band.

A web search for "Power Line Carrier" turned up 650,002 entries
including some for high speed internet access.
--
73, Cecil http://www.qsl.net/w5dxp

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1881. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 05:33:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1e1f28_1@corp.newsgroups.com>
Source record: 111976

Jim Kelley wrote:
> In the case we've been discussing the waves in fact never exist, except
> on paper. This is because, for example, V3 and V4 cancel at the very
> point at which they would begin to propagate. Cancellation precludes
> their existance because they cancel for any time element ...

There's another one of your contradictions. "Cancellation (of two waves)
precludes their existance ..."??? How can two waves cancel if they never
existed? Once again, you are confusing cause and effect. You are asserting
an effect caused by itself. That won't fly.

There is nothing in calculus to prohibit those two wavefronts from existing
for a dt of time. In fact, for 100% wave cancellation to occur, the waves
must necessarily exist for a dt of time. One wave cannot cancel. Cancellation
requires at least two waves. Maxwell's equations contain partial differentials
for dx, dy, dz, and dt.

In the s-parameter equation, b1=s11*a1+s12*a2=0, s11*a1 and s12*a2 obviously
exist. Otherwise, b1 could not be zero due to their cancellation.

In the transmission line voltage equation, Vref1 = Vfwd1(rho) + Vref2(tau),
those terms obviously exist. Vfwd1 is not zero. rho is not zero. So Vref1
could never be zero without 100% wave cancellation of two existing waves.

You seem incapable of conceiving of canceling wavefronts that exist for only
a dt of time. I, OTOH, am completely incapable of conceiving of the cancellation
of two waves that never existed.
--
73, Cecil http://www.qsl.net/w5dxp

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1882. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 05:36:07 UTC
From: dplatt@radagast.org
Message-ID: <vhs7m7jo8upb16@corp.supernews.com>
Source record: 111975

> And whats so wrong about installing the connector the way it was designed?
>
>I've put on hundreds, and have never had trouble soldering the braid unto a
>quality connector.
>
>Whats the problem I'm missing here..?
>73 de Mike, WB9B

I suspect it might be the word "quality", or the absence thereof.

The high-quality silver-plated PL-259s seem to solder easily enough as long as you have a high-enough-wattage iron or gun. A small fixed-wattage, non-temperature-controlled soldering pen probably won't do the job.

The cheap nickel-plated ones can be a real hassle - the solder doesn't wet the nickel at all readily, and one can easily end up with a "cold" solder joint.

I've read recommendations that if you're going to solder a nickel-plated PL-259, you should take a file and rough off the nickel in the area around and in the holes, and on the adapter inside (if present). The brass under the nickel will take the solder somewhat more readily.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

1883. Re: TV antenna-rotor?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 05:40:13 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfl741$fn3v7$1@ID-134747.news.uni-berlin.de>
Source record: 111977

Ghosts live in the land of strong signals and good multipath. Several persons in my area of the world (the southern portion of the northern state of Delaware - the two smallest states in the Union) will point an antenna at Philly and another at Baltimore. They are not troubled by ghosts. Ghosts result from two, or more, signals reaching the receiver close enough together and in sufficient strength to become part of the picture.

--
73 es cul

wb3fup
a Salty Bear

"Roger Halstead" <newsgroups@rogerhalstead.com>
wrote in message
news:htnrhvc9qgrdhev9skiod79l12h20rct2p@4ax.com...
> On Mon, 14 Jul 2003 22:14:10 -0400, "Tarmo
Tammaru"
> <t-tammaru@home.com> wrote:
>
> >Roger,
> >
> >He is talking about having the two antennas
pointed in different directions.
> >Bad news for ghosts.
>
> And here I thought ghosts thrived in that
situation.<:-))
>
> Roger Halstead (K8RI EN73 & ARRL Life Member)
> www.rogerhalstead.com
> N833R World's oldest Debonair? (S# CD-2)
> >
> >Tam/WB2TT
> >
>

1884. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 05:41:31 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307222141.1efa9628@posting.google.com>
Source record: 111978
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.shortwave

It would be very difficult to achieve sufficient input to output
isolation to repeat on frequency so either do time division (lots of
latency) or translate to another band (most likely).

Guess these repeater units would be very vulnerable to any non
linearity that causes I.M. or harmonics from the output to occur at
the input frequency.

The more I think about this, the more convinced that the BPL lobbyists
have excellent P.R. and are first division bull shit merchants but are
totally and utterly clueless when it comes to R.F.

Expect a few systems to be deployed before the money folks from Wall
Street realize that BPL won't work. Trouble is that a few badly
maintained systems could trash the whole of H.F. during the next
sunspot maximum. Reminds me of the pager transmitter on the next hill
to me, wakes up once to twice a day and overloads my 2M equipment.

"WB2JKX" <mycall-N0SPAM@arrl.net> wrote in message
news:<LHbTa.67462$0v4.4498427@bgtnsc04-news.ops.worldnet.att.net>...
> Rob Kemp <robkemp90210@hotmail.com> wrote in message
> news:6114e4af.0307212024.28641436@posting.google.com...
> > Ed,
> >
> > In reply to your question on the technical requirements, (apologies in
> > advance for the verbose response but would like to ensure that the
> > implementation difference between European PLC/PLT and our BPL is
> > understood by everyone).
> >
> > In Europe BPL (PLC/PLT) is connected to the 220V (European voltage) at
> > the transformer that feeds 100~200 homes. Typically backhaul from the
> > transformer is a dedicated data line. European power lines are
> > underground and the emission limits are lower (NB30) but there are
> > still major interference problems. At NB30 emission limits PLC/PLT is
> > good for about 900 feet.
> >
> > Here in the U.S. our power system architecture is different with a
> > transformer for 4~6 homes in the suburbs, in rural areas many homes
> > will have individual transformers as the houses are far apart.
> >
> > BPL is transmitted down (and emitted from) the 11KV medium voltage
> > lines that go to the house transformers. 11KV lines have significant
> > attenuation (and radiation) at HF.
> >

> > The repeater issue has been "swept under carpet" as they are expensive
> > and need a truck roll to install. The BPL lobby's focus has been to
> > persuade the world that every socket magically becomes an Internet
> > connection.
> >
> > For details on a typical BPL repeater check;
> > http://www.amperion.com/products.asp
> >
> > There are no details on specific repeater distances at the Amperion
> > site, just a vague comment about data rates and latency. Latency will
> > cause problems for VoIP and gamers (the ping numbers will be bad).
> >
> > It is clear from the Amperion information that these repeaters are
> > complex as they decode the data. Presume that power is somehow picked
> > off the 11KV line.
> >
> > The source for the 2,000 feet is here;
> > http://www2.arrl.org/news/features/2003/06/01/1/
> > "According to industry sources, data rates of up to 20 MB/s are
> > possible for distances of up to 2,000 feet, and of up to 3 MB/s for
> > distances of up to 4,000 feet."
> >
> > The ARRL comments are for raw data rates under very ideal conditions,
> > actual download speed shared by all customers will be about 35% of the
> > raw data rate. The BPL systems both in Europe and the U.S. have
> > symmetrical upload/download speeds which is puzzling, as would expect
> > users to care more about download speeds.
> >
> > If the FCC raises the emission limits, then the repeater distance will
> > be greater. Suspect if they don't, the BPL operators will still turn
> > up the power anyway and wait for complaints
> >
> > "Ed G." <Spectrumhog@_REMOVE_StarBand.net> wrote in message
> news:<Xns93BE7E5C0161Frog207Junocom@148.78.248.75>...
> > > While I certainly don't want to see BPL implemented, I must question
> > > your statements about the power companies' technical requirements to
> > > deploy BPL to rural customers.
> > >
> > > Can you please provide official sources for the technical information
> > > you posted?
> > >
> > >
> > > Ed WB6SAT
>
> It would seem that the use of repeaters on the HV lines would require the
> power line to be broken into isolated sections (RF-wise) where the repeaters
> are located, with the 60Hz bypassed around the repeater. This can't be good
> for reliable electric service.

1885. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 05:43:45 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfl7al$g5ai4$1@ID-134747.news.uni-berlin.de>
Source record: 111979

Gee, and I bet you tin the conductor and braid
before starting assembly. What a concept, get the
solder in place so minimal heat and time are
required for a good connection. Who's a thunk!

--
73 es cul

wb3fup
a Salty Bear

"MIKEHAACK" <mikehaack@aol.com> wrote in message
news:20030722234500.00723.00000338@mb-m25.aol.com...
>
> And whats so wrong about installing the
connector the way it was designed?
>
> I've put on hundreds, and have never had trouble
soldering the braid unto a
> quality connector.
>
> Whats the problem I'm missing here..?
> 73 de Mike, WB9B
>

1886. Re: Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 06:03:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhs99jda8dia7b@corp.supernews.com>
Source record: 111980

Yeah, you've got me pegged, all right -- tireless defender of ham radio's sacred cows. Perceptive of you. But we can all be thankful we've got you to keep reminding us hams just how ignorant we, worshipping our superstitious lore, are, compared to true professionals like you.

If only we could just come up an impedor for this.

Roy Lewallen, W7EL

W5DXP wrote:
> Dave Shrader wrote:
>
>> Roy, you've been getting blamed for everything lately.
>> Now we can blame you for the new thread ... you started it! <grin>
>
>
> Roy doesn't seem to appreciate me making hamburger out of ham radio's
> sacred cows. :-) I actually enjoy the T-Bones best of all.

1887. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 06:18:09 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0307222218.752a3bda@posting.google.com>
Source record: 111981

Hi all,
I wrote:
> > this a simple, intuitive and maybe completely wrong approach:

Well, it REALLY IS a completely wrong approach. At least it started some discussion.

BR from Ivan

1888. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 07:08:04 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <koXzFiHURjH$EAap@ifwtech.co.uk>
Source record: 111988

Dave Platt wrote:

>>Whats the problem I'm missing here..?
>>73 de Mike, WB9B
>
>I suspect it might be the word "quality", or the absence thereof.
>
Yep - something about "doing it right", as Peter says also. Not just to ape the professionals, but because the "right" way is the one that's most reliable and won't let you down.

A lot of my ham training was in VHF portable contesting, where you and your friends are out on a hill for a weekend with whatever you brought with you... and nothing more. It quickly taught me that a little "quality" in the right places goes a long way toward making the whole ham radio experience much more enjoyable.

In that particular case, a lot of the spoilt weekends were due to connectors, of which there are dozens in a complex station. "Quality" involved assembling connectors properly at home, so they wouldn't fail up there on the hill - and after we learned that lesson, it all became a lot more fun.

But there's something else as well, beyond all the practical reasons: I actually *enjoy* doing ham radio well, with quality.

Perhaps more of us should come out and say that...

Anyhow, back to the PL-259s:

>The high-quality silver-plated PL-259s seem to solder easily enough as
>long as you have a high-enough-wattage iron or gun. A small
>fixed-wattage, non-temperature-controlled soldering pen probably won't
>do the job.
>
That's true, but DON'T BUY A 200W IRON - it's a waste of money!

* Buy a cheap hot-air gun from the DIY store.

* Use it to pre-heat the connector body until your regular little iron can easily melt solder on the connector body (not just a blob in the hole, but flowing easily onto the body).

* Take the hot air away, and quickly solder the connector with your regular iron.

It's quick, easy, low-cost, you get a "free" hot-air gun... and it produces a top-quality job.

I now use this method for all kinds of heavy-duty soldering, with
nothing larger than a Weller TCP iron.

A good point about removing nickel plating first:

>I've read recommendations that if you're going to solder a
>nickel-plated PL-259, you should take a file and rough off the nickel
>in the area around and in the holes, and on the adapter inside (if
>present). The brass under the nickel will take the solder somewhat
>more readily.
>
Inside the holes is the important place to remove the nickel. Ream it
out with a drill, or the pointy end of a triangular file.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1889. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 08:14:37 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307230014.2ec1f54c@posting.google.com>
Source record: 111982

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
> >
> > 1. Two antennas (also called transducers) placed close together
> > actually can be considered a transformer, albeit a very inefficient
> > one.
>
> Humm...By antenna I assume it also means a radiator. This would
> suggest
> that a stagger tuned radiators would fall into the catagory discussed
> above.
> Now I have a problem with that statement, because I very much see it
> as a transformer which is VERY efficient and not as you stated "albiet
> a very inefficient one".
> Can you explain to me how a stagger tuned antenna migrate into
> inefficient radiators?
> Seems to me that Thevenin's theorem would show this as being
> incorrect !
>

Well, two identical antennas spaced a few wavelengths apart can
be considered a transformer, but very inefficient compared to a "real"
transformer with identical primary and secondary turns, with an
appropriate toroid core. This would be because the core material will
increase the magnetic flux density, and will increase the coupling
between the two windings/transducers.

Point is, the farther apart the antennas are, the less efficient
of a "transformer" they will be.

I'm not familiar with stagger tuned antennas, although the name
would suggest that it is tuned for multiple resonances, so that the
antenna will be broadband.

Slick

1890. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 09:00:24 UTC
From: 4nec2@gmx.net
Message-ID: <ee90361b.0307230100.1ba3bf6e@posting.google.com>
Source record: 111983

> I have no experience with anything other than AO which I have used
> for many years. I purchased A.O. because it had the ability of
> analysing any given radiator over different quality grounds and also
> for it's ability to change the geometry of a radiator so that gain,
> swr, F/B e.t.c can be optimised depending on your requirement.

So can 4nec2. It's optimizer was based on the same principles as AO.
Furthermore it can (almost) automatically convert *.ant files to 4nec2
input files. (just specify your *.ant file as a 4nec2 input file).
Besides that 4nec2 is based on the nec-2 core whereas AO was based on
the mininec core, especially important when modeling 'close' to
ground.

> It is also a great learning tool because you can see where major changes
> occur while the program runs that gives you insights as to
> what further changes you can present to the program and follow the
> computors progress as it changes geometries e.t.c.

I would suggest to take a look at the 4nec2 'evaluate' option. With
this you can stepwise change one or more antenna, ground, load or
other dimensions and see what effect they have on far-field pattern or
other antenna characteristics.

> I have just purchaes the A.O. Pro program which cost $300.
> This program is the same as the std A.O. program except it has many
> more pulses available e.t.c.

4nec2 max is 5000 segments for XP systems, max 11000 segments for
none-XP systems

> As far as I am aware the A.O. program can achieve what most of the
> other programs can achieve whereas most other programs cannot achieve
> what A.O. can achieve which really tells the story.

I would be very glad to know what you think could be added to 4nec2 to
make it even better.

Furthemore it might be usefull to know the following is also possible:
- Switchable genetic based or traditional hil-climbing optimizer
- 2D, 3D graphical- and chart- display of near-field data
- Optional surface wave-data included in far-field.
- Sophisticated Smith-chart display when using frequency sweep.
- Interface to VOACAP propagation prediction freeware
- CAD alike geometry editor for starting modeler (however not usable
when optization is required, see help-file)
- Nec-2 aware or default notepad editor also usable.

One drawback might be the lack of a very comprehensive getting started and/or user manual, but you can always contact me in case of problems.

Please don't interpret this as an advertisement. Just as an attempt to share some private-made software with others interested in antenna modeling and/or propagation prediction.

Arie.

1891. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 09:08:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vhsk4n5lamhs29@corp.supernews.com>
Source record: 111984

I hope you'll pardon me for amplifying this a little.

If you put X watts into the primary of a transformer and extract Y watts from the secondary, the efficiency is Y/X by definition.

If you put X watts into one antenna and extract Y watts from an antenna coupled to it, and measure the efficiency of the "transformer" the same way as you did the conventional transformer, you'll find it has lousy efficiency. Why? Because a goodly fraction of the power you applied to the "primary" antenna never gets to the "secondary" antenna because it's radiated instead. As far as the "secondary" is concerned, it might as well have been converted to heat.

If you look at the impedance of the "primary" antenna, you'll find an excess of resistance -- just enough, in fact, to account for the "lost" (radiated) power.

This isn't a statement about how well coupled antennas function as antennas, whose purpose is to radiate after all. It's a statement about how well they function as a transformer. Poorly.

Roy Lewallen, W7EL

Dr. Slick wrote:
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
>
>>> 1. Two antennas (also called transducers) placed close together
>>>actually can be considered a transformer, albeit a very inefficient
>>>one.
>>
>>Humm...By antenna I assume it also means a radiator. This would
>>suggest
>>that a stagger tuned radiators would fall into the catagory discussed
>>above.
>>Now I have a problem with that statement, because I very much see it
>>as a transformer which is VERY efficient and not as you stated "albiet
>>a very inefficient one".
>> Can you explain to me how a stagger tuned antenna migrate into
>>inefficient radiators?
>> Seems to me that Thevenin's theorem would show this as being
>>incorrect !
>>
>
>
>

> Well, two identical antennas spaced a few wavelengths apart can
> be considered a transformer, but very inefficient compared to a "real"
> transformer with identical primary and secondary turns, with an
> appropriate toroid core. This would be because the core material will
> increase the magnetic flux density, and will increase the coupling
> between the two windings/transducers.
>
> Point is, the farther apart the antennas are, the less efficient
> of a "transformer" they will be.
>
> I'm not familiar with stagger tuned antennas, although the name
> would suggest that it is tuned for multiple resonances, so that the
> antenna will be broadband.
>
>
>
> Slick

1892. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 09:44:28 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <3f1d0781_1@newsfeed>
Source record: 111986

Your "simple requests" are broken-record-style invitations for argument, as
well as out-and-out avoidances of simple answers. Not one of my WDYMs to
you were answered.

73, Dave, N3HE

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1d4dfd$1_1@corp.newsgroups.com...
> David J. Windisch wrote:
> > Cecil, you'd argue with a cop or a judge that speed limits are
indeterminate
> > if the sign didn't have units posted.
> >
> > You wrote: Please state your conclusions in concepts that people can
> > understand.
>
> A simple request for understandable information is an argument?
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1893. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 09:44:45 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307230144.50a70919@posting.google.com>
Source record: 111985

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhrnmu43m03lad@corp.supernews.com>...
>
> Here's the problem with that transformer concept again. A field is not a
> voltage. So you can't measure it with a voltmeter. You can convert the
> fields to voltages and currents by use of a transducer -- an antenna --
> then you can measure the voltage and current from the antenna with
> ordinary meters.
>

I agree with you that the field is first converted by the antenna
before it can be measured.

But by definition, the E field is definitely related to voltage
potential.

Hugh Skillings' Fund. of Electric Waves: "Voltage from point 1 to
point 2 is the line integral of the electric field along any path from
point 1 to point 2. This is the amount by which point 1 is at a
higher potential than point 2."

Say PD = E^2/Z0 = H^2 * Z0. If you say the Power Density =
V^2/(R*m^2), and the R=Zo, then these will cancel, giving you E =
V/meter, which are the correct units. So here we are equating the
impedance of free space will a resistive impedance or load.

Roy, what do you think 1uV/meter really means in terms of how you
measure it? I mean, under what conditions must you have to measure
this 1uV/meter?

I'm starting to think that what this really means, is that an
exploring particle with a unit positive charge, when placed in a
electric field of 1uV/meter, will experience a change of voltage
potential of +1uV when it is moved directly towards an isotropic
radiator ("the potential of a point in space is the work required to
move to that point a unit positive charge, starting an infinite
distance away...potential increases as one positive charge is moved
closer to another positive charge" - Skilling).

> Good thing, too. Otherwise we'd all get electrocuted by the Earth's 100
> volt/meter field. (And that's on a day with no storm nearby.)
>

But that's a static field, so we don't have to worry about
touching metallic objects that aren't grounded.

> >
> > Perhaps the far-field measurements would require too sensitive a

> > field-strength meter? Or maybe it's just more convenient to measure
> > up close.
>
> No, it's far field measurements that are more common. One problem with
> making near field measurements is that the near field varies all over
> the map with the type of antenna and the exact spot where you're making
> the measurement. And it's of no importance at all to anything very far
> away at all. I've only seen near field probing done to locate the source
> of a problem emission. Compliance measurements are usually done with
> far-field techniques, in or at least at the fringes of the far field.
> The "within the near field" measurements I'm referring to are HF
> measurements done at distances that aren't firmly in the far field. (The
> far field boundary depends on the nature of the radiating structure, and
> is nebulous anyway.) The FCC addresses this issue for Part 15 somewhat
> in section 15.31(f).
>
> Roy Lewallen, W7EL

I was going to ask you to define "far-field", and i thought maybe
people defined this as a number of wave-legnths away, but if it's
nebulous like a lot of RF topics, then i would certainly understand.

Slick

1894. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 09:52:23 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307230152.2df8a6cb@posting.google.com>
Source record: 111987

Hi,

I agree with the other poster who said most of the mechanical
strength is from the outer vinyl being screwed into the PL-259.

This method looks a bit too weak for me to ever try.

Get a Weller GUN. And make sure the tip is screwed in TIGHT!

Slick

1895. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 10:46:51 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <7ck04iCbemH$EArS@ifwtech.co.uk>
Source record: 111990

Dr. Slick wrote:
>
>
> I was going to ask you to define "far-field", and i thought maybe
>people defined this as a number of wave-legnths away, but if it's
>nebulous like a lot of RF topics, then i would certainly understand.
>
>
It's not nebulous at all. There is no boundary fence in the ether with a sign saying "Here endeth the near field", but you *can* draw your own lines.

That is not at all unusual in physics and engineering, nor is it limited to RF problems.

In the idealized far field, the E and H fields are orthogonal, in phase and have a ratio of 377 ohms. At any finite distance, you know that you're not in the idealized far field, but until you come quite close to the antenna you can't measure the difference in any way, so ideal far-field conditions are a very good assumption. Coming closer to the antenna, you enter the transition zone where you start to see measurable and calculable deviations, but you can set an engineering criterion to say you're still close enough to far-field conditions (a 1 degree E-H phase difference is one example, but people can and do set different criteria for different purposes).

Equally, you can begin in the near field and work your way outward. You'll notice some strange behaviour of the E and H fields very close-in (all of which turns out to be completely predictable if you try hard enough) but farther out they get their act together and settle into their correct far-field relationship.

The lack of ready-drawn boundaries doesn't make any of those ideas "nebulous". They are exactly as clear - or exactly as nebulous - as the way you choose to think about them. There's still the same rock-solid physics underneath.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1896. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 11:38:12 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <DsuTa.113701$GL4.29497@rwcrnsc53>
Source record: 111989

It seems we never have the time, money, tools or inclination to do it
right the first time; but, we always do it right the second time.

Unfortunately the second time is generally most inconvenient!

Deacon Dave, W1MCE

Peter Brackett wrote:

> W7TI:
>
> To do it right you gotta spend a little money and get the right tools.
>
> To do it "right" you gotta buy a great big 200 watt soldering iron and pour
> the heat to it
> for a only a short time. The coax braid is then soldered all around, not
> just tacked down
> with a little surface solder at those four little holes.
>
> Do it but don't skimp on tools, "Just do it right!"
>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.
>
>
> "W7TI" <noway@nohow.com> wrote in message
> news:38erhvgsnrmodl5idetg445vu6hilsia73@4ax.com...
>
>>Maybe this has been done before, but it's the first time I've heard of
>>this method.
>>
>>While struggling as usual to attach some PL-259s to some Belden 9913F,
>>it occurred to me that the four little holes for soldering the braid
>>were not really needed. Instead, I soldered the braid directly to the
>>connector at the point where it entered. Picture at:
>>
>>www.dslextreme.com/users/teeaye/coax.jpg
>>
>>I soldered it all around the connector, although I suppose only one
>>point would be ok.
>>
>>The braid is exposed so it would need weatherproofing for outside use.
>>But all in all, it seems to me to be far superior to trying to solder
>>through the little holes. It's much stronger and you can easily see if

>>you have a good connection.
>>
>>Also, only a small-wattage iron is needed. I used a 40-watt Weller,
>>which is not hot enough doing it the normal way. There is less metal
>>acting as a heat sink.
>>
>>Another advantage is you can trim the braid much farther back from where
>>you strip the center conductor. This helps reduce the chances of a
>>stray strand causing a short.
>>
>>The only drawback I can see would be if the coax were hanging down and
>>swinging in the breeze - the solder could develop metal fatigue over
>>time. On the other hand, the coax should be strain-relieved anyway,
>>else it's just holding on by the four holes and the center conductor.
>>Not much better, if at all.
>>
>>Comments?
>>
>>--
>>73, Bill W7TI
>
>
>

1897. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 12:29:16 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030723082916.02382.00000390@mb-m21.aol.com>
Source record: 111991

Arie 4NEC2 wrote:
>
>I would be very glad to know what you think could be added to 4nec2 to
>make it even better.

Thanks again for fine software Arie.
Things I would like to see is incorporation of terrain simulation with antenna design. Few zones of different "ground quality" (radials, sand, salt water) with linear and/or circular boundaries plus sloping terrain (contour profile). Example would be four square array on the sloping hill of sand some distance from the ocean. Verticals are very sensitive to the ground quality and terrain slopes/profile and this feature would be a great tool in quest for maximizing the performance of array by using the terrain features (enhanced F/B).
K6STI has Terrain Analyzer (?) I have never tried it, but I understand that he uses free space pattern of antenna and then applies the geometry and quality of ground. I can see that more true representation of antenna's performance is to tweak the design with real ground/terrain situation. Vertical antennas, where ground participation makes significant difference in the tuning of array, would be more closely modeled by using real ground rather than free space (who's got it anyway?) and then doing optimization with given ground/terrain situation. Enough challenge? I don't know of any software that would do optimization with participation of ground/terrain.
Thanks again!

Yuri, K3BU

1898. Re: How much is radiated?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 13:26:41 UTC
From: Ken <cprstn54zz@att.net>
Message-ID: <tp2thvo37np27j9i35trimcnshln4vb704@4ax.com>
Source record: 111993

On Sun, 20 Jul 2003 14:43:16 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>Put the forward/reflected power meter on the output of the tuner. Then
>calculate the losses in the feedline.

I am not sure how to do this test.

The tuner has a 4:1 balun built in. Losses could certainly be in the
balun.

The coax terminators on the tuner do not use the balun. A separate
SWR meter will have coax terminators, requiring the use of a
standalone 4:1 balun after the meter, into the twinlead.

This will test tuner losses, but not losses in the balun.

I guess my follow-up question is, How do I test for forward/reflected
power in a twinlead feedline?

I have an RF probe; can that be used somehow?

Ken KC2JDY

Ken
(to reply via email
remove "zz" from address)

1899. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 13:32:14 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307230532.5d1993bc@posting.google.com>
Source record: 111994

Arie,
I remember when you first spoke of your program on this newsgroup
where I commended you for your sharing attitude. My computor was down
at that time but I do remember the many comments given , all of which
were good.
I really should have noted the facts down as it appears to me that
your program
offers much more than any program on the market and is a formidable
new height
that competing programmers will have to overcome.
Rest assured that I will be taking a closer look at your work since I
believe that the optimisation tool is a prime requisite of any antenna
evaluation program.
Best Regards
Art

4nec2@gmx.net wrote in message news:<ee90361b.0307230100.1ba3bf6e@posting.google.com>...
> > I have no experience with anything other than AO which I have used
> > for many years. I purchased A.O. because it had the ability of
> > analysing any given radiator over different quality grounds and also
> > for it's ability to change the geometry of a radiator so that gain,
> > swr, F/B e.t.c can be optimised depending on your requirement.
>
> So can 4nec2. It's optimizer was based on the same principles as AO.
> Furthermore it can (almost) automatically convert *.ant files to 4nec2
> input files. (just specify your *.ant file as a 4nec2 input file).
> Besides that 4nec2 is based on the nec-2 core whereas AO was based on
> the mininec core, especially important when modeling 'close' to
> ground.
>
> > It is also a great learning tool because you can see where major changes
> > occur while the program runs that gives you insights as to
> > what further changes you can present to the program and follow the
> > computors progress as it changes geometries e.t.c.
>
> I would suggest to take a look at the 4nec2 'evaluate' option. With
> this you can stepwise change one or more antenna, ground, load or
> other dimensions and see what effect they have on far-field pattern or
> other antenna characteristics.
>
> > I have just purchaes the A.O. Pro program which cost $300.
> > This program is the same as the std A.O. program except it has many
> > more pulses available e.t.c.
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> 4nec2 max is 5000 segments for XP systems, max 11000 segments for
> none-XP systems
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> > other programs can achieve whereas most other programs cannot achieve
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> I would be very glad to know what you think could be added to 4nec2 to
> make it even better.
>
> Furthemore it might be usefull to know the following is also possible:
> - Switchable genetic based or traditional hil-climbing optimizer
> - 2D, 3D graphical- and chart- display of near-field data
> - Optional surface wave-data included in far-field.
> - Sophisticated Smith-chart display when using frequency sweep.
> - Interface to VOACAP propagation prediction freeware
> - CAD alike geometry editor for starting modeler (however not usable
> when optization is required, see help-file)
> - Nec-2 aware or default notepad editor also usable.
>
> One drawback might be the lack of a very comprehensive getting started
> and/or user manual, but you can always contact me in case of problems.
>
> Please don't interpret this as an advertisement. Just as an attempt to
> share some private-made software with others interested in antenna
> modeling and/or propagation prediction.
>
> Arie.

1900. Re: Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 13:35:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1e903e$1_7@corp.newsgroups.com>
Source record: 111995

Roy Lewallen wrote:
> Yeah, you've got me pegged, all right -- tireless defender of ham
> radio's sacred cows.

You forgot the smiley face.

>> Roy doesn't seem to appreciate me making hamburger out of ham radio's
>> sacred cows. :-) I actually enjoy the T-Bones best of all.

I didn't forget the smiley face, an indication of a joke. Remember jokes?
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1901. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 13:39:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1e910d$1_7@corp.newsgroups.com>
Source record: 111996

David J. Windisch wrote:
> Your "simple requests" are broken-record-style invitations for argument, as
> well as out-and-out avoidances of simple answers. Not one of my WDYMs to
> you were answered.

What's a WDYM?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1902. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 14:00:37 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307230600.1cf7706f@posting.google.com>
Source record: 111997

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhsk4n5lamhs29@corp.supernews.com>...
> I hope you'll pardon me for amplifying this a little.
>
> If you put X watts into the primary of a transformer and extract Y watts
> from the secondary, the efficiency is Y/X by definition.

Yes Roy. The specifics of what is being discussed is all important
when looking at answers as well as what terms are being used to
measure 'efficiency' and to what ends.
As you are surely awawe I too look at antennas as transformers or
coupled circuits and thus the primary contributes very much in its own
way as far as radiation as does the secondary. Thus 'efficiency' as a
criteria of 'value'
is all important when using it as a term since as you point out it is
a ratio of two terms both of which have to be made very clear for the
term efficiency to be made clear
Thus in stagger tuning it is important to define your requirements in
terms of bandwidth (dual frequency radiation) or max gain (dual
radiators on the same frequency),the above bearing little difference
to old time receiver designwith multiple I.F. cans. It is in this
areana that I view stagger tuning or coupling
as being efficient in charactor. If I am incorrect in the above
assumptions I would welcome any correction from those well versed
inthe field.
Best regards
Art

>
> If you put X watts into one antenna and extract Y watts from an antenna
> coupled to it, and measure the efficiency of the "transformer" the same
> way as you did the conventional transformer, you'll find it has lousy
> efficiency. Why? Because a goodly fraction of the power you applied to
> the "primary" antenna never gets to the "secondary" antenna because it's
> radiated instead. As far as the "secondary" is concerned, it might as
> well have been converted to heat.
>
> If you look at the impedance of the "primary" antenna, you'll find an
> excess of resistance -- just enough, in fact, to account for the "lost"
> (radiated) power.
>
> This isn't a statement about how well coupled antennas function as
> antennas, whose purpose is to radiate after all. It's a statement about
> how well they function as a transformer. Poorly.
>
> Roy Lewallen, W7EL

>
> Dr. Slick wrote:
> > aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
> >
> >>> 1. Two antennas (also called transducers) placed close together
> >>>actually can be considered a transformer, albeit a very inefficient
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> >>
> >>Humm...By antenna I assume it also means a radiator. This would
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> >>that a stagger tuned radiators would fall into the catagory discussed
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> >> Can you explain to me how a stagger tuned antenna migrate into
> >>inefficient radiators?
> >> Seems to me that Thevenin's theorem would show this as being
> >>incorrect !
> >>
> >>
> >>
> >>
> > Well, two identical antennas spaced a few wavelengths apart can
> > be considered a transformer, but very inefficient compared to a "real"
> > transformer with identical primary and secondary turns, with an
> > appropriate toroid core. This would be because the core material will
> > increase the magnetic flux density, and will increase the coupling
> > between the two windings/transducers.
> >
> > Point is, the farther apart the antennas are, the less efficient
> > of a "transformer" they will be.
> >
> > I'm not familiar with stagger tuned antennas, although the name
> > would suggest that it is tuned for multiple resonances, so that the
> > antenna will be broadband.
> >
> >
> >
> > Slick

1903. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 14:37:54 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030723103754.01143.00000665@mb-m22.aol.com>
Source record: 111998

>What's a WDYM?
>--
>73, Cecil http://www.qsl.net/w5dxp
>
>

WhattaDuYuMeeen - even I figured that one out without SWR, infrared and optics
:-)

BUm

1904. 4NEC2 features wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 14:56:10 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030723105610.01178.00000464@mb-m22.aol.com>
Source record: 111999

Arie,
One more thing comes to mind, it would be desirable to be able to use insulated wires in models. Typically house electrical insulated wire has about 5% shortening coefficient. I think it would suffice to enter the shortening coefficient (can be obtained by measurement). I believe NEC4 can accomodate that and could serve as an example how to do it.
Also different material for elements within antenna, like copper (insulated) wire quad and aluminum Yagi elements.

That's it besides transducer for the brain to "see" the design in my head and optimize/model it in 3D :-)

Yuri, K3BU

me wrote before:

Arie 4NEC2 wrote:
>
>I would be very glad to know what you think could be added to 4nec2 to
>make it even better.

Thanks again for fine software Arie.
Things I would like to see is incorporation of terrain simulation with antenna design. Few zones of different "ground quality" (radials, sand, salt water) with linear and/or circular boundaries plus sloping terrain (contour profile). Example would be four square array on the sloping hill of sand some distance from the ocean. Verticals are very sensitive to the ground quality and terrain slopes/profile and this feature would be a great tool in quest for maximizing the performance of array by using the terrain features (enhanced F/B).
K6STI has Terrain Analyzer (?) I have never tried it, but I understand that he uses free space pattern of antenna and then applies the geometry and quality of ground. I can see that more true representation of antenna's performance is to tweak the design with real ground/terrain situation. Vertical antennas, where ground participation makes significant difference in the tuning of array, would be more closely modeled by using real ground rather than free space (who's got it anyway?) and then doing optimization with given ground/terrain situation. Enough challenge? I don't know of any software that would do optimization with participation of ground/terrain.
Thanks again!

Yuri, K3BU

1905. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 15:05:56 UTC
From: richardharrison@webtv.net
Message-ID: <4061-3F1EA454-23@storefull-2318.public.lawson.webtv.net>
Source record: 112002

Nic Santeen wrote:
"Therefore, I was saying that I suspect the superposition of two different EM radiations coming out from a dipole."

"Does this mean that a dipole radiates two separate twin EM signals, 90 degrees out of phase?"

The statements are from two different postings. Superposition says simultaneous voltages in a network cause a current which is the same as if the voltages acted individually. This is not rigorous, but it`s the gist.

A dipole gets its name from two (di) poles. However, current flows from one element into the feedline and out of the feedline into the other element. This makes current in the two elements in the same direction, if the dipole is not too long. The dipole works like a continuous rod with the radio`s resistance in the middle.

Point is, a dipole is a single radiator / receptor of radio waves.

Two fields are emitted and captured when a radio wave is radiated and received. The two fields are merely components, electric and magnetic, of only one wave (EM radiation). Radiation requires both components.

For the foregoing reasons, it is wrong to say a single radio frequency has anything to do with "two different EM radiations coming out from a dipole".

As for "twin EM signals, 90 degrees out of phase", the right-angle relationship is spatial, in the plane of the wavefront, and it is not between twin signals. It is between the lines of the E and M fields.

Best regards, Richard Harrison, KB5WZI

1906. no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 15:07:14 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030723110714.28226.00000487@mb-m24.aol.com>
Source record: 112000

BTW, looks like my message to prevent spam in my return address works two ways: one it reduced automated spam, two - there are two "noSaddams" dead as a door nail. Another egg in the face of the bitching DummycRATS! I hope they soon get/confirm the Big Papa Sodumb deadsky soon too.

Bada noSaddam BUm BUm

(My antennas sleep better :-)

1907. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 15:11:20 UTC
From: Joel Dorfan <bdorfan@fred.icon.co.za>
Message-ID: <3f1ea5d3$0$226@hades.is.co.za>
Source record: 112001

Thanks for all of the useful input.

Art where did you purchase your AO-Pro?

Joel

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
news:85ed38d.0307230532.5d1993bc@posting.google.com...
> Arie,
> I remember when you first spoke of your program on this newsgroup
> where I commended you for your sharing attitude. My computor was down
> at that time but I do remember the many comments given , all of which
> were good.
> I really should have noted the facts down as it appears to me that
> your program
> offers much more than any program on the market and is a formidable
> new height
> that competing programmers will have to overcome.
> Rest assured that I will be taking a closer look at your work since I
> believe that the optimisation tool is a prime requisite of any antenna
> evaluation program.
> Best Regards
> Art
>
>
>
>
>
>
>
>
> 4nec2@gmx.net wrote in message
news:<ee90361b.0307230100.1ba3bf6e@posting.google.com>...
> > > I have no experience with anything other than AO which I have used
> > > for many years. I purchased A.O. because it had the ability of
> > > analysing any given radiator over different quality grounds and also
> > > for it's ability to change the geometry of a radiator so that gain,
> > > swr, F/B e.t.c can be optimised depending on your requirement.
> >
> > So can 4nec2. It's optimizer was based on the same principles as AO.
> > Furthermore it can (almost) automatically convert *.ant files to 4nec2
> > input files. (just specify your *.ant file as a 4nec2 input file).
> > Besides that 4nec2 is based on the nec-2 core whereas AO was based on
> > the mininec core, especially important when modeling 'close' to
> > ground.

> >
> > > It is also a great learning tool because you can see where major
changes
> > > occur while the program runs that gives you insights as to
> > > what further changes you can present to the program and follow the
> > > computors progress as it changes geometries e.t.c.
> >
> > I would suggest to take a look at the 4nec2 'evaluate' option. With
> > this you can stepwise change one or more antenna, ground, load or
> > other dimensions and see what effect they have on far-field pattern or
> > other antenna characteristics.
> >
> > > I have just purchaes the A.O. Pro program which cost $300.
> > > This program is the same as the std A.O. program except it has many
> > > more pulses available e.t.c.
> >
> > 4nec2 max is 5000 segments for XP systems, max 11000 segments for
> > none-XP systems
> >
> > > As far as I am aware the A.O. program can achieve what most of the
> > > other programs can achieve whereas most other programs cannot achieve
> > > what A.O. can achieve which really tells the story.
> >
> > I would be very glad to know what you think could be added to 4nec2 to
> > make it even better.
> >
> > Furthemore it might be usefull to know the following is also possible:
> > - Switchable genetic based or traditional hil-climbing optimizer
> > - 2D, 3D graphical- and chart- display of near-field data
> > - Optional surface wave-data included in far-field.
> > - Sophisticated Smith-chart display when using frequency sweep.
> > - Interface to VOACAP propagation prediction freeware
> > - CAD alike geometry editor for starting modeler (however not usable
> > when optization is required, see help-file)
> > - Nec-2 aware or default notepad editor also usable.
> >
> > One drawback might be the lack of a very comprehensive getting started
> > and/or user manual, but you can always contact me in case of problems.
> >
> > Please don't interpret this as an advertisement. Just as an attempt to
> > share some private-made software with others interested in antenna
> > modeling and/or propagation prediction.
> >
> > Arie.

1908. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 15:42:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1eadda$1_2@corp.newsgroups.com>
Source record: 112003

Richard Harrison wrote:
> For the foregoing reasons, it is wrong to say a single radio frequency
> has anything to do with "two different EM radiations coming out from a
> dipole".

Richard, I think maybe he was referring to the MOM method of dividing a wire up into 'n' segments and assuming each segment is a small individual radiator. The radiation from each small radiator is vectorially summed with the radiation from all the other small radiators. Close to the radiators, the E and H fields can sum to being out of phase.

If you change his "two different EM radiations" to "N different EM radiations", then what he is saying might be more understandable.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1909. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 15:50:14 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bfmadu$mq8$1@news.service.uci.edu>
Source record: 112004

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1e1f28_1@corp.newsgroups.com...
> There's another one of your contradictions. "Cancellation (of two waves)
> precludes their existance ..."??? How can two waves cancel if they never
> existed? Once again, you are confusing cause and effect. You are asserting
> an effect caused by itself. That won't fly.

:-) Sorry, Cecil. It's a fact.

>Cancellation
> requires at least two waves.

:-) Cancellation requires zero waves You can't have it both ways..

> Maxwell's equations contain partial differentials
> for dx, dy, dz, and dt.

Yes they do, and for any set of finite values of those variables for two superposed functions of equal amplitude an opposite phase, the solution is zero. You can write the functions for the two waves and prove they cannot exist.

> You seem incapable of conceiving of canceling wavefronts that exist for
only
> a dt of time.

Since the functions cancel during that dt of time as well as any other length of time, you're right.
.
> I, OTOH, am completely incapable of conceiving of the cancellation
> of two waves that never existed.

Not my problem.

73, ac6xg

1910. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 15:59:21 UTC
From: see sea oh ecks at you aitch see dot comm <spammers@bugger.off.invalid>
Message-ID: <bfmbcp$91u$1@gabriel.uhc.com>
Source record: 112005

Crazy George <munschNO@attglobal.net.spam> wrote:
> Mike:

> Like you, I used to ask that. Then I had a couple of clumsy technicians
> assigned to me. (Fortunately, not at the same time0.) And, I really
> believe they were trying, but they could NOT assemble ANY connector
> properly, even after dozens of tries. One could even mess up screw on Type
> F. Some people are just not competent with their hands. An illustration in
> the other direction: How many people can paint like Michelangelo?

True - but then we don't make redecorating our livelihood...
--
Chris Cox, N0UK/G4JEC NIC Handle: CC345
UnitedHealthGroup, Inc., MN10-W116, UNIX Services & Consulting
6300 Olson Memorial Highway, Golden Valley, MN 55427
email: ccox@uhc.com (work) chrisc@chris.org (home)

1911. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 16:09:39 UTC
From: jder8745@aol.com
Message-ID: <20030723120939.18302.00000275@mb-m15.aol.com>
Source record: 112006

I use the holes because I think it makes a better connection especially if the outer cover is properly "screwed" into the connector.

I found an old 100-W soldering iron, not gun, at a yard sale for 50 cents. I machined (filed) the tip so that it was no longer pointed but cylindrical so that the tip would just enter one of the four holes.

I hold the hot tip in the holes until the solder flows and "tins" the braid and the connector.

If needed I can use some non corrosive flux to make me think I did a better job.

73 de Jack, K9CUN

1912. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 16:13:22 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <G7Wcnbp1E9a1KYOiXTWJjQ@comcast.com>
Source record: 112007

You guys might want to try crimp style alternatives to the PL259. I have used them with no problems. They might actually have an advantage when connecting to coax that uses aluminum fail and not much braid.

Tam/WB2TT
"W7TI" <noway@nohow.com> wrote in message
news:38erhvgsnrmodl5idetg445vu6hilsia73@4ax.com...
> Maybe this has been done before, but it's the first time I've heard of
> this method.
>
> While struggling as usual to attach some PL-259s to some Belden 9913F,
> it occurred to me that the four little holes for soldering the braid
> were not really needed. Instead, I soldered the braid directly to the
> connector at the point where it entered. Picture at:
>
> www.dslextreme.com/users/teeaye/coax.jpg
>
> I soldered it all around the connector, although I suppose only one
> point would be ok.
>
> The braid is exposed so it would need weatherproofing for outside use.
> But all in all, it seems to me to be far superior to trying to solder
> through the little holes. It's much stronger and you can easily see if
> you have a good connection.
>
> Also, only a small-wattage iron is needed. I used a 40-watt Weller,
> which is not hot enough doing it the normal way. There is less metal
> acting as a heat sink.
>
> Another advantage is you can trim the braid much farther back from where
> you strip the center conductor. This helps reduce the chances of a
> stray strand causing a short.
>
> The only drawback I can see would be if the coax were hanging down and
> swinging in the breeze - the solder could develop metal fatigue over
> time. On the other hand, the coax should be strain-relieved anyway,
> else it's just holding on by the four holes and the center conductor.
> Not much better, if at all.
>
> Comments?
>
> --
> 73, Bill W7TI

1913. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 16:28:56 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <ehwt3zAIfrH$EAcq@ifwtech.co.uk>
Source record: 111885

see sea oh ecks at you aitch see dot comm wrote:
>Crazy George <munschNO@attglobal.net.spam> wrote:
>> Mike:
>
>> Like you, I used to ask that. Then I had a couple of clumsy technicians
>> assigned to me. (Fortunately, not at the same time0.) And, I really
>> believe they were trying, but they could NOT assemble ANY connector
>> properly, even after dozens of tries. One could even mess up screw on Type
>> F. Some people are just not competent with their hands. An illustration in
>> the other direction: How many people can paint like Michelangelo?
>
>True - but then we don't make redecorating our livelihood...

See, I told you that hot air gun would be useful.

If he'd used one of those to strip the old paint off properly first,
they wouldn't be having to restore that Sistine Chapel after only a few
hundred years...

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1914. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 16:43:24 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnbhtepc.1cdq.bit-bucket@localhost.config.com>
Source record: 112008

On Wed, 23 Jul 2003 05:36:07 -0000, Dave Platt hath writ:
>
> I've read recommendations that if you're going to solder a
> nickel-plated PL-259, you should take a file and rough off the nickel
> in the area around and in the holes, and on the adapter inside (if
> present). The brass under the nickel will take the solder somewhat
> more readily.

Yep. I use a half-round to 'grind' the rims of the holes down to base metal before assy. Then, using a WAY HOT, HIGH WATT iron -- not a gun -- I get onto and off of each hole with solder as quickly as possible -- making sure I `fill` each hole completely.

But, as another poster mentioned: A well-done PL-259 install always makes for a Very Difficult reclamation. HI!HI!

73
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

1915. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 16:45:45 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f1ebb4b@shknews01>
Source record: 112009

> As for "twin EM signals, 90 degrees out of phase", the right-angle
> relationship is spatial, in the plane of the wavefront, and it is not
> between twin signals. It is between the lines of the E and M fields.

It appears that I am having difficulties explaining this
"out of phase" business. Let me try once more:

Take a snapshot of the dipole when the charges are crowded at
the ends of the dipole: all negative charges are at one end and
all positive charges are at the other end. At this very moment,
in the proximity of the antenna there is a maximum electric field
with vectors oriented from the "positive" half of the dipole to the
"negative" half. This electric field has just reached its peak. But
in the same time there is close to zero flow of charges in the
antenna, implying that the magnetic field is close to zero.

Indeed, the magnetic field is perpendicular to the electric field;
however, it is zero exactly when the electric field is maximal.
This is called a "90 degree out of (time-)phase".

However - in theory - an accelerated point of charge creates
an EM front with an electric field and a magnetic field in
(time-)phase, i.e. they peak and die together, perpendicular
on each other. Moreover, in free space a varying electric field
generates a magnetic field in (time-)phase with the originating
electric field (without the need of any charge).

So, the problem is that the dipole generates two fields (E&M)
out of (time-)phase; whereas EM propagation in free space
implies two fields in phase. The "contradiction" can not be more
clear than this.

In order to explain this wonder, I was suggesting the following
scenario:

The dipole give us these two ortogonal fields, E1 and M1 : an electric
field and a magnetic field out of time-phase. E1 is a time varying electric
field, hence it creates its own companion - say - M2 which is a magnetic
field in time-phase! with E1. In the same time, M1 is a time-varying
magnetic field, hence it creates its own companion - say - E2 which
is an electric field in time-phase with M1.

Doing the arithmetic, we conclude that we have four fields altogether,
which represent two separate EM emissions: E1&M2 is one emission,
and E2&M1 is the other one. These two emission are obviously out
of time-phase(they inherited from their originators), i.e. when
[E1 and M2] both peak, [E2 and M1] both die. This is like saying that

the two EM radiations are 90 degrees out of time-phase.

From here on, I do not know how to continue. One way may be that these two EM radiations - as any behaving waves - sum up vectorially, and lead to a unique EM radiation with an amplitude a bit higher that the initial ones. The problem I am having with this explanation is that the wavelength is also a bit shorter - which does not sound right.

So, I am looking for a better continuation - or for a better explanation of the following : how comes that we start with two out of time-phase E and M fields and end up with an EM propagation, i.e. with E and M in time phase ?

Cordially,

Nic.

1916. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 16:46:47 UTC
From: richardharrison@webtv.net
Message-ID: <20425-3F1EBBF7-43@storefull-2314.public.lawson.webtv.net>
Source record: 112010

Art Unwin wrote:
"It is in this area that I view stagger tuning or coupling to be
efficient in character."

This is a struggle against nature. Like the double-tuned stagger frequency transformer, the wider the frequency separation, the less the coupling.

Another item promotes coupling in a transformer. It is placement of the coils so they share flux. An opposite phenomenon is at work for Art, as I`ve told him for the nth time. A small loop has a null in its radiation perpendicular to the plane of the loop. Art`s loop shares the plane of his dipole. The loop is suspended form the dipole and actually shares conductor.

The dipole has maximum desired radiation perpendicular to the plane containing the loop. At horizontal and low-angle directions to the earth, this is the direction of the loop`s null. No way could radiation from the loop reinforce dipole radiation.

In a yagi, the reflector is tuned lower in frequency and the director is tuned higher in frequency than the driven element. The purpose of this detuning is to get proper phasing between the elements so that director directs and the reflector reflects and not vice versa. But, in the case of the yagi, radiation of all the rods is in the same plane that they share and that contains the desired direction of signal transmission / reception.

In a dipole which shares conductor with one side of a suspended loop, the only possible loop contribution to the dipole`s radiation is straight up, or straignt down, or toward the ends of the dipole. This could help it approach an isotropic antenna more closely. The isotropic has about 2 db less gain than a dipole alone. Or, a slight gain toward the earth, the zenith, or the dipole ends might be realized, as stated before.

Best regards, Richard Harrison, KB5WZI

1917. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 17:09:45 UTC
From: richardharrison@webtv.net
Message-ID: <20425-3F1EC159-48@storefull-2314.public.lawson.webtv.net>
Source record: 112011

Cecil, W5DXP wrote:
"I think maybe he was referring to the MOM method of dividing a wire up into "n" segments and assuming each segment is a small individual radiator."

It`s possible. The method of moments (MOM) is one way I`m accustomed to solving civil and mechanical problems. I learned from the newsgroup that antenna modelers had appropriated the term when I explained the mechanical process on-line.

Best regards, Richard Harrison, KB5WZI

1918. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 17:18:38 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f1ec2c1@shknews01>
Source record: 112012

I did the computations : the composition of those
two "EM emissions" 90 degree out of phase (but
having the same period) leads to a wave of exactly
the same wavelength as the signal applied to the
antenna.

So, there is no contradiction in my scenario so far.

Nic.
http://www.csd.uwo.ca/~nic

1919. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 17:22:36 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1EC45C.85677575@uci.edu>
Source record: 112015

W5DXP wrote:

> They say that reflected traveling waves disappear when steady-state is
> reached. I say such a disappearing act would have to be magic.

Just hours earlier you were flinging insults at me for disputing your
claim that reflected traveling waves disappear in the steady state.

ac6xg

1920. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 17:24:56 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307230924.46e3b5dd@posting.google.com>
Source record: 112013

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<7ck04iCbemH$EArS@ifwtech.co.uk>...
...
> In the idealized far field, the E and H fields are orthogonal, in phase
> and have a ratio of 377 ohms. At any finite distance, you know that
> you're not in the idealized far field, but until you come quite close to
> the antenna you can't measure the difference in any way, so ideal
> far-field conditions are a very good assumption.

(rest deleted...)

Again, just to make things clear, this is fine in freespace (or good approximations of freespace), but when there are conductors and dielectrics scattered about, it can be significantly disrupted. Of course, all this is explained quite nicely by exactly the same physical understanding that Ian mentioned for the fields in the vicinity of the radiating structure. It's "only" a solution to a bunch of differential equations and boundary conditions. Things are just a lot simpler in freespace.

From a practical standpoint, it can be helpful to have an idea when it's safe to say you're in the far field and when you're in the near field. Somewhere in my files I have some articles about that (awaiting better organization so I can actually find them! ;-). I think the one I liked best was in "RF Design" magazine perhaps five years ago. The estimate takes into account not only how far from the antenna you are, but also how large the antenna is.

Cheers,
Tom

1921. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 17:25:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ec627_2@corp.newsgroups.com>
Source record: 112014

Jim Kelley wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:>
>>There's another one of your contradictions. "Cancellation (of two waves)
>>precludes their existance ..."??? How can two waves cancel if they never
>>existed? Once again, you are confusing cause and effect. You are asserting
>>an effect caused by itself. That won't fly.
>
> :-) Sorry, Cecil. It's a fact.

It may be a truth, but only in your mind. It is certainly not a fact.

>>Cancellation requires at least two waves.
>
> :-) Cancellation requires zero waves You can't have it both ways..

Cancellation can occur between zero waves? That's just bafflegab.
If zero waves exist, wave cancellation is impossible.

>>Maxwell's equations contain partial differentials
>>for dx, dy, dz, and dt.
>
> Yes they do, and for any set of finite values of those variables for two
> superposed functions of equal amplitude an opposite phase, the solution is
> zero. You can write the functions for the two waves and prove they cannot
> exist.

You are again confusing cause and effect. The solution is zero in only one
direction in a transmission line and we already know that. The principle of
conservation of energy dictates that the solution cannot be zero in the
opposite direction. The two rearward-traveling wavefronts cancel each other.
Their intrinsic energy components cannot be canceled. Therefore, that intrinsic
energy changes directions and joins the forward wave. It is all explained on
the Melles-Griot web page.

>> You seem incapable of conceiving of canceling wavefronts that exist for
>> only a dt of time.
>
> Since the functions cancel during that dt of time as well as any other
> length of time, you're right.

Your inability to conceptualize is your problem, not mine. My dog shares
that mental problem with you but I love her anyway.

>>I, OTOH, am completely incapable of conceiving of the cancellation
>>of two waves that never existed.
>
> Not my problem.

Certainly not mine. Do you really expect any rational person to accept your
assertion that wave cancellation occurs between wavefronts that never existed?
Do you also believe that marriages occur between men and women who never existed?
--
73, Cecil http://www.qsl.net/w5dxp

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1922. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 17:33:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ec7da$1_2@corp.newsgroups.com>
Source record: 112016

Tarmo Tammaru wrote:
> You guys might want to try crimp style alternatives to the PL259. I have
> used them with no problems. They might actually have an advantage when
> connecting to coax that uses aluminum fail and not much braid.

My solution for short pieces of coax is to use 0.2" RG-400 teflon and barrel adapters for the small coax. Soldering will not melt the coax but soldering is not required at all. The screw-down barrel holds the double braid against the PL259 body. I have had zero problems with PL259 connectors since I started this practice. For window-line fed antennas, I now use only RG-400.
--
73, Cecil http://www.qsl.net/w5dxp

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1923. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 17:40:33 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307230940.35046df0@posting.google.com>
Source record: 112017

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<1395-3F1D6556-461@storefull-2311.public.lawson.webtv.net>...
> Art Unwin wrote:
> "Way back in this thread you alludedd to antennas as being
> transformers."
>
> Art seems ready to bring up #*+@%$! ("the thing" as Phil Harris would
> say) yet another time.
>
> I would like to see Art produce some hard numbers indicating improvement
> by his "thing" as compared with other antennas. Art has indicated he
> wants others to produce his numbers, even refine his design. I`d like
> Art to even differentiate his "thing" from a "T" or "Delta" match,
> regardless of where the feedline wires go.
>
> Fresh participants might be persuaded to do Art`s work or salute his
> design.
>
> Best regards, Richard Harrison, KB5WZI

Richard if you have to swipe at me then you need a mean streak
like Yuri who uses it with vigor which you do not have.
I told you that I would not bring up my antenna again but in
taking a swipe at me you have.
As you well know my antenna is a simple small dipole coupled
to a double meshed circuit one of which being an occillator
which is extremely difficult to describe.
But you can help me. Design a tuner with two variable inductors
plus a capacitor of sorts and explain that in simple language
not ignoring the effect of intercoupling between the components.
Then put all of this in a black bos which provides only one knob
to fiddle with to tune up.
I could use such an example from somebody who can walk the walk
so I could one day if ever, communicate in a more informative way
I have a slide rule that I can supply so that you can get cracking
with the project so that you can show me how things should be done
to your satisfaction.
Best regards
Art

1924. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:13:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ed153_2@corp.newsgroups.com>
Source record: 112018

Nic. Santean wrote:
> So, the problem is that the dipole generates two fields (E&M)
> out of (time-)phase; whereas EM propagation in free space
> implies two fields in phase. The "contradiction" can not be more
> clear than this.

If the antenna is a traveling-wave antenna, the E-fields and H-fields will be in time phase, physically orthogonal to each other's plane and orthogonal to the direction of energy flow. Reference: "Antennas", Kraus & Marhefka, third edition, sec. 6-8. "Since the current is entirely in the 'z' direction, the magnetic field has but ONE component, H(epsilon)." The ratio of the E-field to the H-field will be the characteristic impedance of the traveling-wave antenna. Also: _Optics_, by Hecht, Section 3.2, Electromagnetic Waves.

For standing-wave antennas, like a dipole, there is MORE THAN ONE magnetic field component.

For standing-wave antennas, like a dipole, there are forward-traveling waves from the feedpoint to the ends of the antenna and reflected traveling waves reflected back from the ends. This is similar to an un-terminated transmission line. It is well known that the total net voltage and total net current can be 90 degrees out of phase in a lossless un-terminated transmission line. Approximately the same holds true for standing-wave antennas. The total net voltage is the phasor sum of the forward voltage and reflected voltage which relates to the total E-field. The total net current is the phasor sum of the forward current and reflected current which relates to the total H-field. And of course, as in a transmission line, the total voltage and total current can be almost 90 degrees out of phase at the two points equi-distant from the feedpoint and the ends. So of course, the E-field and the H-field near the antenna will possess the same phase as the total net voltage and total net current flowing in the wire at the same orthogonal plane.
--
73, Cecil http://www.qsl.net/w5dxp

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1925. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:17:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ed25b$1_2@corp.newsgroups.com>
Source record: 111870

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "I think maybe he was referring to the MOM method of dividing a wire up
> into "n" segments and assuming each segment is a small individual
> radiator."
>
> It`s possible. The method of moments (MOM) is one way I`m accustomed to
> solving civil and mechanical problems. I learned from the newsgroup that
> antenna modelers had appropriated the term when I explained the
> mechanical process on-line.

Or, based on further thought, he may be talking about the forward-traveling wave plus the reflected traveling wave on a standing wave antenna. Please see my other posting. The fields generated by those two traveling-waves are superposed upon each other in the vicinity of a standing-wave wire antenna and can certainly put them out of time phase with each other.
--
73, Cecil http://www.qsl.net/w5dxp

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1926. TEM planar diagrams vs. wireframe zeppelins

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:19:55 UTC
From: Loopfan <nobody@nohere.moc>
Message-ID: <flATa.130$e4.84@newsread3.news.pas.earthlink.net>
Source record: 111869

Hi everyone,

Just to point out my own ignorance: for the longest time I was trying to picture TEM waves arriving at my antenna using the typical published pictorials of planar EM fields at 90 degrees to each other.

What was really confusing was wondering why a dipole oriented to the E-plane didn't also work by trying to orient it 90 degrees out to the H-plane. This is basic theory and it presented a huge stumbling block to me.

I finally ran across a pictorial that makes it clearer - a wireframe zeppelin with the antenna in the center of it longitudinally. The wires running from each end of the zeppelin represent the electric field and the circular support frames represent the magnetic field. I suppose you could substitute all sorts of mental pictures, ie footballs, etc.

I know this is basic stuff to everyone, but for me it was a watershed moment! Now when I mentally picture throwing pool-cues and hula-hoops at my antenna, it all makes sense!

73
Brian

1927. Re: basic question about radio waves !!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:25:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ed440_2@corp.newsgroups.com>
Source record: 111873

Nic. Santean wrote:
> I did the computations : the composition of those
> two "EM emissions" 90 degree out of phase (but
> having the same period) leads to a wave of exactly
> the same wavelength as the signal applied to the
> antenna.
>
> So, there is no contradiction in my scenario so far.

Methinks the situation is a little more complicated than that. The E-field and H-field is in phase at the feedpoint of a resonant dipole. In the real world, they are never 90 degrees out of phase, but they get close to 90 degrees at the points midway between the feedpoint and the ends of the resonant dipole. The E-field and H-field are (almost) back in phase at the ends of the dipole.

The ratio of net total voltage to net total current at points along a dipole can be thought of as a spiral on a Smith Chart. It is much like a transmission line where the spacing between wires is too large for the frequency of operation and therefore leaks radiation.
--
73, Cecil http://www.qsl.net/w5dxp

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1928. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:27:22 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307231027.70a4800d@posting.google.com>
Source record: 111871

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307230600.1cf7706f@posting.google.com>...
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhsk4n5lamhs29@corp.supernews.com>...
> > I hope you'll pardon me for amplifying this a little.
> >
> > If you put X watts into the primary of a transformer and extract Y watts
> > from the secondary, the efficiency is Y/X by definition.
>
> Yes Roy. The specifics of what is being discussed is all important
> when looking at answers as well as what terms are being used to
> measure 'efficiency' and to what ends.

Roy is correct. And if both transmit and receive antennas were
directional Yagis pointed at each other instead of regular dipoles,
the efficiency would go up.

> As you are surely awawe I too look at antennas as transformers or
> coupled circuits and thus the primary contributes very much in its own
> way as far as radiation as does the secondary. Thus 'efficiency' as a
> criteria of 'value'
> is all important when using it as a term since as you point out it is
> a ratio of two terms both of which have to be made very clear for the
> term efficiency to be made clear
> Thus in stagger tuning it is important to define your requirements in
> terms of bandwidth (dual frequency radiation) or max gain (dual
> radiators on the same frequency),the above bearing little difference
> to old time receiver designwith multiple I.F. cans. It is in this
> areana that I view stagger tuning or coupling
> as being efficient in charactor. If I am incorrect in the above
> assumptions I would welcome any correction from those well versed
> inthe field.
> Best regards
> Art
>

Broadbandedness by itself is not a measure of efficiency. You
may still be very inefficient, over many octaves!

Slick
> >
> > If you put X watts into one antenna and extract Y watts from an antenna
> > coupled to it, and measure the efficiency of the "transformer" the same
> > way as you did the conventional transformer, you'll find it has lousy
> > efficiency. Why? Because a goodly fraction of the power you applied to

> > the "primary" antenna never gets to the "secondary" antenna because it's
> > radiated instead. As far as the "secondary" is concerned, it might as
> > well have been converted to heat.
> >
> > If you look at the impedance of the "primary" antenna, you'll find an
> > excess of resistance -- just enough, in fact, to account for the "lost"
> > (radiated) power.
> >
> > This isn't a statement about how well coupled antennas function as
> > antennas, whose purpose is to radiate after all. It's a statement about
> > how well they function as a transformer. Poorly.
> >
> > Roy Lewallen, W7EL
> >
> > Dr. Slick wrote:
> > > aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
> > >
> > >>> 1. Two antennas (also called transducers) placed close together
> > >>>actually can be considered a transformer, albeit a very inefficient
> > >>>one.
> > >>
> > >>Humm...By antenna I assume it also means a radiator. This would
> > >>suggest
> > >>that a stagger tuned radiators would fall into the catagory discussed
> > >>above.
> > >>Now I have a problem with that statement, because I very much see it
> > >>as a transformer which is VERY efficient and not as you stated "albiet
> > >>a very inefficient one".
> > >> Can you explain to me how a stagger tuned antenna migrate into
> > >>inefficient radiators?
> > >> Seems to me that Thevenin's theorem would show this as being
> > >>incorrect !
> > >>
> > >
> > >
> > >
> > > Well, two identical antennas spaced a few wavelengths apart can
> > > be considered a transformer, but very inefficient compared to a "real"
> > > transformer with identical primary and secondary turns, with an
> > > appropriate toroid core. This would be because the core material will
> > > increase the magnetic flux density, and will increase the coupling
> > > between the two windings/transducers.
> > >
> > > Point is, the farther apart the antennas are, the less efficient
> > > of a "transformer" they will be.
> > >
> > > I'm not familiar with stagger tuned antennas, although the name
> > > would suggest that it is tuned for multiple resonances, so that the
> > > antenna will be broadband.

> > >
> > >
> > >
> > > Slick

1929. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:29:19 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1ED3FF.DA76F0BB@uci.edu>
Source record: 111872

W5DXP wrote:
>
> Yuri Blanarovich wrote:
> > Here is your answer Cecil. Resistor that radiates.
>
> If, as Jim says, an RF wave is not destroyed by being dissipated
> in a resistor dummy load, it has to radiate - yes? no?

It should have been fairly obvious to most that's NOT what I was
saying.

jk

1930. Re: Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:31:06 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307231031.49fd11bf@posting.google.com>
Source record: 111874

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f1e903e$1_7@corp.newsgroups.com>...
>
> >> Roy doesn't seem to appreciate me making hamburger out of ham radio's
> >> sacred cows. :-) I actually enjoy the T-Bones best of all.
>
> I didn't forget the smiley face, an indication of a joke. Remember jokes?
> --
> 73, Cecil http://www.qsl.net/w5dxp

I read jokes everytime i read your postings, Cecil.

:(

Slick

1931. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:36:49 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307231036.2aa8686f@posting.google.com>
Source record: 111875

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<7ck04iCbemH$EArS@ifwtech.co.uk>...
> Dr. Slick wrote:
> >
> >
> > I was going to ask you to define "far-field", and i thought maybe
> >people defined this as a number of wave-legnths away, but if it's
> >nebulous like a lot of RF topics, then i would certainly understand.
> >
> >
> It's not nebulous at all. There is no boundary fence in the ether with a
> sign saying "Here endeth the near field", but you *can* draw your own
> lines.
>
> That is not at all unusual in physics and engineering, nor is it limited
> to RF problems.
>
> In the idealized far field, the E and H fields are orthogonal, in phase
> and have a ratio of 377 ohms. At any finite distance, you know that
> you're not in the idealized far field, but until you come quite close to
> the antenna you can't measure the difference in any way, so ideal
> far-field conditions are a very good assumption. Coming closer to the
> antenna, you enter the transition zone where you start to see measurable
> and calculable deviations, but you can set an engineering criterion to
> say you're still close enough to far-field conditions (a 1 degree E-H
> phase difference is one example, but people can and do set different
> criteria for different purposes).
>

This thread is about measuring the E field, but i've never heard
of measuring the H field as well, and then comparing the phase
difference.

> Equally, you can begin in the near field and work your way outward.
> You'll notice some strange behaviour of the E and H fields very close-in
> (all of which turns out to be completely predictable if you try hard
> enough) but farther out they get their act together and settle into
> their correct far-field relationship.
>
> The lack of ready-drawn boundaries doesn't make any of those ideas
> "nebulous". They are exactly as clear - or exactly as nebulous - as the
> way you choose to think about them. There's still the same rock-solid
> physics underneath.

A degree of phase difference would be a boundary, just as the
-3dB cutoff point is a cut-off freq. for a filter.

Slick

1932. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:43:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ed86b_2@corp.newsgroups.com>
Source record: 111876

Jim Kelley wrote:

> W5DXP wrote:
>>They say that reflected traveling waves disappear when steady-state is
>>reached. I say such a disappearing act would have to be magic.
>
> Just hours earlier you were flinging insults at me for disputing your
> claim that reflected traveling waves disappear in the steady state.

Such a bold-faced lie. I have argued loud and long with Peter (and
others) that reflected traveling waves are alive and well during the
steady-state. Peter will (hopefully) jump in and verify that fact.

Why do you give in to your compulsion to lie about what I have said?
Anyone following this discussion can observe what you are tring to
do. Why can't you just stick to the technical discussion without having
to lie? Because you want to win the argument at any ethical cost?

For the record: I think that the forward and reflected waves detected
by a Bird wattmeter are really there, transporting the energy and
momentum that all EM waves possess. You are the one who claims that
those reflected waves from a mismatched load transfer no energy and
possess no momentum. That is, unless they are going to encounter a
resistor in the future in which case, they are required to predict
the future better than you can. Do you realize that your waves are
smarter than you are?

OTOH, I believe Hecht when he says: "One of the most significant
properties of the electromagnetic wave is that is transports energy
and momentum."

You seem to have chosen to dispute and attempt to discredit Hecht,
Ramo & Whinnery, the Melles-Griot web page, and HP Application Notes.
Don, good luck on dueling with windmills.
--
73, Cecil http://www.qsl.net/w5dxp

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1933. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:54:11 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030723145411.03043.00000633@mb-m01.aol.com>
Source record: 111877

Art figured out that:
>
>Richard if you have to swipe at me then you need a mean streak
>like Yuri who uses it with vigor which you do not have.

Yuri likes propagation of radio waves and well performing antennas, he hates propagation of crap and misinformation if he stumbles on it. He doesn't care if it is Art, Freak or Tom. So far he has been more (always) right than wrong and he can spell despite of not learning English (his 7th language) at schools. Sometimes he is trying to be funny, but that is judged by the audience.

If Art tries one program (AO) and makes recommendation and "evaluation" of modeling software based on that, then he uses his "mean vigor streak" to debunk another crap. He looked at few other programs and knows that AO is still good but a bit archaic and limited. He also has seen different dimensions coming from AO optimizer and others. Who to trust? Need to get the hardware models out and correlate.

Art please use spell checker (or slide rule) because you are putting Englishpersons (xG) in bad light.

Bada Vigor BUm

1934. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:55:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1edb36_2@corp.newsgroups.com>
Source record: 111878

Jim Kelley wrote:
>>If, as Jim says, an RF wave is not destroyed by being dissipated
>>in a resistor dummy load, it has to radiate - yes? no?
>
> It should have been fairly obvious to most that's NOT what I was
> saying.

You said "Waves cannot be destroyed". I quoted Hecht saying that waves can be created and destroyed. Please tell us again that, "RF waves are not destroyed by a dummy load." When you come to understand that EM waves can be destroyed but the energy in those waves cannot be destroyed you will begin to understand EM physics.
--
73, Cecil http://www.qsl.net/w5dxp

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1935. Re: Another of Cecil's threads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 18:57:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1edbc0_2@corp.newsgroups.com>
Source record: 111879

Dr. Slick wrote:
> I read jokes everytime i read your postings, Cecil.

I have requested that you list just one point of technical disagreement
between you and me, but so far you have refused and only responded with
ad hominem attacks. What can we deduce from that fact?
--
73, Cecil http://www.qsl.net/w5dxp

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1936. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 19:23:52 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1EE0C8.B0659098@uci.edu>
Source record: 111880

W5DXP wrote:
> You said "Waves cannot be destroyed".

A google seach says you're wrong. The only hits for 'cannot be
destroyed'
are by an author named Cecil Moore.

jk

1937. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 19:47:29 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f1ee5a6@shknews01>
Source record: 111881

We are talking about half wavelength dipole antennas, right ?

Nic.

> Methinks the situation is a little more complicated than that. The
> E-field and H-field is in phase at the feedpoint of a resonant
> dipole. In the real world, they are never 90 degrees out of phase,
> but they get close to 90 degrees at the points midway between the
> feedpoint and the ends of the resonant dipole. The E-field and H-
> field are (almost) back in phase at the ends of the dipole.
>
> The ratio of net total voltage to net total current at points along
> a dipole can be thought of as a spiral on a Smith Chart. It is much
> like a transmission line where the spacing between wires is too large
> for the frequency of operation and therefore leaks radiation.

1938. Re: AM Broadcast band antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:11:05 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307231211.acca950@posting.google.com>
Source record: 111882

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message
news:<3f1a1a39_3@news1.prserv.net>...
> Dave:
> I quickly scanned the responses to this point, and no one gave you the
> correct guidance. In this present day environment, if you are interested in
> BCB DXing, forget electric field (wire) antennas. Too much noise.

I agree, but not really because of the noise. Because of the non
directional performance of most fairly short random wires for MW use.

Unless
> you live in the middle of the desert, and are willing to forgo modern
> conveniences, all an outside wire at BCB will give you is more noise. Start
> looking into shielded loops. Lots of information on the 'net about them.
> Up to about 3 MHz, they will outperform wire antennas hands down anywhere
> except "clean" government receive sites. And, even there, shielded loops
> are the antenna of choice for BCB intercept, and lower frequencies. See,
> for example "Hermes Loops" on TCI's web page. I forget who else makes them,
> but the government buys lots of them.
>
> Now, if you are interested in Short Wave reception, that's another matter.
> But pitfalls lurk there also.

Any kind of loop would be better than the wire. Doesn't really have to
be shielded, although that might reduce local noise a bit. I've tried
both, and could tell little difference. I use a 12 turn-16 inch loop
for MW, and local noise is very little problem at all. I have wire
antennas of various lengths and none are as good as the loop for MW.
The wires are too short to be directional on MW, and you get 4
stations on each freq. With the loop, you can null out noise or
unwanted stations. Adding a random wire is fairly useless for most
decent MW radios with a ferrite antenna inside. The s/n ratio will
rarely increase unless the ferrite antenna is really micky mouse. In
some case, the s/n ratio may decrease being the ferrite antenna is
directional and the random wire is not. MK

1939. Re: basic question about radio waves

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:16:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1eee12_4@corp.newsgroups.com>
Source record: 111883

Nic. Santean wrote:

> We are talking about half wavelength dipole antennas, right ?

Yes. A 1/2WL dipole can be thought of as a very leaky transmission line. It has standing waves that leak radiation into the ï¿½ther. :-) May I suggest trying to understand traveling-wave antennas before getting into standing-wave dipoles? Consider a terminated V-beam or terminated Rhombic to eliminate the confusion associated with reflected waves. But don't feel bad about confusion associated with reflected waves. Some of the r.r.a.a gurus don't understand reflected waves and the energy plus momentum involved in their very existence. So many sacred cows - so little time. :-)

>>Methinks the situation is a little more complicated than that. The
>>E-field and H-field is in phase at the feedpoint of a resonant
>>dipole. In the real world, they are never 90 degrees out of phase,
>>but they get close to 90 degrees at the points midway between the
>>feedpoint and the ends of the resonant dipole. The E-field and H-
>>field are (almost) back in phase at the ends of the dipole.
>>
>>The ratio of net total voltage to net total current at points along
>>a dipole can be thought of as a spiral on a Smith Chart. It is much
>>like a transmission line where the spacing between wires is too large
>>for the frequency of operation and therefore leaks radiation.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1940. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:21:32 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfmqog$ggl5r$1@ID-134747.news.uni-berlin.de>
Source record: 111884

I have always tinned the braid as the third step
in the assembly process. Have I been doing things
wrong for 40 years.

--
73 es cul

wb3fup
a Salty Bear

"W7TI" <noway@nohow.com> wrote in message
news:g7lthv8m2lhujipkugrjjhs9cci69af4nb@4ax.com...
> On 23 Jul 2003 16:43:24 GMT, Allodoxaphobia
<bit-bucket@config.com>
> wrote:
>
> >I get onto and off of each hole with solder as
quickly as
> >possible -- making sure I `fill` each hole
completely.
>
>

>
> I've done it that way for years, too. The only
problem is not knowing
> if you have a good bond to the braid, being
buried under the "pool" of
> solder and therefore invisible.
>
> I guess that's why the original designer gave
you four chances at it.
> :-)
>
> --
> 73, Bill W7TI

1941. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:38:55 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1EF25F.2D6BF54@uci.edu>
Source record: 111886

W5DXP wrote:
>
> Jim Kelley wrote:
> > "W5DXP" <Cecil.A.Moore@ieee.org> wrote:>
> >>There's another one of your contradictions. "Cancellation (of two waves)
> >>precludes their existance ..."??? How can two waves cancel if they never
> >>existed? Once again, you are confusing cause and effect. You are asserting
> >>an effect caused by itself. That won't fly.
> >
> > :-) Sorry, Cecil. It's a fact.
>
> It may be a truth, but only in your mind. It is certainly not a fact.

These waves never propagate. You can call them waves if you like, but
they are only mathematical constructs. Cancellation precludes their
existance.

> >>Cancellation requires at least two waves.
> >
> > :-) Cancellation requires zero waves You can't have it both ways..
>
> Cancellation can occur between zero waves?

No. Zero waves occur because of cancellation.

> If zero waves exist, wave cancellation is impossible.

The waves which impinge upon the boundary certainly exist. But V3 and
V4 do not exist because their existance is prevented.

> >>Maxwell's equations contain partial differentials
> >>for dx, dy, dz, and dt.
> >
> > Yes they do, and for any set of finite values of those variables for two
> > superposed functions of equal amplitude an opposite phase, the solution is
> > zero. You can write the functions for the two waves and prove they cannot
> > exist.

> You are again confusing cause and effect.

To you that is a truth. But it certainly is not a fact. And you
certainly can't dispute that for any set of finite values of those
variables for two superposed functions of equal amplitude an opposite
phase, the solution is
zero. That means, the waves do not exist. They don't disappear. They
never appeared.

> The solution is zero in only one
> direction in a transmission line and we already know that.

The functions are only in one direction! Are you claiming that a wave
in a transmission line can move in more than one direction at a time?

> The principle of
> conservation of energy dictates that the solution cannot be zero in the
> opposite direction.

:-) Actually, it's not quite that specific. The conservation of energy
principle says that energy in equals energy out minus losses. In the
case of optics we say that transmitted energy equals incident energy
minus reflected energy. Wave cancellation prevents energy from being
reflected, and thus transmitted energy equals incident energy. That's
what the conservation of energy principle says about this. You're
making up the rest.

> The two rearward-traveling wavefronts cancel each other.
> Their intrinsic energy components cannot be canceled.

There is no intrinsic energy in waves that never propagate.

> Therefore, that intrinsic
> energy changes directions and joins the forward wave.

Once you get an idear in ur head, there's no shiftin' it.

> It is all explained on
> the Melles-Griot web page.

If you think that Melles-Griot "explains it all" you're seriously
deluding yourself. Melles-Griot would even think of making such a
claim. They certainly havenn't supported your claims about what they're
saying - have they.

> >> You seem incapable of conceiving of canceling wavefronts that exist for
> >> only a dt of time.
> >
> > Since the functions cancel during that dt of time as well as any other
> > length of time, you're right.

> Your inability to conceptualize is your problem, not mine.

So you're claiming that the functions don't cancel during time dt? I
think that's more indicative of an inability on your part with respect
to mathematics.

> Certainly not mine. Do you really expect any rational person to accept your assertion
that wave cancellation occurs between wavefronts that never existed?

Do you really expect anyone to believe that waves can both exist and not
exist at the same time?

> Do you also believe that marriages occur between men and women who never existed?

Do you believe that radio waves emerge from your radio when they are prevented from emerging from it?

73 ac6xg

1942. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:42:02 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <uqCTa.130631$H17.43347@sccrnsc02>
Source record: 111887

That's what came withthe radio, why buy another?
"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bfjl4g$fid9l$1@ID-134747.news.uni-berlin.de...
> Go the store you bought your unit from. Spend
> 3.99 on a folded dipole cut for the middle of the
> FM broadcast band (430-2385). Put it on the wall
> in an "inverted V" configuration.

1943. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:42:46 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1EF346.D6D19A0@uci.edu>
Source record: 111889

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>They say that reflected traveling waves disappear when steady-state is
> >>reached. I say such a disappearing act would have to be magic.
> >
> > Just hours earlier you were flinging insults at me for disputing your
> > claim that reflected traveling waves disappear in the steady state.
>
> Such a bold-faced lie. I have argued loud and long with Peter (and
> others) that reflected traveling waves are alive and well during the
> steady-state. Peter will (hopefully) jump in and verify that fact.

You're arguing with me about it right now in another thread! :-)

> Don, good luck on dueling with windmills.

I'm not trying to sell something, Bill, you are. You're trying to get
publications to buy into your energy reversal theory. You'll need lots
of luck with that.

73, ac6xg

1944. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:44:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1ef4cb$1_4@corp.newsgroups.com>
Source record: 111888

Jim Kelley wrote:

>
> W5DXP wrote:
>
>>You said "Waves cannot be destroyed".
>
> A google seach says you're wrong. The only hits for 'cannot be
> destroyed' are by an author named Cecil Moore.

Try "cease to exist". Here's what you said. Read it and weep.

> Waves cannot just "cease to exist" for the very same reason that
> energy cannot cease to exist.

"Ceasing to exist" and "being destroyed" are identical events. Waves
that are destroyed cease to exist. Waves that cease to exist must,
of necessity, be destroyed. So where did you learn your ethics? At
the rattlesnake farm?
--
73, Cecil http://www.qsl.net/w5dxp

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1945. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:54:30 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfmsma$gesd1$1@ID-134747.news.uni-berlin.de>
Source record: 111890

NO IT IS NOT WHAT CAME WITH THE RADIO!

What came with the wire is a T, not a folded
dipole. No I have no idea of what I am talking
about. I did not work there for 6 years. You
appear, on the surface, the customer who would not
listen, to whom I happily sold the useless
amplified antennas for $30 to $50.

--
73 es cul

wb3fup
a Salty Bear

"CW" <clinton.magers@comcast.net> wrote in message
news:uqCTa.130631$H17.43347@sccrnsc02...
> That's what came withthe radio, why buy another?
> "WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in
message
>
news:bfjl4g$fid9l$1@ID-134747.news.uni-berlin.de...
> > Go the store you bought your unit from. Spend
> > 3.99 on a folded dipole cut for the middle of
the
> > FM broadcast band (430-2385). Put it on the
wall
> > in an "inverted V" configuration.
>
>

1946. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 20:56:24 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f1ef80e_1@news1.prserv.net>
Source record: 111892

Dresser Industries I know--good customer.
SCADA, I have worked with for 40+ years, although we usually supplied our own RF/microwave interconnectivity. Used to be a good use for the 900 meg band before all this cell nonsense. I guess that applies to 2 GHz for the past ten years also.
Low frequency carrier current is familiar to me, the office next door to mine in Lynchburg in 1960 is where GE designed their carrier current signalling equipment.

So, where are these "repeaters" you blithely cited the existence of? Power line carrier is regularly discussed in Transmission and Distribution News as well as other electric utility magazines, and I do not recall seeing any reference to any equipment outside substations associated with carrier current signaling. I submit that the isolation inductors alone qualify the location as a substation anyway, nevermind the ceramic posts they call coupling capacitors.

--
Crazy George
Remove NO and SPAM from return address
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1e14a8_1@corp.newsgroups.com...
> Crazy George wrote:
> > Manufacturer and model #?
> > Or location of one in South Texas?
> > Or URL for manufacturer of one?
> > Outside a sub-station, of course, which will be the requirement for BPL
> > repeaters, which will also have to be bi-directional.
>
> When I worked for Dresser Industries in Houston in the 60's, some
> of our SCADA systems sold to power companies operated over power
> line carrier systems. As I remember, it operated on RF frequencies
> below the AM broadcast band.
>
> A web search for "Power Line Carrier" turned up 650,002 entries
> including some for high speed internet access.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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1947. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 21:00:00 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <kHCTa.128828$ye4.90568@sccrnsc01>
Source record: 111891

But to offset that, they should be smart enough not to take up an occupation
wher they need to be.
"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message
news:3f1e0af9_4@news1.prserv.net...
> Mike:
>
Some people are just not competent with their hands.

1948. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 21:13:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1efb79_4@corp.newsgroups.com>
Source record: 111893

Jim Kelley wrote:
> These waves never propagate.

Of course not and I NEVER said they did. That's just another strawman of yours. The wavefronts originate in and are canceled in a 'dt' of time. What is it about calculus that you do not understand?

>>Cancellation can occur between zero waves?
>
> No. Zero waves occur because of cancellation.

Bafflegab!!! The energy in the waves CANNOT be destroyed. Zero waves occur in one direction. The energy in the canceled waves flows in the opposite direction. So says every physics book that I own. Sorry about that.

You have said:
> Waves cannot just "cease to exist" for
> the very same reason that energy cannot cease to exist.

This is the biggest bunch of BS that you have ever uttered! On what planet do you live that photons must be conserved?

> The waves which impinge upon the boundary certainly exist. But V3 and
> V4 do not exist because their existance is prevented.

Without their existence, wave cancellation is impossible. Yet you have agreed that wave cancellation exists. Which is it? Does wave cancellation exist? If yes, then V3 and V4 exist. If no, then come up with an explanation that doesn't involve wave cancellation. (Your spelling of "existance" sic, is driving me crazy. Please correct it.)

> To you that is a truth. But it certainly is not a fact. And you
> certainly can't dispute that for any set of finite values of those
> variables for two superposed functions of equal amplitude an opposite
> phase, the solution is > zero.

What you are missing is that your solution is only for one direction. The other direction contains the reflected energy as proven by a Bird directional wattmeter. Aren't you capable of conceptual thoughts involving the two directions in a one-dimensional environment? My dog is almost capable of that.

> Are you claiming that a wave
> in a transmission line can move in more than one direction at a time?

No, I am claiming that the energy in waves can reverse direction in a 'dt' of time. Do you disagree?

> :-) Actually, it's not quite that specific. The conservation of energy
> principle says that energy in equals energy out minus losses.

Bafflegab! The conservation of energy principle says the energy in an
electron can be tracked to an electron plus photon and back. Good Grief!
Are you really teaching physics students? If so, I feel sorry for them.
Does your boss know that your are teaching bafflegab?

> There is no intrinsic energy in waves that never propagate.

Optics, by Hecht says that all EM waves propagate and contain
energy and momentum. Sorry about that.

> Once you get an idear in ur head, there's no shiftin' it.

I really admire your technical assertions, I really do. When
are you going to make one?

>>Your inability to conceptualize is your problem, not mine.
>
> So you're claiming that the functions don't cancel during time dt?

Of course, they cancel during time dt. Why do you feel the compulsion
to erect those more-than-obvious strawmen? That's usually the diversion
of someone who is desperate after painting himself into a corner. Why
do you feel the need for diversions? Why can't you just discuss the
technical aspects?

> Do you really expect anyone to believe that waves can both exist and not
> exist at the same time?

No, that's just one of your strawmen. I expect some people to accept the fact
of physics that a wave can be destroyed by wave cancellation as described in
Optics, by Hecht and on the Melles-Griot web page.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

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1949. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 21:19:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1efcf3$1_4@corp.newsgroups.com>
Source record: 111894

Jim Kelley wrote:
> W5DXP wrote:
>>Such a bold-faced lie. I have argued loud and long with Peter (and
>>others) that reflected traveling waves are alive and well during the
>>steady-state. Peter will (hopefully) jump in and verify that fact.
>
> You're arguing with me about it right now in another thread! :-)

If you really believe that, Jim, you are *extremely* mentally ill.
Go obtain some medication for your problem and get back to us.
--
73, Cecil http://www.qsl.net/w5dxp

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1950. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 21:22:07 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1efd8d_4@corp.newsgroups.com>
Source record: 111895

Crazy George wrote:
> So, where are these "repeaters" you blithely cited the existence of?

They existed in the 60's. That's all I can tell you. After that, I became
100% digital at Intel Corp. Doesn't the present existence of 650K of web
pages involving "Power Line Carrier" count?
--
73, Cecil http://www.qsl.net/w5dxp

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1951. Re: 30 meter add-on for HF2-V idea

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 21:39:15 UTC
From: John <my-callsign@qsl.net>
Message-ID: <9gDTa.524$c17.448226@newsfep1-win.server.ntli.net>
Source record: 111917

I used to use a 40mtr quarter wave wire vertical and a 30 mtr quarter wave wire vertical in parallel up a 10mtr fibre-glass pole and it worked fine, though they were separated by about 5 inches. Coincidentally I now have a HF2V with the 30m add-on kit but I'm sure you could run a parallel 30mtr quarter wave instead of the add-on kit. The Butternut 20 mtr add-on kit for the HF2V is a piece of wire, a quater wavelength long, fed in parallel with the main antenna.

John
G4IRN

"Terry Ashland" <t_ashland@yahoo.com> wrote in message
news:6e6aeba9.0307221358.7aef741f@posting.google.com...
> I haven't tried it, but I thought why wouldn't a 23' foot piece of
> wire parallel to the HF2-V fed at the base work for 30 meters? I
> realize you might have to retune 40 and 80, but it sure would beat
> buying the 30 meter add on kit. Any thoughts would be appreciated.
> Anyone try any other 30 meter solutions with this vertical?
> 73,
>
> Terry, WK0F

1952. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 22:07:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1f0811$1_8@corp.newsgroups.com>
Source record: 111896

W7TI wrote:
> Not the wrong way, the hard way.

May I suggest RG-400 and screw-in adapters? You don't like soldering?
No soldering absolutely necessary except for the center pin.
--
73, Cecil http://www.qsl.net/w5dxp

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1953. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 23:08:13 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F1F155D.19CCA5DD@uci.edu>
Source record: 111897

W5DXP wrote:
>
> Jim Kelley wrote:
> > These waves never propagate.
>
> Of course not and I NEVER said they did. That's just another strawman
> of yours. The wavefronts originate in and are canceled in a 'dt' of
> time.

The same 'dt' of time. The waves would cancel for any t and any x.
What a ridiculous argument to be having.

> >>Cancellation can occur between zero waves?
> >
> > No. Zero waves occur because of cancellation.
>
> The energy in the waves CANNOT be destroyed.

Zero waves=zero energy.

> Zero waves
> occur in one direction.

That's what I just got done saying and you called it "bafflegab" or some
such thing.

> The energy in the canceled waves flows in the
> opposite direction.

The energy definitely flows in the opposite direction - from source to
load. You keep claiming it's flowing toward the source. That's what the
argument is about. Remember?

> > The waves which impinge upon the boundary certainly exist. But V3 and
> > V4 do not exist because their existance is prevented.

> Without their existence, wave cancellation is impossible.

They don't exist, and there's nothing besides cancellation to explain
their absence.

> Yet you have
> agreed that wave cancellation exists. Which is it? Does wave cancellation
> exist? If yes, then V3 and V4 exist.

Wave cancellation exists, and as a result V3 and V4 do not. Very
simple.

(Your spelling of "existance" sic, is
> driving me crazy. Please correct it.)

Short drive, methinks.

> What you are missing is that your solution is only for one direction.

There is only one solution to that equation - and it is for one direction only. The forward moving energy is expressed by a different equation, obviously with a different solution.

> The other direction contains the reflected energy as proven by a Bird
> directional wattmeter.

Yes, the wattmeter says 133.33 in one direction and 33.33 in the other direction.

> > Are you claiming that a wave
> > in a transmission line can move in more than one direction at a time?

> No, I am claiming that the energy in waves can reverse direction in
> a 'dt' of time. Do you disagree?

A wave going in a different direction is kind of a different wave, to my way of thinking. Maybe you could ask your dog what he thinks about that, and let us know.

> > The conservation of energy
> > principle says that energy in equals energy out minus losses.

> Bafflegab!

So are you saying that energy is not conserved when energy in equals energy out, minus losses? Or are you saying that energy is conserved when energy in does not equal energy out, minus losses?

> Does your boss know that your are teaching bafflegab?

Actually, he says that I'm conversing with a nutcase.

1954. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 23:10:24 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307231510.41a8ca7d@posting.google.com>
Source record: 111898

"Joel Dorfan" <bdorfan@fred.icon.co.za> wrote in message
news:<3f1ea5d3$0$226@hades.is.co.za>...
> Thanks for all of the useful input.
>
> Art where did you purchase your AO-Pro?
>
> Joel
I wrote to the address given by Roy in his posting on this thread.
Return contact was made by E mail and the programs were sent by
computor.
There were interchanges after receipt because I am computor
illiterate but Brian hung in there with me until it was off and
running.
By the way AO also came with AO pro and there was not any of those
irritating keys that were designed to prevent theft which then became
a problem for users. The manual that comes with the programs are
extensive
and leave nothing to question. If I was able to follow them then most
people on this newsgroup will testify that they then must be very
good.
I would point out again that I only have experience with AO and by no
means can be seen as being an expert so comments made by others should
also be heeded.
Best regards
Art

>
> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
> news:85ed38d.0307230532.5d1993bc@posting.google.com...
> > Arie,
> > I remember when you first spoke of your program on this newsgroup
> > where I commended you for your sharing attitude. My computor was down
> > at that time but I do remember the many comments given , all of which
> > were good.
> > I really should have noted the facts down as it appears to me that
> > your program
> > offers much more than any program on the market and is a formidable
> > new height
> > that competing programmers will have to overcome.
> > Rest assured that I will be taking a closer look at your work since I
> > believe that the optimisation tool is a prime requisite of any antenna
> > evaluation program.
> > Best Regards
> > Art

> >
> >
> >
> >
> >
> >
> >
> >
> > 4nec2@gmx.net wrote in message
> news:<ee90361b.0307230100.1ba3bf6e@posting.google.com>...
> > > > I have no experience with anything other than AO which I have used
> > > > for many years. I purchased A.O. because it had the ability of
> > > > analysing any given radiator over different quality grounds and also
> > > > for it's ability to change the geometry of a radiator so that gain,
> > > > swr, F/B e.t.c can be optimised depending on your requirement.
> > >
> > > So can 4nec2. It's optimizer was based on the same principles as AO.
> > > Furthermore it can (almost) automatically convert *.ant files to 4nec2
> > > input files. (just specify your *.ant file as a 4nec2 input file).
> > > Besides that 4nec2 is based on the nec-2 core whereas AO was based on
> > > the mininec core, especially important when modeling 'close' to
> > > ground.
> > >
> > > > It is also a great learning tool because you can see where major
> changes
> > > > occur while the program runs that gives you insights as to
> > > > what further changes you can present to the program and follow the
> > > > computors progress as it changes geometries e.t.c.
> > >
> > > I would suggest to take a look at the 4nec2 'evaluate' option. With
> > > this you can stepwise change one or more antenna, ground, load or
> > > other dimensions and see what effect they have on far-field pattern or
> > > other antenna characteristics.
> > >
> > > > I have just purchaes the A.O. Pro program which cost $300.
> > > > This program is the same as the std A.O. program except it has many
> > > > more pulses available e.t.c.
> > >
> > > 4nec2 max is 5000 segments for XP systems, max 11000 segments for
> > > none-XP systems
> > >
> > > > As far as I am aware the A.O. program can achieve what most of the
> > > > other programs can achieve whereas most other programs cannot achieve
> > > > what A.O. can achieve which really tells the story.
> > >
> > > I would be very glad to know what you think could be added to 4nec2 to
> > > make it even better.
> > >
> > > Furthemore it might be usefull to know the following is also possible:
> > > - Switchable genetic based or traditional hil-climbing optimizer

> > > - 2D, 3D graphical- and chart- display of near-field data
> > > - Optional surface wave-data included in far-field.
> > > - Sophisticated Smith-chart display when using frequency sweep.
> > > - Interface to VOACAP propagation prediction freeware
> > > - CAD alike geometry editor for starting modeler (however not usable
> > > when optization is required, see help-file)
> > > - Nec-2 aware or default notepad editor also usable.
> > >
> > > One drawback might be the lack of a very comprehensive getting started
> > > and/or user manual, but you can always contact me in case of problems.
> > >
> > > Please don't interpret this as an advertisement. Just as an attempt to
> > > share some private-made software with others interested in antenna
> > > modeling and/or propagation prediction.
> > >
> > > Arie.

1955. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 23:41:26 UTC
From: N3KCT <eagxxx@hotmail.com>
Message-ID: <v6GdncUnyvmrgIKiXTWJiw@comcast.com>
Source record: 111899

I've never soldered the outer braid either.

Folding it back and tightening down the connector
over it has worked well for me for over 20 years.

This even works well when using reducers for
58, 58 & 8X. Fold the braid back over the reducer,
tighten, solder the center pin, and your done.

1956. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 23:41:44 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfn6fo$3it$1@titan.btinternet.com>
Source record: 111900

Cec sed -
> What is it about calculus that you do not understand?
>
==========
Cec, and to whom it may concern,

Probably most of it.

Here in Euro-side an amateur radio ticket can be obtained without ever having heard of it. And what with present educational standards that's nearly all of us.

The trouble with Guru's displaying their knowledge on this newsgroup is failure to appreciate the technical standing of their 'pupils'. Yet as often as not the manner in which questions are asked are a dead giveaway. For a reply to be of value it is necessary for the Guru to 'tune in' to the recipient, ie., become resonant in same sort of language.

Too seldom is any thought given to it. As a result I would guess many questioners become so confused or overloaded with haggling between the 'experts' they don't bother reading to the end of the thread, possibly to consider packing up the hobby. It is impossible for a novice in a particular subject to distinguish wheat from chaff, or to choose between one old-wive's tale and another. Confusion reigns!

So KISS ! In plain unabbreviated English.

To refer to Terman et al to somebody who has probably never heard of any of 'em is no better than uninvited spam and indicates a lack of self confidence.

But who am I to lay down the Law? Tonight's plonk is Claret. Vive La France! Hic!

Reg, G4FGQ

1957. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-23 23:43:48 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <3f1dcc30_3@newsfeed>
Source record: 111901

I quote, in part, from my original post:

"State"? Do you mean "write" or "post"?
"conclusions"? DYM "opinions"? With references, a/o bibliography?:
"concepts"? What DYM ? New or old?

Yuri got it.

a/o: and/or

73, Dave, N3HE

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message

SNIP
> What's a WDYM?
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
SNIP

1958. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 00:19:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1f273a_7@corp.newsgroups.com>
Source record: 111902

Jim Kelley wrote:

> W5DXP wrote:
>>The wavefronts originate in and are canceled in a 'dt' of time.
>
> The same 'dt' of time. The waves would cancel for any t and any x.
> What a ridiculous argument to be having.

According to Calculus, not ridiculous at all. Many things happen in a delta-t of time. Some things only happen when delta-t approaches zero. I suggest you review Calculus. At the moment, you are clueless.

> Zero waves=zero energy.

This is commonly known as "assuming the proof". Sorry, but first you have to prove that there are zero waves which is obviously impossible.

>>The energy in the canceled waves flows in the
>>opposite direction.
>
> The energy definitely flows in the opposite direction ...

So what is your objection? For reflected energy from a mismatched load to flow in the opposite direction it must somehow be re-reflected. I have presented a re-reflection method. You haven't.

>>Without their existence, wave cancellation is impossible.
>
> They don't exist, and there's nothing besides cancellation to explain
> their absence.

Another clear confusion of cause and effect. Their absence cannot cause their absence. Your assertions are ridiculous and I suspect you would be fired if your boss knew about it.

> Actually, he says that I'm conversing with a nutcase.

I've heard of back-scratching college departments like that. Sooner or later they come tumbling down just like the Catholic Church in Boston.

> Wave cancellation exists, and as a result V3 and V4 do not. Very
> simple.

You are extremely confused. Wave cancellation cannot exist without the canceled waves which are V3 and V4. If V3 and V4 don't exist, then wave cancellation is impossible. If wave cancellation exists, then V3 and V4 exist if only for a 'dt' of time. How you can deny the rules of Calculus is beyond belief.

> A wave going in a different direction is kind of a different wave, to my
> way of thinking.

Yes, it is a different wave, i.e. not the same wave as V3 and V4. It is
a constructive interference energy wave defined in _Optics_ as 2*Sqrt(I1*I2).

>>> Zero waves occur because of cancellation.

>>Bafflegab!

> So are you saying that energy is not conserved when energy in equals
> energy out, minus losses? Or are you saying that energy is conserved
> when energy in does not equal energy out, minus losses?

No, I'm saying that your statement above is bafflegab. Zero waves IN
ONE DIRECTION occur because of cancellation. That causes a coherent energy
wave in the opposite direction which can be viewed as an energy reflection.
It does NOT cause zero waves in both directions as you imply.
--
73, Cecil http://www.qsl.net/w5dxp

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1959. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 00:25:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1f28a1$1_7@corp.newsgroups.com>
Source record: 111903

Reg Edwards wrote:
> So KISS ! In plain unabbreviated English.

That's exactly what I try to do, Reg. But everyone keeps asking me to
prove my concepts using Maxwell's equations, as if that was possible
on an ASCII newsgroup. My attitude is: If they are incapable of
arguing concepts, then they probably don't know what they are talking
about anyway. When I ask for a conceptual thumbnail sketch and am refused,
that's exactly what I assume. Even Einstein was capable of presenting his
relativity concepts in a language that most technical people could understand.
--
73, Cecil http://www.qsl.net/w5dxp

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1960. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 00:33:18 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <j6auhvoag3ab18qb98rcp64q5an68upemd@4ax.com>
Source record: 111992

On Tue, 22 Jul 2003 15:42:26 -0700, W7TI <noway@nohow.com> wrote:

>
>Also, only a small-wattage iron is needed. I used a 40-watt Weller,
>which is not hot enough doing it the normal way. There is less metal
>acting as a heat sink.

Get a 175 watt Weller, then you'll be able to solder it through the
four holes in just a few seconds, like it's designed for.

Bob
k5qwg

1961. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 00:38:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1f2b94$1_7@corp.newsgroups.com>
Source record: 111904

David J. Windisch wrote:

> I quote, in part, from my original post:
> "State"? Do you mean "write" or "post"?

"state - to set forth formally in speech or writing"

> "conclusions"? DYM "opinions"? With references, a/o bibliography?:

"conclusion - a result, issue, or outcome"

> "concepts"? What DYM ? New or old?

"concept - an idea of something formed by mentally combining all its
characterstics"

Sorry David, I had no idea in the world what "DYM" means. So how the heck
can you get aggravated at me for my ignorance of "DYM"? Do you know
what "SCADA" means? Am I allowed to get angry at you if you don't know?
--
73, Cecil http://www.qsl.net/w5dxp

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1962. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 00:41:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1f2c62$1_7@corp.newsgroups.com>
Source record: 111905

W7TI wrote:
> What is RG-400? Did a google search and found one reference but no
> details.

Got a Wirebook III from The Wireman? RG-400 is a 0.2" 50 ohm teflon coax
with a 1900V RF tolerance. It's all I ever use anymore inside the hamshack.
Great for four foot cables and baluns.
--
73, Cecil http://www.qsl.net/w5dxp

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1963. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 00:50:15 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <58buhvobnnf0302l5armbu8g820ovogth1@4ax.com>
Source record: 111906

I use a 325-watt Weller with the tip filed to a point that fits right
down into the holes. Works quickly and easily.

Dick - W6CCD

On Wed, 23 Jul 2003 16:54:18 -0700, W7TI <noway@nohow.com> wrote:

>On Wed, 23 Jul 2003 17:07:00 -0500, W5DXP <Cecil.A.Moore@ieee.org>
>wrote:
>
>>May I suggest RG-400 and screw-in adapters? You don't like soldering?
>>No soldering absolutely necessary except for the center pin.
>>--
>>73, Cecil http://www.qsl.net/w5dxp
>
>_____
>
>Actually, I love soldering. Been doing it for almost 50 years. What I
>don't like is soldering through the four little holes. IMO, a poor
>design to begin with.
>
>What is RG-400? Did a google search and found one reference but no
>details.

1964. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 01:13:21 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f1f3445_2@news1.prserv.net>
Source record: 111907

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f1efd8d_4@corp.newsgroups.com...
> Crazy George wrote:
> > So, where are these "repeaters" you blithely cited the existence of?
>
> They existed in the 60's. That's all I can tell you. After that, I became
> 100% digital at Intel Corp. Doesn't the present existence of 650K of web
> pages involving "Power Line Carrier" count?

In a word, NO. Not worth the paper they aren't written on. Next week, I am going to be doing some library research at a technical library, and I am going to scan through the issues of IRE Transactions on Power Equipment, or whatever the name was pre-IEEE, from 1950 to 1965 or so, and I'll get back to you. I already know the answer, and I think so do you. For your part, why don't you start a movement within IEEE to put their pre-1990 publications in their digital database?
--
Crazy George
Remove NO and SPAM from return address

> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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1965. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 01:39:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1f39eb$1_1@corp.newsgroups.com>
Source record: 111909

Crazy George wrote:
> Next week, I am
> going to be doing some library research at a technical library, and I am
> going to scan through the issues of IRE Transactions on Power Equipment, or
> whatever the name was pre-IEEE, ...

It was the American Institute of Electrical Engineers although I chose to
join the Institute of Radio Engineers instead, for obvious reasons. :-)

> ... from 1950 to 1965 or so, and I'll get back
> to you. I already know the answer, and I think so do you.

I assume 400 KHz Power Line Carrier is hardly anything like BPL which,
I assume, is a lot broader banded than that. Power companies use Power
Line Carrier equipment to control sub-stations from a central location.
They don't generally use it between the sub-station and residences so it
is usually not a problem for hams. But I have heard of power companies
using Power Line Carrier systems to read their meters under computer
control. Do you have any other specific questions? I'll try to dust off
my failing memory and answer them.
--
73, Cecil http://www.qsl.net/w5dxp

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1966. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 01:43:19 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307231743.1dd12301@posting.google.com>
Source record: 111908

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<20425-3F1EBBF7-43@storefull-2314.public.lawson.webtv.net>...
> Art Unwin wrote:
> "It is in this area that I view stagger tuning or coupling to be
> efficient in character."
>
> This is a struggle against nature. Like the double-tuned stagger
> frequency transformer, the wider the frequency separation, the less the
> coupling.

Richard it is no use bringing up the subject that you have told Art
e.t.c.
As far as I am concerned you do not have the faintest idea of what my
antenna consists of ...or..you don,t know what you are talking about
However you are in good company as the whole idea has been trashed by
the newsgroup and without dissention it was agreed that I have no
credability
Can't type either) So why are you bringing up the idea again of
antenna coupling?
That particular horse is dead.
You would be better off looking at your books and pulling out a
statement verbatum regarding a conjugate match or the date of Termans
birthday than trying to bait me on a subject where I have already
received a hiding from resident gurus and bypassers alike.

Art.

>
> Another item promotes coupling in a transformer. It is placement of the
> coils so they share flux. An opposite phenomenon is at work for Art, as
> I`ve told him for the nth time. A small loop has a null in its radiation
> perpendicular to the plane of the loop. Art`s loop shares the plane of
> his dipole. The loop is suspended form the dipole and actually shares
> conductor.
>
> The dipole has maximum desired radiation perpendicular to the plane
> containing the loop. At horizontal and low-angle directions to the
> earth, this is the direction of the loop`s null. No way could radiation
> from the loop reinforce dipole radiation.
>
> In a yagi, the reflector is tuned lower in frequency and the director is
> tuned higher in frequency than the driven element. The purpose of this
> detuning is to get proper phasing between the elements so that director
> directs and the reflector reflects and not vice versa. But, in the case
> of the yagi, radiation of all the rods is in the same plane that they

> share and that contains the desired direction of signal transmission /
> reception.
>
> In a dipole which shares conductor with one side of a suspended loop,
> the only possible loop contribution to the dipole`s radiation is
> straight up, or straignt down, or toward the ends of the dipole. This
> could help it approach an isotropic antenna more closely. The isotropic
> has about 2 db less gain than a dipole alone. Or, a slight gain toward
> the earth, the zenith, or the dipole ends might be realized, as stated
> before.
>
> Best regards, Richard Harrison, KB5WZI

1967. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 02:39:26 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F1F46DE.2E798F22@cwis.net>
Source record: 111910

Bill,
It really is better if a connector is installed as it's designed to be installed. It may not be the easiest way of doing it, but it's almost always the best way.
Having said that, I've found that using a propane torch is the easiest way I've found to put on a PL-259. Takes a little practice (and don't use MAP gas!), but not a problem even in high winds. It helps to pre-tin any adaptors, etc.
'Doc

1968. Re: 4NEC2 features wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 03:31:48 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F1F51F3.A14FFA87@gte.net>
Source record: 111911

Yuri Blanarovich wrote:

> Arie,
> One more thing comes to mind, it would be desirable to be able to use insulated
> wires in models. Typically house electrical insulated wire has about 5%
> shortening coefficient. I think it would suffice to enter the shortening
> coefficient (can be obtained by measurement). I believe NEC4 can accomodate
> that and could serve as an example how to do it.
> Also different material for elements within antenna, like copper (insulated)
> wire quad and aluminum Yagi elements.
>
> That's it besides transducer for the brain to "see" the design in my head and
> optimize/model it in 3D :-)
>
> Yuri, K3BU
>

Hi Yuri,
W4RNL has a very nice tech note on his site relating this shortening effect with respect to the thickness of the dielectric and its dielectric constant. I used this on my latest 20M Moxon and it came out right on the money.

Dale W4OP

1969. Re: phasing coils

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 03:58:29 UTC
From: n9xyp@hotmail.com
Message-ID: <9ff6c9fb.0307231958.563ceea5@posting.google.com>
Source record: 111912

Frank Jones (W6AJF) - Google is your friend

I was thinking about the coax collinear but I never could make them work.
I did find a reference about the velocity factor if the center being different from the sheild. This messed up the phase relationship.

It appear the original antenna this was copied from had the whole antenna potted in wax to fix that. Maybe build one out of the air dielectric coax I have in the garage?

I guess I'll just drag out the formulas for parallel line and stubs. Whip something out of copper pipe and the wife poly cutting board she don't use.

So, how does one mount a 10' copper pipe antenna to a mast? Beside on a dare....

Mike

1970. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 04:03:13 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <maqcnQANip8ax4KiXTWJiQ@comcast.com>
Source record: 111913

You could also try LMR240. Loss at 50MHz is only 0.1db/100 more than 213, but it is 0.24 diameter. Works with RG6/59 reducer. About $45/100 feeet. I have some connectors with shield soldered, some not. There is also a LMR240 Flex, which is really nice for patch cords, but costs a little more. I have put a KW through both of them at HF.

Tam/WB2TT
"W7TI" <noway@nohow.com> wrote in message
news:2cfuhvo8njaa1ou5mvg5aka1ildv00a1ec@4ax.com...
> On Wed, 23 Jul 2003 19:41:56 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> wrote:
>
> >Got a Wirebook III from The Wireman? RG-400 is a 0.2" 50 ohm teflon coax
> >with a 1900V RF tolerance. It's all I ever use anymore inside the
hamshack.
> >Great for four foot cables and baluns.
>
> --
>
> Sounds like nice stuff, but at $1.62 per foot... Hmmmmmm.
>
> --
> 73, bILL w7ti

1971. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 05:21:11 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307232121.5f6fa007@posting.google.com>
Source record: 111914

Allodoxaphobia <bit-bucket@config.com> wrote in message
news:<slrnbhtepc.1cdq.bit-bucket@localhost.config.com>...
> On Wed, 23 Jul 2003 05:36:07 -0000, Dave Platt hath writ:
> >
> > I've read recommendations that if you're going to solder a
> > nickel-plated PL-259, you should take a file and rough off the nickel
> > in the area around and in the holes, and on the adapter inside (if
> > present). The brass under the nickel will take the solder somewhat
> > more readily.
>
> Yep. I use a half-round to 'grind' the rims of the holes down to base
> metal before assy. Then, using a WAY HOT, HIGH WATT iron -- not a
> gun -- I get onto and off of each hole with solder as quickly as
> possible -- making sure I `fill` each hole completely.

Myself, I think using a high wattage gun is one of the most important
parts. It's hard to get them hot enough with a small 30-50?? watt gun.
To properly solder, you have to get the shell itself hot enough to
melt the solder. Otherwise, you have a cold joint. But, on the other
hand, you also don't want to sit there for 8 min trying to get it hot
enough, when in the meantime the coax melts into a blob. So you have
to get in and out fast. A hot gun is the only way. I've been using a
150 w for quite a few years and it seems big enough unless you are
outside in the wind. I do a lot of brazing with oxi-acetylene torches,
and follow the same rule. I use a lot of heat and have smooth clean
welds that also lets the solder flow back inside the joints by
capillary action. I rarely have to go back and redo welds. Maybe 1 out
of 80. And those are usually ones I have bad access to the backsides
of the pipe. The guys the don't use enough heat have rough, crappy
looking welds. Using too low a heat soldering ends up with the same
type of joints. A hot enough gun will let you solder even the cheapy
"hard to solder" connectors..:) MK

1972. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 06:18:38 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307232218.14616e65@posting.google.com>
Source record: 111915

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723110714.28226.00000487@mb-m24.aol.com>...
> BTW, looks like my message to prevent spam in my return address works two ways:
> one it reduced automated spam, two - there are two "noSaddams" dead as a door
> nail. Another egg in the face of the bitching DummycRATS! I hope they soon
> get/confirm the Big Papa Sodumb deadsky soon too.

Dunno, I think they still need to give Bin Doo-Doo a touch up. He
seems to still be slithering around somewhere. I consider him the
worst of the lot, considering his recent actions, and everyone seems
to have forgotten about his slimy carcass. Something occurred to me
recently. Bin Doo-Doo probably thought when he did the 9-11 thing that
we would all wilt over, whine and moan for a while, and all would
continue to be biz as usual in his part of the world. Probably
considered Sodamn Insane one of his close partners in crime. Probably
thought they would be out water skiiing about this time, celebrating
their crushing defeat of the dreaded yankee redneck infidel bastards.
But now his group is half toast after being given a healthy round of
air to ground enemas, and same for ole Sodamn. His days are numbered.
Bin Doo-Doo brought the wrath of Bush on the whole group of terrorist
deathmonglers and dicktaters. I bet Sodamn curses Bin Doo-Doo's name
when he hovers in his fortified double wide to attempt fitfull sleep
at night. Who wants to be next? Come on boys, lets spin the wheel and
get this show on the road before we are all broke. Making all those
high $$$$ missiles will boost the economy in certain parts of the
country. MK

1973. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 07:22:02 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <RSEe7iDak4H$EAPz@ifwtech.co.uk>
Source record: 111918

W7TI wrote:
>IMO, a poor design to begin with.

There is the alternative of the pressure-sleeve PL-259, which fits regular RG213 or RG58, and you assemble it by screwing down a nut. Only the centre conductor requires soldering.

"This is not your father's MIL cable clamp" as used on so many BNCs and Ns of US origin, which tears off the braid and pulls out easily. This one works - the whole cable will tear apart before it pulls out the rear of the plug. Pressure-sleeve BNCs and Ns are so much better, I won't ever buy the old MIL type any more.

More recently, PL-259s and cable jacks have become available with the pressure-sleeve clamp too, mainly through the Multicomp brand sold by Farnell in Britain. Try www.farnell.com/uk and search for order codes 724804, 724816 as examples. The product line includes plugs and cable jacks for RG213 and for RG58 - that's two separate sizes (no adaptor).

These connectors are more expensive, but they are the only ones that avoid the problems of heavy-duty soldering outdoors. For that situation they can be an absolute godsend.

(Well, there's also crimp, but crimp is one of those techniques that's useless unless it's done perfectly. The price of the correct tool to make a full hex crimp around RG213 will buy a lot of pressure-sleeve connectors. Also, the pressure-sleeve clamp is waterproof in its own right, which the crimp is not.)

Last time I posted this information, about two years ago, there was a lot of interest from the USA, so here's what I know.

Availability in the USA used to be poor... and may still be. The pressure sleeve clamp was invented by the British company Greenpar AFAIK, but was also licensed to G-E who used to make a PL-259 and may still do so - so G-E is one place to look.

Otherwise you have to follow the company takeover trail, to see where the technology went. Greenpar was bought by M/A-com and the idea seemed to disappear; then the M/A-com connector line was bought in turn by AMP and by Tyco.

The Greenpar name has recently resurfaced as a Tyco brand, and quite possibly the connectors have too. Farnell now stock a "Tyco Greenpar" PL-259 which is probably pressure-sleeve, and obviously will be available in the USA (but even more expensive than the Multicomp connector). Another possible lead in the USA is Newark, which is owned

by Farnell and is now beginning to stock some Multicomp parts.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

1974. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 09:50:39 UTC
From: Tom Wagner <tfwagner@snet.net>
Message-ID: <PZNTa.12180$0w2.3470634096@newssvr10.news.prodigy.com>
Source record: 111916

I use an 80 watt Weller iron. It holds far more
heat (not temperature) than my 250 watt soldering
gun. Because of the heat capacity of the iron,
the holes solder very quickly and easily. It is not
necessary to pre-tin the braid.

A 100 watt iron might be a little better, but they
are harder to find. Some hardware stores carry
the 80w Weller.

Tom - N1MM
Check out the N1MM Free Contest Logger at:
http://www.n1mm.com
http://groups.yahoo.com/group/N1MMLogger/
"W7TI" <noway@nohow.com> wrote in message
news:q6bthvs72qii2bb0n9j69n410evstcs88c@4ax.com...
> On Wed, 23 Jul 2003 19:33:18 -0500, Bob Miller
> <bxmiller@texas.netNOSPAM> wrote:
>
> >Get a 175 watt Weller, then you'll be able to solder it through the
> >four holes in just a few seconds, like it's designed for.
> >
> >Bob
> >k5qwg
>
> _____
>
> I have a 250 watt Weller (about 45 years old now) and soldering through
> the four holes is a pain, as well as being uncertain. Soldering the
> braid where it enters the connector can be done with a 40 watt iron,
> helping avoid damage to the coax.
>
> Give it a try, you might like it.
>
> --
> 73, Bill W7TI

1975. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 10:49:02 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f1fbaad$1_1@corp.newsgroups.com>
Source record: 111819

W5DXP wrote:

> Jim Kelley wrote:
>> You're arguing with me about it right now in another thread! :-)
>
> If you really believe that, Jim, you are *extremely* mentally ill.
> Go obtain some medication for your problem and get back to us.

My joke was apparently too subtle. It is impossible for me to be
reading this thread "right now" while arguing with Jim "right now"
on another thread. Sorry, it was a poor attempt at a play on the
words, "right now". I certainly don't think Jim is mentally ill.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

1976. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 13:48:46 UTC
From: Nisse <nisse@manqwr.se>
Message-ID: <3F1FE3BE.3846DBD5@manqwr.se>
Source record: 111820

This is rather amusing...
A debate how to attach PL-259.... Would'nt it be better if we finally
got rid of those aniquities (the only thing You can be sure of, it is not 50
ohm
characteristic impedance)...

/N.

W7TI wrote:

> On Wed, 23 Jul 2003 21:39:26 -0500, 'Doc <w5lz@cwis.net> wrote:
>
> >Bill,
> > It really is better if a connector is installed as it's
> >designed to be installed. It may not be the easiest way of
> >doing it, but it's almost always the best way.
> > Having said that, I've found that using a propane torch
> >is the easiest way I've found to put on a PL-259. Takes a
> >little practice (and don't use MAP gas!), but not a problem
> >even in high winds. It helps to pre-tin any adaptors, etc.
> > 'Doc
>
> ____
>
> You said "almost always the best way", and my experience would agree
> with that.
>
> Progress happens because someone, somewhere is looking for a better way.
>
> Try doing a connector or two my way and see what you think. IMO, it is
> easier to do as well as more reliable, partly because you can more
> completely inspect your work and partly because you can trim the braid
> much farther back from the pin, reducing the chance of shorts. The only
> drawback is the exposed braid, but an outdoor PL-259 should always be
> weatherproofed anyway, so nothing is really lost.
>
> --
> 73, Bill W7TI

1977. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 14:40:27 UTC
From: tdonaly@aol.com
Message-ID: <20030724104027.15209.00000323@mb-m13.aol.com>
Source record: 111821

Cecil wrote,
>
>My joke was apparently too subtle. It is impossible for me to be
>reading this thread "right now" while arguing with Jim "right now"
>on another thread. Sorry, it was a poor attempt at a play on the
>words, "right now". I certainly don't think Jim is mentally ill.
>--
>73, Cecil http://www.qsl.net/w5dxp
>
>
>

No, but he will be if he keeps arguing with you. Most of
the rest of us value our mental health too much to argue an
infinite thread with an obsessed Texan.
73,
Tom Donaly, KA6RUH

1978. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 15:33:12 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfou7o$gl9$1@titan.btinternet.com>
Source record: 111822

Cec, from where do you get all your energy?

Is it from fire water you have now stopped trading for buffalo hides from
the injuns?

Reg

1979. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 16:07:46 UTC
From: richardharrison@webtv.net
Message-ID: <4235-3F200452-134@storefull-2311.public.lawson.webtv.net>
Source record: 111823

Art Unwin wrote:
"As far as I am concerned you do not have the faintest idea what my antenna consists of ...or,,you don`t know what you are talking about."

How does Art`s antenna differ from Fig 10(A) on page 26-9 of the 19th edition of the ARRL Antenna Book?. In that figure, the input of the "T" is inductive until the series capacitance brings it into resonance.

The tuning section of Fig 10(A) forms a small loop. See Fig 4 on page 5-3 of the same Antenna Book for the small loop radiation pattern. Also, see Fig 12 on page 2-8 for the dipole radiation pattern. Note that lobes are perpendicular to the wire and plane of the dipole, and perpendicular to the axis of the small loop. There are nulls perpendicular to the wire and plane of the loop.

The loop`s null can`t help the dipole`s lobe. It can`t hurt it either, other than by radiating some energy that might otherwise have gone into the dipole. As the loop is small (< 0.1 lambda is one definition), its contribution to radiation may be small. As the loop size grows, so will its radiation, and its null will decline.

How does Art`s antenna differ from a T-matched dipole?

Best regards, Richard Harrison, KB5WZI

1980. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 17:27:14 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <lh40iv8m9998kpv3m363njc1kr29q1g52u@4ax.com>
Source record: 111824

On Tue, 22 Jul 2003 15:42:26 -0700, W7TI <noway@nohow.com> wrote:

>Maybe this has been done before, but it's the first time I've heard of
>this method.
>
I've used it here with no problems. Outside I use N connectors for
nearly all connections.

>While struggling as usual to attach some PL-259s to some Belden 9913F,
>it occurred to me that the four little holes for soldering the braid

For the purist connecting there helps keep the impedance correct, BUT
as you took the braid inside I would expect about the same.

Contrary to what some have said, I've not been able to see any bump
using a Time Domain Reflectometer (TDR) with that approach.

>were not really needed. Instead, I soldered the braid directly to the
>connector at the point where it entered. Picture at:
>
>www.dslextreme.com/users/teeaye/coax.jpg
>
>I soldered it all around the connector, although I suppose only one
>point would be ok.

All around is better

>
>The braid is exposed so it would need weatherproofing for outside use.
>But all in all, it seems to me to be far superior to trying to solder
>through the little holes. It's much stronger and you can easily see if
>you have a good connection.

When it comes to weather proofing, PL259s are not weather proof. You
just make it a little easier for the water to get in.

I use "flooded" heat shrink tube over the connector and out onto the
coax by about an inch and a half. I purchase it in 4' lengths at the
local electrical supply house. The flooding material is pretty much
the same stuff used in hot glue guns.

You have to remember to start shrinking the tube in the middle and
work out to the ends

>
>Also, only a small-wattage iron is needed. I used a 40-watt Weller,
>which is not hot enough doing it the normal way. There is less metal
>acting as a heat sink.

>
>Another advantage is you can trim the braid much farther back from where

Here you don't want to trim it back much father than the normal
installation.

I cut and trim to length, then tin the braid. If need be (and it
usually is) I file down the solder so the braid easily fits all the
way in to the proper position and I don't have to worry about
"whiskers".

>you strip the center conductor. This helps reduce the chances of a
>stray strand causing a short.
>
>The only drawback I can see would be if the coax were hanging down and
>swinging in the breeze - the solder could develop metal fatigue over
>time. On the other hand, the coax should be strain-relieved anyway,
>else it's just holding on by the four holes and the center conductor.

Yes, Yes, and no.
Yes, the solder will eventually fatigue.
Yes the connection should be supported, or strain relieved.
No, those little solder spots are an electrical connection, not to
support the cable.

Most of what little strength a pl259 has, comes from the jacket being
screwed down into the connector.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>Not much better, if at all.
>
>Comments?

1981. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 18:02:00 UTC
From: richardharrison@webtv.net
Message-ID: <4063-3F201F18-37@storefull-2318.public.lawson.webtv.net>
Source record: 111825

Cecil, W5DXP wrote:
"Do you know what "SCADA" means?"

In some circles, it means what`s lacking here, Supervisory Control And Data Acquisition.

Best regards, Richard Harrison, KB5WZI

1982. Re: Stuff Cecil would argue about

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 18:30:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gb90iv8hsknedam8qefpcpme3jr622nuja@4ax.com>
Source record: 111828

On Thu, 24 Jul 2003 13:02:00 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Cecil, W5DXP wrote:
>"Do you know what "SCADA" means?"
>
>In some circles, it means what`s lacking here, Supervisory Control And
>Data Acquisition.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

Good one.

73's
Richard Clark, KB7QHC

1983. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 20:15:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f20228d$1_2@corp-news.newsgroups.com>
Source record: 111826

Richard Harrison wrote:

> What does Terman say in Sec. 4-11?
>
> "The distance l1 from the load, and length "a" of the stub, are chosen
> that the reflected wave produced by the shunting impedance of the shunt
> line is equal in magnitude and opposite in phase to the reflected wave
> existing on the line at this point as a result of the reflection from
> the load impedance ZL, there is no reflected wave on the generator side
> of the stub line as a result of cancellation of the two reflected
> waves."
>
> Terman said about the same thing about cancellation of the reflected
> wave in a waveguide. Terman offered several methods to generate the
> offsetting wave in a waveguide, and there are several ways to generate a
> wave which produces cancellation on a transmission line, too.

Richard, does Terman say what happens to the intrinsic energy that
existed in the canceled waves before they were canceled?
--
73, Cecil, W5DXP

1984. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 20:22:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f202434_2@corp-news.newsgroups.com>
Source record: 111827

Reg Edwards wrote:
> Cec, from where do you get all your energy?

A congenital insatiable thirst for knowledge. I asked my
first grade teacher, "Why is one plus one equal to two?"
She didn't know. I finally got my answer years later when
I took a "Foundations of Mathematics" college course.
--
73, Cecil, W5DXP

1985. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 20:31:16 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307240456.6cc7dad8@posting.google.com>
Source record: 111829

Dr Slick.
When the term efficiency is used on this newsgroup
it always leads to dissention.
As Roy pointed out efficiency is a ratio between two factors
X and Y only. Unfortunately in this newsgroup
people have a tendency to use Y in their derivation of efficiency
which results in people talking past each other.
I suspect we have a bit of that in this thread
Have a great day
Art

Dkradio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0307231027.70a4800d@posting.google.com>...
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307230600.1cf7706f@posting.google.com>...
> > Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhsk4n5lamhs29@corp.supernews.com>...
> > > I hope you'll pardon me for amplifying this a little.
> > >
> > > If you put X watts into the primary of a transformer and extract Y watts
> > > from the secondary, the efficiency is Y/X by definition.
> >
> > Yes Roy. The specifics of what is being discussed is all important
> > when looking at answers as well as what terms are being used to
> > measure 'efficiency' and to what ends.
>
>
> Roy is correct. And if both transmit and receive antennas were
> directional Yagis pointed at each other instead of regular dipoles,
> the efficiency would go up.
>
>
>
> > As you are surely awawe I too look at antennas as transformers or
> > coupled circuits and thus the primary contributes very much in its own
> > way as far as radiation as does the secondary. Thus 'efficiency' as a
> > criteria of 'value'
> > is all important when using it as a term since as you point out it is
> > a ratio of two terms both of which have to be made very clear for the
> > term efficiency to be made clear
> > Thus in stagger tuning it is important to define your requirements in
> > terms of bandwidth (dual frequency radiation) or max gain (dual
> > radiators on the same frequency),the above bearing little difference
> > to old time receiver designwith multiple I.F. cans. It is in this

> > areana that I view stagger tuning or coupling
> > as being efficient in charactor. If I am incorrect in the above
> > assumptions I would welcome any correction from those well versed
> > inthe field.
> > Best regards
> > Art
> >
>
>
> Broadbandedness by itself is not a measure of efficiency. You
> may still be very inefficient, over many octaves!
>
>
> Slick
> > >
> > > If you put X watts into one antenna and extract Y watts from an antenna
> > > coupled to it, and measure the efficiency of the "transformer" the same
> > > way as you did the conventional transformer, you'll find it has lousy
> > > efficiency. Why? Because a goodly fraction of the power you applied to
> > > the "primary" antenna never gets to the "secondary" antenna because it's
> > > radiated instead. As far as the "secondary" is concerned, it might as
> > > well have been converted to heat.
> > >
> > > If you look at the impedance of the "primary" antenna, you'll find an
> > > excess of resistance -- just enough, in fact, to account for the "lost"
> > > (radiated) power.
> > >
> > > This isn't a statement about how well coupled antennas function as
> > > antennas, whose purpose is to radiate after all. It's a statement about
> > > how well they function as a transformer. Poorly.
> > >
> > > Roy Lewallen, W7EL
> > >
> > > Dr. Slick wrote:
> > > > aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
> > > >
> > > >>> 1. Two antennas (also called transducers) placed close together
> > > >>>actually can be considered a transformer, albeit a very inefficient
> > > >>>one.
> > > >>
> > > >>Humm...By antenna I assume it also means a radiator. This would
> > > >>suggest
> > > >>that a stagger tuned radiators would fall into the catagory discussed
> > > >>above.
> > > >>Now I have a problem with that statement, because I very much see it
> > > >>as a transformer which is VERY efficient and not as you stated "albiet
> > > >>a very inefficient one".
> > > >> Can you explain to me how a stagger tuned antenna migrate into
> > > >>inefficient radiators?

> > > >> Seems to me that Thevenin's theorem would show this as being
> > > >>incorrect !
> > > >>
> > > >
> > > >
> > > >
> > > > Well, two identical antennas spaced a few wavelengths apart can
> > > > be considered a transformer, but very inefficient compared to a "real"
> > > > transformer with identical primary and secondary turns, with an
> > > > appropriate toroid core. This would be because the core material will
> > > > increase the magnetic flux density, and will increase the coupling
> > > > between the two windings/transducers.
> > > >
> > > > Point is, the farther apart the antennas are, the less efficient
> > > > of a "transformer" they will be.
> > > >
> > > > I'm not familiar with stagger tuned antennas, although the name
> > > > would suggest that it is tuned for multiple resonances, so that the
> > > > antenna will be broadband.
> > > >
> > > >
> > > >
> > > > Slick

1986. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 20:31:38 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307240456.553b0b6a@posting.google.com>
Source record: 111830

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> > > > between the two windings/transducers.
> > > >
> > > > Point is, the farther apart the antennas are, the less efficient
> > > > of a "transformer" they will be.
> > > >
> > > > I'm not familiar with stagger tuned antennas, although the name
> > > > would suggest that it is tuned for multiple resonances, so that the
> > > > antenna will be broadband.
> > > >
> > > >
> > > >
> > > > Slick

1987. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 20:31:43 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307240456.3201a8cb@posting.google.com>
Source record: 111831

Dr Slick.
When the term efficiency is used on this newsgroup
it always leads to dissention.
As Roy pointed out efficiency is a ratio between two factors
X and Y only. Unfortunately in this newsgroup
people have a tendency to use Y in their derivation of efficiency
which results in people talking past each other.
I suspect we have a bit of that in this thread
Have a great day
Art

Dkradio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0307231027.70a4800d@posting.google.com>...
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307230600.1cf7706f@posting.google.com>...
> > Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhsk4n5lamhs29@corp.supernews.com>...
> > > I hope you'll pardon me for amplifying this a little.
> > >
> > > If you put X watts into the primary of a transformer and extract Y watts
> > > from the secondary, the efficiency is Y/X by definition.
> >
> > Yes Roy. The specifics of what is being discussed is all important
> > when looking at answers as well as what terms are being used to
> > measure 'efficiency' and to what ends.
>
>
> Roy is correct. And if both transmit and receive antennas were
> directional Yagis pointed at each other instead of regular dipoles,
> the efficiency would go up.
>
>
>
> > As you are surely awawe I too look at antennas as transformers or
> > coupled circuits and thus the primary contributes very much in its own
> > way as far as radiation as does the secondary. Thus 'efficiency' as a
> > criteria of 'value'
> > is all important when using it as a term since as you point out it is
> > a ratio of two terms both of which have to be made very clear for the
> > term efficiency to be made clear
> > Thus in stagger tuning it is important to define your requirements in
> > terms of bandwidth (dual frequency radiation) or max gain (dual
> > radiators on the same frequency),the above bearing little difference
> > to old time receiver designwith multiple I.F. cans. It is in this

> > areana that I view stagger tuning or coupling
> > as being efficient in charactor. If I am incorrect in the above
> > assumptions I would welcome any correction from those well versed
> > inthe field.
> > Best regards
> > Art
> >
>
>
> Broadbandedness by itself is not a measure of efficiency. You
> may still be very inefficient, over many octaves!
>
>
> Slick
> > >
> > > If you put X watts into one antenna and extract Y watts from an antenna
> > > coupled to it, and measure the efficiency of the "transformer" the same
> > > way as you did the conventional transformer, you'll find it has lousy
> > > efficiency. Why? Because a goodly fraction of the power you applied to
> > > the "primary" antenna never gets to the "secondary" antenna because it's
> > > radiated instead. As far as the "secondary" is concerned, it might as
> > > well have been converted to heat.
> > >
> > > If you look at the impedance of the "primary" antenna, you'll find an
> > > excess of resistance -- just enough, in fact, to account for the "lost"
> > > (radiated) power.
> > >
> > > This isn't a statement about how well coupled antennas function as
> > > antennas, whose purpose is to radiate after all. It's a statement about
> > > how well they function as a transformer. Poorly.
> > >
> > > Roy Lewallen, W7EL
> > >
> > > Dr. Slick wrote:
> > > > aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
> > > >
> > > >>> 1. Two antennas (also called transducers) placed close together
> > > >>>actually can be considered a transformer, albeit a very inefficient
> > > >>>one.
> > > >>
> > > >>Humm...By antenna I assume it also means a radiator. This would
> > > >>suggest
> > > >>that a stagger tuned radiators would fall into the catagory discussed
> > > >>above.
> > > >>Now I have a problem with that statement, because I very much see it
> > > >>as a transformer which is VERY efficient and not as you stated "albiet
> > > >>a very inefficient one".
> > > >> Can you explain to me how a stagger tuned antenna migrate into
> > > >>inefficient radiators?

> > > >> Seems to me that Thevenin's theorem would show this as being
> > > >>incorrect !
> > > >>
> > > >
> > > >
> > > >
> > > > Well, two identical antennas spaced a few wavelengths apart can
> > > > be considered a transformer, but very inefficient compared to a "real"
> > > > transformer with identical primary and secondary turns, with an
> > > > appropriate toroid core. This would be because the core material will
> > > > increase the magnetic flux density, and will increase the coupling
> > > > between the two windings/transducers.
> > > >
> > > > Point is, the farther apart the antennas are, the less efficient
> > > > of a "transformer" they will be.
> > > >
> > > > I'm not familiar with stagger tuned antennas, although the name
> > > > would suggest that it is tuned for multiple resonances, so that the
> > > > antenna will be broadband.
> > > >
> > > >
> > > >
> > > > Slick

1988. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 20:49:24 UTC
From: Mike Coslo <mjc5@psu.edu>
Message-ID: <3F204654.8020603@psu.edu>
Source record: 111833

Reg Edwards wrote:

> Here in Euro-side an amateur radio ticket can be obtained without ever
> having heard of it. And what with present educational standards that's
> nearly all of us.
>
> The trouble with Guru's displaying their knowledge on this newsgroup is
> failure to appreciate the technical standing of their 'pupils'. Yet as often
> as not the manner in which questions are asked are a dead giveaway. For a
> reply to be of value it is necessary for the Guru to 'tune in' to the
> recipient, ie., become resonant in same sort of language.
>
> Too seldom is any thought given to it. As a result I would guess many
> questioners become so confused or overloaded with haggling between the
> 'experts' they don't bother reading to the end of the thread, possibly to
> consider packing up the hobby. It is impossible for a novice in a particular
> subject to distinguish wheat from chaff, or to choose between one old-wive's
> tale and another. Confusion reigns!

My assessment as one of the "less washed" is that I can kind of
understand some of what is being argued.

But too much pouncing on minutaia, too much of what sounds like the
antagonists saying the same thing in a different way, and too much
personal junk all over the place, and it ends up doing everyone no good
at all, especially the antagonists. But of course, it doesn't really
matter what I think. I suspect that despite some aggravation and
digestive tract angst, they are enjoying it.

In the end, it is just a Warholesqe repetitive, stretched out artwork.

> So KISS ! In plain unabbreviated English.

Or (ironically enough -- Occam's Razor!!-- 8^)

- Mike KB3EIA -

1989. SGC Tuners with Dipoles ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 20:49:49 UTC
From: 3518693@mail.com
Message-ID: <740cebc3.0307240520.206f896b@posting.google.com>
Source record: 111832

Hi,

Does anyone use an SGC tuner (coupler) with a dipole, and if so, how do you have it set up. I was thinking of the tuner at the base of the tree, 60' of ladder line up the tree, then split into the dipole. I know most use these tuners for longwires or with whips, but I am looking for info and experiences on dipole configurations.

Thanks in advance.

MW

1990. Re: SGC Tuners with Dipoles ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 21:03:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u4i0iv8smqt1gmk67jmnmjisa6dl1n8crl@4ax.com>
Source record: 111834

On 24 Jul 2003 13:49:49 -0700, 3518693@mail.com (M Wilson) wrote:

>Hi,
>
>Does anyone use an SGC tuner (coupler) with a dipole, and if so, how
>do you have it set up. I was thinking of the tuner at the base of the
>tree, 60' of ladder line up the tree, then split into the dipole. I
>know most use these tuners for longwires or with whips, but I am
>looking for info and experiences on dipole configurations.
>
>Thanks in advance.
>
>MW

Hi OM,

You might want to put ferrite chokes on both the coax feed into the
SGC and around its control lines as well. There is a definite
possibility of common mode on the line (hence the chokes on the lines
back to your shack) and some blurring of the usual directionality.

73's
Richard Clark, KB7QHC

1991. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 21:46:57 UTC
From: joe <joe_camel@camel.org>
Message-ID: <3F2053CF.AC81F169@camel.org>
Source record: 111835

Yup, just takes a little time, they can run they can hide but one day they will get tired
of running and they will be TU.

Can't figure out why both sons were together on the run ?

Kind of dumb unless they knew their days were numbered.

Never forget our troops, past and present and our Sept. 11 victims.

joe

Yuri wrote:

> BTW, looks like my message to prevent spam in my return address works two ways:
> one it reduced automated spam, two - there are two "noSaddams" dead as a door
> nail. Another egg in the face of the bitching DummycRATS! I hope they soon
> get/confirm the Big Papa Sodumb deadsky soon too.
>
> Bada noSaddam BUm BUm
>
> (My antennas sleep better :-)

1992. Need help with a Comet 6 meter beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 21:55:18 UTC
From: thompson@mindspring.com
Message-ID: <bfpk78$c6l$1@slb6.atl.mindspring.net>
Source record: 111836

If anyone is familiar with the Comet (from Japan) 4 element 6 meter beam
please contact me via direct e-mail.

73 Dave K4JRB
thompson@mindspring.com

1993. BPL pollution ☐ file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 21:55:33 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307240616.648f1f00@posting.google.com>
Source record: 111837
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

BPL pollution ï¿½ please file reply comments by August 6 (the FCC site tends to go down close to deadlines so try and post in plenty of time).

The reply phase enables us to respond to the comments from the BPL lobbyists (not to make new comments).

Good reply comments examples are here;
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286932
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286161
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286102
http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287007

The comments of the BPL lobbyists can be found here;
Cinergy
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284577

PPL Telecom
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284575

Current Technologies
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284570

Electric Broadband
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284566

United Power Line Council
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284754

Southern Linc
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284561

Amperion
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284558

xG Technology, LLC
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284528

Progress Energy, Inc
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284481

Power Line Communications Association
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284549

HomePlug Powerline Alliance
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284554

POWERWAN, INC
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284548

Ameren Energy Communications Inc
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284552
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284553

Ambient Corporation
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284539

Main.net Communications Ltd
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284546

HomePlug Powerline Alliance
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284554

Intellon Corporation
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284532

To file, go here;
http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi
"Proceeding" field, enter "03-104"
"Document Type" select "Reply to comments"

1994. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 21:58:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f205790_1@corp.newsgroups.com>
Source record: 111838

Jim Kelley wrote:
>
> W5DXP wrote:
>>Such a bold-faced lie. I have argued loud and long with Peter (and
>>others) that reflected traveling waves are alive and well during the
>>steady-state. Peter will (hopefully) jump in and verify that fact.
>
> You're arguing with me about it right now in another thread! :-)

The statement, "Reflected traveling waves disappear in the steady state",
means to me that the set of reflected traveling waves is null in the
steady-state - which is a statement that I never made.

In a system with a mismatched load, reflected traveling waves always
exist and I have NEVER said otherwise.

Semantic tricks and traps never prove anything. They just obfuscate.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

1995. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:07:07 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030724180707.24575.00000665@mb-m28.aol.com>
Source record: 111839

>
>Reg Edwards wrote:
>> Cec, from where do you get all your energy?
>

Simple - from reflected and collected waves, and rest converted to infrared
energy not radiated by the heat sink. :-)

>A congenital insatiable thirst for knowledge. I asked my
>first grade teacher, "Why is one plus one equal to two?"
>She didn't know. I finally got my answer years later when
>I took a "Foundations of Mathematics" college course.
>--
>73, Cecil, W5DXP
>

That's where its coming from!
The only problem is that the more we learn we find out that we know less and
still die stupid.

Bada 3BUm

1996. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:12:48 UTC
From: richardharrison@webtv.net
Message-ID: <4061-3F2059E0-171@storefull-2318.public.lawson.webtv.net>
Source record: 111841

Cecil, W5DXP wrote:
"Trouble is, Terman didn`t say anything about what happens to the intrinsic energy that existed in the waves before they were cancelled."

It is in there. The waves go away.

Terman said:
"---there is no reflected wave on the generator side of the stub (the reflected wave produced by the shunting impedance of the shunt line is equal in magnitude and opposite in phase to the reflected wave existing on the line as a result of the reflection from the load impedance ZL)---."

It is clear that the energy reflected from the load side of the junction is neutralized by a deliberately reflected equal and opposite energy from a stub, strategically sized and placed. Terman says the reflected energies cancel. Terman provides formulas and a table for this execution. Repeating for emphasis and illustration, Terman says no reflection exists on the generator side of the junction. The load takes power accorging to ZL. It doesn`t avccept any extra energy.

Equal and opposite reflected energies at the junction are a short. The energy can`t disappear. It does not go back toward the load. Half has already been there. The other half has alredy been reflected by Zstub. Only one route is left to the reflected energy, but Terman says there`s no reflection on the generator side of the junction. Your Bird wattmeter won`t see any reflected power. What this says is that the stub produces an impedance match and the incident energy becomes the same as the generator output and load energies.

Best regards, Richard Harrison, KB5WZI

1997. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:14:34 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030724181434.24575.00000666@mb-m28.aol.com>
Source record: 111840

>
>Can't figure out why both sons were together on the run ?

Probably because they didn't trust each other in transporting $50 mil, or waiting for some OK to move outside YI. Looks like they trusted their host, who was apparently Saddams cousin, but was locked up before. What a way to get even! If Sodumb is alive or dead, they probably hinted something to their host or was picked up by surveilance gadgets. Maybe daddy is not far away. Lets hope, so I can change to "noBin".

Yuri

1998. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:28:21 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vi0ne27g4mb555@corp.supernews.com>
Source record: 111842

they're called "evanescent waves"
get a book

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:4061-3F2059E0-171@storefull-yada

> It is in there. The waves go away.
>
> Terman said:
blah blah>

1999. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:31:28 UTC
From: Dave <hnldc10take@thisoutworldnet.att.net>
Message-ID: <47ZTa.70076$3o3.4692436@bgtnsc05-news.ops.worldnet.att.net>
Source record: 111843

Bob,

Thanks.

Dave
"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
news:mi97hvgecbfvrp3oq3ns3kl9k0suhtbdg1@4ax.com...
> On Sat, 12 Jul 2003 16:19:15 GMT, "Dave Mundell"
> <hnldc10@worldnet.att.net> wrote:
>
> >This is probably not the newgroup I need to be on, but perhaps someone
could
> >point me to one better suited for my question.
> >
> >I want to buy a portable AM radio that will receive a distant station
that
> >is close (in frequency) to a nearby station. The radio in my car does
this
> >just fine, but not any of the portable radios I've tried. I. The guy at
> >Radio Shack told me I needed a radio with a digital tuner, so I bought
one.
> >Didn't work so I took it back. The display was digital; I don't know if
> >anything else was. I had similar results at Circuit City and Best Buy.
The
> >clerks at these places appear to be clueless.
> >
> >Appreciate any help.
> >
> >Dave
> >
>
> The Select-A-Tenna tuning loop from C.Crane might help. Go to
> http://www.ccrane.com/
>
> They also sell the GE Super radio there.
>
> You can also just call them -- they sorta specialize in long distance
> AM listening.
>
> Bob
> k5qwg
>
>

2000. Re: BPL pollution ☐ file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:34:52 UTC
From: Scott Unit 69 <scott_unit_69@yahoo.moc>
Message-ID: <3F205F0C.6D9FCF1B@yahoo.moc>
Source record: 111844
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

For anyone that wants to save their radio waves from an RF intrusion
of the greedy type, read on.

This is much more important then the CW issue.
This is a real problem in the making for ALL RADIO USERS!!!

Write your congressperson, write the chairman of the FCC, write letters
to the editors. Speak loudly. Speak often against BPL. Do not take this
issue lightly. Do not assume someone else will do it for you.

Our radio waves are in JEOPARDY!!!

Rob Kemp wrote:
>
> BPL pollution ï¿½ please file reply comments by August 6 (the FCC site
> tends to go down close to deadlines so try and post in plenty of
> time).
>
> The reply phase enables us to respond to the comments from the BPL
> lobbyists (not to make new comments).
>
> Good reply comments examples are here;
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286932
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286161
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286102
> http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287007
>
> The comments of the BPL lobbyists can be found here;
> Cinergy
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284577
>
> PPL Telecom
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284575
>
> Current Technologies
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284570
>
> Electric Broadband

>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284566
>
> United Power Line Council
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284754
>
> Southern Linc
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284561
>
> Amperion
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284558
>
> xG Technology, LLC
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284528
>
> Progress Energy, Inc
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284481
>
> Power Line Communications Association
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284549
>
> HomePlug Powerline Alliance
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284554
>
> POWERWAN, INC
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284548
>
> Ameren Energy Communications Inc
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284552
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284553
>
> Ambient Corporation
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284539
>
> Main.net Communications Ltd
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284546
>
> HomePlug Powerline Alliance

>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284554
>
> Intellon Corporation
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514284532
>
> To file, go here;
> http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi
> "Proceeding" field, enter "03-104"
> "Document Type" select "Reply to comments"

2001. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:38:12 UTC
From: Brenda Ann <brendad@shinbiro.com>
Message-ID: <bfpkv4srq1@news1.kornet.net>
Source record: 111845
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

"Scott Unit 69" <scott_unit_69@yahoo.moc> wrote in message
news:3F205F0C.6D9FCF1B@yahoo.moc...
> For anyone that wants to save their radio waves from an RF intrusion
> of the greedy type, read on.
>
> This is much more important then the CW issue.
> This is a real problem in the making for ALL RADIO USERS!!!

Talk about irony... if BPL goes through, there's a good chance that only CW
will be able to punch through it... : |

2002. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:52:23 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfpnv7$31s$1@hercules.btinternet.com>
Source record: 111846

Mike sez -
> I suspect that despite some aggravation and
> digestive tract angst, they are enjoying it.

==========

Mike, you are undoubtedly correct. If you ask a man why he keeps banging his head with a hammer he will reply that he likes the feeling when he stops.

To put it in engineering terms, all living and dead materials take the line of least resistance as perceived by their senses at the present instant of time. The result is an unending drunken "Monte-Carlo" walk.

At MY present instant in time I am about to pour another glass of delicate Chinese "Great Wall" white wine. If the disused coal mine under this house, a consequence of the industrial revolution, doesn't fall in I may yet survive to enjoy it.

There are an infinite number of ways our 'pleasure centers' make good use of amateur radio. Between them Cecil and Co. know them all !

Reg, G4FGQ

2003. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 22:54:22 UTC
From: Scott Unit 69 <scott_unit_69@yahoo.moc>
Message-ID: <3F20639E.610EFE55@yahoo.moc>
Source record: 111847
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

> > For anyone that wants to save their radio waves from an RF intrusion
> > of the greedy type, read on.
> >
> > This is much more important then the CW issue.
> > This is a real problem in the making for ALL RADIO USERS!!!
>
> Talk about irony... if BPL goes through, there's a good chance that only CW
> will be able to punch through it... : |

Just make sure to key your elements on their carrier frequencies.

2004. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 23:40:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <atq0ivkvddq0of1ng70a1tu84e02k8q3u5@4ax.com>
Source record: 111848

On Thu, 24 Jul 2003 21:46:57 GMT, joe <joe_camel@camel.org> wrote:

>Never forget our troops, past and present and our Sept. 11 victims.
>
>joe
>

Hi Joe,

Write the Republican Guard and ask them why:

1. They refuse to extend $6000 in death benefits to GI's ("An
unnecessary diversion of resources, Bushï¿½s budget people sniffed.");
2. They want to roll back recent modest increases in monthly
imminent-danger pay (from $225 to $150);
3. They want to cut family-separation allowance (from $250 to $100)
for troops getting shot at in combat zones;
4. They can't seem to find time to make progress on minor tax
provisions that would be a boon to military homeowners;
5. They don't care about easing residency rules for service members
to qualify for capital-gains exemptions when selling a home;
6. They also proposed capping raises for E-1s, E-2s and O-1s at 2
percent;
7. $9.2 billion military construction request for 2004, which was set
a full $1.5 billion below this year's budget;

As the Army Times has noted about the Bush White House's support of
the troops:
"President Bush, the commander in chief himself, rode a Navy jet
to the aircraft carrier Lincoln to bask in the reflective glow of some
of the brave Americans who helped oust Saddam Hussein.
"Money talks -- and we all know what walks."

73's
Richard Clark, KB7QHC

2005. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 23:57:31 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfprp0gjp1@slb2.atl.mindspring.net>
Source record: 111849
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

"Scott Unit 69" <scott_unit_69@yahoo.moc> wrote in message
news:3F20639E.610EFE55@yahoo.moc...
> > > For anyone that wants to save their radio waves from an RF intrusion
> > > of the greedy type, read on.
> > >
> > > This is much more important then the CW issue.
> > > This is a real problem in the making for ALL RADIO USERS!!!
> >
> > Talk about irony... if BPL goes through, there's a good chance that only
CW
> > will be able to punch through it... : |
>
>
> Just make sure to key your elements on their carrier frequencies.

That makes no sense at all... What is 'key your elements' ?

Do you mean to set your carrier frequency to the carrier frequencies of the
interfering BPL signal? If so say so.

Dan/W4NTI

2006. Re: Question for Roy Lewallen

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-24 23:58:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2073be$1_5@corp.newsgroups.com>
Source record: 111850

Yuri Blanarovich wrote:
> The only problem is that the more we learn we find out that we know less and
> still die stupid.

Someone said we specialize to the extent that we know more and more
about less and less and wind up knowing everything about nothing.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2007. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 00:05:50 UTC
From: Scott Unit 69 <scott_unit_69@yahoo.moc>
Message-ID: <3F20745E.43876A6@yahoo.moc>
Source record: 111851
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

> That makes no sense at all... What is 'key your elements' ?
>
> Do you mean to set your carrier frequency to the carrier frequencies of the
> interfering BPL signal? If so say so.

"elements" as in the individual di's and dah's the make up each character.

I've been looking at the .gif from Texas Star, and have already learned
to copy a few characters. The first one I learned is "3". All the calls
here have it. Also "k" and a few more in my call.

dah-di-dah dah-dah-di-dah?

I figured with my musical background, it would be easy. I just don't like
you guys trying to force feed it to us. It won't look good on your shoes. <:

http://www.texasstar.com/code.gif

2008. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 00:06:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f207597$1_5@corp.newsgroups.com>
Source record: 111854

Richard Harrison wrote:
> Terman says the reflected energies cancel.

Does he define, "cancel"? Energy components cannot cease to exist.
I suspect he means they engage in destructive interference which
requires a constructive interference elsewhere according to Hecht.

> Equal and opposite reflected energies at the junction are a short.

A short takes the voltage to zero and doubles the current. Are you
sure that is what happens during wave cancellation?

> The
> energy can`t disappear. It does not go back toward the load. Half has
> already been there. The other half has alredy been reflected by Zstub.
> Only one route is left to the reflected energy, but Terman says there`s
> no reflection on the generator side of the junction. Your Bird wattmeter
> won`t see any reflected power. What this says is that the stub produces
> an impedance match and the incident energy becomes the same as the
> generator output and load energies.

Would you please publish an example?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2009. CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 00:07:51 UTC
From: Scott Unit 69 <scott_unit_69@yahoo.moc>
Message-ID: <3F2074D7.37980608@yahoo.moc>
Source record: 111852
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

Scott Unit 69 wrote:
>
> > That makes no sense at all... What is 'key your elements' ?
> >
> > Do you mean to set your carrier frequency to the carrier frequencies of the
> > interfering BPL signal? If so say so.
>
> "elements" as in the individual di's and dah's the make up each character.
>
> I've been looking at the .gif from Texas Star, and have already learned
> to copy a few characters. The first one I learned is "3". All the calls
> here have it. Also "k" and a few more in my call.
>
> dah-di-dah dah-dah-di-dah?

Not K-Q...CQ...

dah-di-dah-di dah-dah-di-dah?

> I figured with my musical background, it would be easy. I just don't like
> you guys trying to force feed it to us. It won't look good on your shoes. <:
>
> http://www.texasstar.com/code.gif

2010. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 00:10:20 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <Mz_Ta.124022$sY2.55949@rwcrnsc51.ops.asp.att.net>
Source record: 111853

Another thing that you can be sure of. Rarely does it matter.
"Nisse" <nisse@manqwr.se> wrote in message
news:3F1FE3BE.3846DBD5@manqwr.se...
> (the only thing You can be sure of, it is not 50
> ohm
> characteristic impedance)...
>
>

2011. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 00:12:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2076f5_5@corp.newsgroups.com>
Source record: 111855

H. Adam Stevens wrote:
> they're called "evanescent waves" get a book

In one-dimensional transmission lines?
--
73, Cecil http://www.qsl.net/w5dxp

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2012. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 00:42:05 UTC
From: richardharrison@webtv.net
Message-ID: <24920-3F207CDD-70@storefull-2313.public.lawson.webtv.net>
Source record: 111856

H. Stevens wrote:
"they`re called evanescent waves".

Sure, McArthur should have said:
"Old soldiers never die. They just evanesce.

Best regards, Richard Harrison, KB5WZI

2013. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 01:29:37 UTC
From: richardharrison@webtv.net
Message-ID: <4235-3F208801-181@storefull-2311.public.lawson.webtv.net>
Source record: 111859

Cecil, W5DXP wrote:
"What does Terman say in Sec. 4-11?"

I gave a verbatim response from 4-11 at 11:03am on Jul. 17, 2003.

I`ll add the footnote from page 109:
"Another way of expressing this situation is to say that the stub position and length are so selected that the input impedance of the line (l1) shunted by the input impedance of the stub-line (a) will equal the characteristic impedance Zo." (l1 is the length of line between the stub and ZL. Fig. 4-17 provides position and length of the stub vs. SWR.

The conclusion is that a match is achieved so there is no reflection on the transmission line. The match has eliminated the reflection which was there during the transistion period, but no longer appears there during the steady state. Your Bird wattmeter will show a forward power but no reflected power because the load with its stub provides a match to the transmission line.

Best regards, Richard Harrison, KB5WZI

2014. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 01:31:17 UTC
From: Hank Oredson <horedson@att.net>
Message-ID: <FL%Ta.71364$0v4.4760576@bgtnsc04-news.ops.worldnet.att.net>
Source record: 111857
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

<Moparholic@hotmailnospam.com> wrote in message
news:20030724190005.878$ri@newsreader.com...
> Scott Unit 69 <scott_unit_69@yahoo.moc> wrote:
> > > > > For anyone that wants to save their radio waves from an RF intrusion
> > > > > of the greedy type, read on.
> > > > >
> > > > > This is much more important then the CW issue.
> > > > > This is a real problem in the making for ALL RADIO USERS!!!
> > > >
> > > > Talk about irony... if BPL goes through, there's a good chance that
> > > > only CW will be able to punch through it... : |
> > >
> > > Just make sure to key your elements on their carrier frequencies.
> > >
> > Just key the 30-L1.

Will a QRO HF2500DX work ok for this?

--

... Hank

Hank: http://horedson.home.att.net
W0RLI: http://w0rli.home.att.net

2015. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 01:38:03 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bfq1ltmcp1@slb2.atl.mindspring.net>
Source record: 111858

Mark:

[snip]
> Myself, I think using a high wattage gun is one of the most important
> parts. It's hard to get them hot enough with a small 30-50?? watt gun.
> To properly solder, you have to get the shell itself hot enough to
> melt the solder. Otherwise, you have a cold joint. But, on the other
> hand, you also don't want to sit there for 8 min trying to get it hot
> enough, when in the meantime the coax melts into a blob. So you have
> to get in and out fast. A hot gun is the only way. I've been using a
> 150 w for quite a few years and it seems big enough unless you are
> outside in the wind.
[snip]

Agreed!

If you are just getting a new iron for coax connector work, go for a big
fat 200 Watt job. It not only gets the temperature correct for perfect
joints,
but because it is big it can supply a lot of heat quickly without
temperature
drop and that's the secret to great PL259 connector soldering jobs.

The 200 Watts ensures that you can do connectors quickly and
with quality even out doors on field day with the wind blowing.

Dont' fuss, don't worry...

Just do it right!

A Big Fat 200 Watt iron makes soldering coax to PL259's dead simple!

--
Peter K1PO
Indialantic By-the-Sea, FL.

2016. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 01:46:32 UTC
From: k9sqg@aol.com
Message-ID: <20030724214632.20076.00000457@mb-m29.aol.com>
Source record: 111860

Personally, I've had the best luck with a 100-200 watt iron for soldering the shell. The iron, assuming it has a heavy tip, has enough heat capacity to do the job quickly. With a soldering gun, even a 150 or 200 watt gun, the tip just doesn't have enough thermal capacity to do the job as quickly. But, whatever works is fine.

73s,

Evan

2017. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 02:10:41 UTC
From: richardharrison@webtv.net
Message-ID: <4235-3F2091A1-185@storefull-2311.public.lawson.webtv.net>
Source record: 111862

Cecil, W5DXP wrote:
"Would you publish an example?"

I am error prone as anyone reading many of my postings may attest. The 1955 edition of Terman`s "Electronic and Radio Engineering" is the culmination of about 25 or more years of Terman`s work which was checked, rechecked, then checked again. It`s stood the test of time ever since its publication too. In Sect. 4-11 are answers to questions of impedance matching to transmission lines.

I think Terman should be consulted straight away for a simple logical cause of no reflections. It is called impedance matching. The match does away with reflections.

Best regards, Richard Harrison, KB5WZI

2018. Re: phasing coils

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 03:06:16 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307240901.677fb197@posting.google.com>
Source record: 111863

n9xyp@hotmail.com (Mike) wrote in message
news:<9ff6c9fb.0307231958.563ceea5@posting.google.com>...
> Frank Jones (W6AJF) - Google is your friend
>
> I was thinking about the coax collinear but I never could make them
> work.
> I did find a reference about the velocity factor if the center being
> different from the sheild. This messed up the phase relationship.
>
> It appear the original antenna this was copied from had the whole
> antenna potted in wax to fix that. Maybe build one out of the air
> dielectric coax I have in the garage?

The coaxial collinear works fine if done properly. You do NOT have to put the thing in wax to make it work. I wrote a paper on how to do it properly, but the key is to use sections 1/2 wave long taking into account the VF of the line, so that the voltage across each gap between adjacent sections is the same, and all in phase. The feedpoint impedance will be somewhat reactive since the elements are shorter than a half-wave, and the impedance will depend on the number of sections (since they are all fed in parallel, and there's a mutual impedance to consider), but you just provide the proper matching network for that, and you provide proper decoupling from the feedline. It's easy to put together an eznec or similar model to show that it works fine in air, no wax needed. And it works in practice as well as in theory.

The old ARRL writeup on the coax collinear was rather messed up, and my lack of success building them a couple times led me to think it through much more carefully and learn HOW to do it.

Cheers,
Tom

2019. Re: 4NEC2 features wanted and elctrical length

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 03:13:09 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030724231309.24575.00000677@mb-m28.aol.com>
Source record: 111864

Howdy Arie and fans,

Dale W4OP, found the link to W4RNL dissertation on modeling insulated wires at
http://www.cebik.com/amod/amod50.html
which shows how NEC4 engine considers insulated wires.

Among other things on the page I have found that I was not of the rocker after all, when I was talking about the "electrical length" of conductors used in the antenna. I was "grounded" by some NG purists that IEEE dictionary or reference books do not use or mention that term. To me it made perfect sense, just as with coax and feedlines. If we are looking for the resonant or corresponding electrical length of the "wire" we know that we can end up with different physical length for the same frequency between the thick tubing and thin wire. This is important especially when dealing with parasitic arrays, where resonant or electrical length is important and physical length can be then derived from it to maintain proper function of the array.

Here is what W4RNL 'splains also:
<<For a long time, antenna builders have been aware that insulated antenna element wire has a velocity factor. The electrical length of an insulated wire will be longer than the physical length to a degree that depends upon the type and thickness of insulation. Expressed from a different perspective, a resonant dipole for some given frequency and wire diameter will be shorter if the wire is insulated than it will be if the wire is bare. How much shorter the insulated dipole will be depends on the insulation. >>

So feel free to use the term, no need for royalties.
I feel not SoDumb :-)

Yuri, K3BU

2020. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 03:33:17 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfq8ds$hs7$1@titan.btinternet.com>
Source record: 111866

Tuners don't have specs. The sales blurb NEVER tells prospective customers what they really need to know - just the maximum setting values of the tuning capacitors in pF and of the coil inductance in microhenries. Its too late to find out the hard way after you've bought the useless thing.

Reg, G4FGQ

2021. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 03:33:55 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <Gy1Ua.3251$5b7.2798@lakeread01>
Source record: 111865

As they say at the Army sniper school:

You can run but, you'll just die tired.

--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64
"joe" <joe_camel@camel.org> wrote in message
news:3F2053CF.AC81F169@camel.org...
> Yup, just takes a little time, they can run they can hide but one day they
will get
> tired
> of running and they will be TU.
>
> Can't figure out why both sons were together on the run ?
>
> Kind of dumb unless they knew their days were numbered.
>
> Never forget our troops, past and present and our Sept. 11 victims.
>
> joe
>
> Yuri wrote:
>
> > BTW, looks like my message to prevent spam in my return address works
two ways:
> > one it reduced automated spam, two - there are two "noSaddams" dead as a
door
> > nail. Another egg in the face of the bitching DummycRATS! I hope they
soon
> > get/confirm the Big Papa Sodumb deadsky soon too.
> >
> > Bada noSaddam BUm BUm
> >
> > (My antennas sleep better :-)
>

2022. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 03:34:31 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f20a659$1_2@corp.newsgroups.com>
Source record: 111867

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "Would you publish an example?"
>
> I am error prone as anyone reading many of my postings may attest. The
> 1955 edition of Terman`s "Electronic and Radio Engineering" is the
> culmination of about 25 or more years of Terman`s work which was
> checked, rechecked, then checked again. It`s stood the test of time ever
> since its publication too. In Sect. 4-11 are answers to questions of
> impedance matching to transmission lines.

I'll look up the book next time I am at Texas A&M.

> I think Terman should be consulted straight away for a simple logical
> cause of no reflections. It is called impedance matching. The match does
> away with reflections.

Not directed at Richard, but I've seen the following logic used
often with EM waves.

What causes the match? The cancellation of reflections.

What causes the cancellation of reflections? The match.

Does anyone else detect the circular logic problem in the above?

Another one:

'rho' is zero because there are no reflections.

There are no reflections because 'rho' is zero.
--
73, Cecil http://www.qsl.net/w5dxp

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2023. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 04:03:40 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307242003.5df90f48@posting.google.com>
Source record: 111868

Richard,
When it comes to looking up books for quotations
you do a good enough job to be a librarian, but I am unaware
of any instance where a librarian was promoted to the engineering
section on a project basis. Each of the instances that you quote
are simple and direct..... as long as particular conditions are
followed.
When you strayed from your books to combine two situations it would
be wise for you to analyse the new situation to check for changes
in conditions. Unfortuately for you this will not be neatly laid out
in your books
In the case of a so called magnetic loop there are many conditions
to be met to ensure a figure 8 radiation pattern, with or without
deep nulls.
Thus just any old loop in any sort of conditions such as being
coupled to another object or not uniform in cross section e.t.c.
is not the same as the conditions that you referenced in the
handbook thus statements that regurgitate may well not now apply.
It is a pity that you do not have a interest in computor programs
or an interest in using one because if you did you could add to
your experience without the need of buying another book.

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<4235-3F200452-134@storefull-2311.public.lawson.webtv.net>...
> Art Unwin wrote:
> "As far as I am concerned you do not have the faintest idea what my
> antenna consists of ...or,,you don`t know what you are talking about."
>
> How does Art`s antenna differ from Fig 10(A) on page 26-9 of the 19th
> edition of the ARRL Antenna Book?. In that figure, the input of the "T"
> is inductive until the series capacitance brings it into resonance.
>
> The tuning section of Fig 10(A) forms a small loop. See Fig 4 on page
> 5-3 of the same Antenna Book for the small loop radiation pattern. Also,
> see Fig 12 on page 2-8 for the dipole radiation pattern. Note that lobes
> are perpendicular to the wire and plane of the dipole, and perpendicular
> to the axis of the small loop. There are nulls perpendicular to the wire
> and plane of the loop.
>
> The loop`s null can`t help the dipole`s lobe. It can`t hurt it either,
> other than by radiating some energy that might otherwise have gone into
> the dipole. As the loop is small (< 0.1 lambda is one definition), its
> contribution to radiation may be small. As the loop size grows, so will
> its radiation, and its null will decline.

>
> How does Art`s antenna differ from a T-matched dipole?
>
> Best regards, Richard Harrison, KB5WZI

2024. Re: 30 meter add-on for HF2-V idea

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 04:16:21 UTC
From: t_ashland@yahoo.com
Message-ID: <6e6aeba9.0307240926.20e62671@posting.google.com>
Source record: 111769

Thanks John. I think I will give it a try next week and post the
results. I reckon I should space the 30 meter quarter wave wire at
least 5 inches from the HF2V. I will probably get some sort of
non-conductive stand off and clamp it to the aluminum tubing. I have
a beam for the higher bands so I don't really need 20 meters.

"John" <my-callsign@qsl.net> wrote in message
news:<9gDTa.524$c17.448226@newsfep1-win.server.ntli.net>...
> I used to use a 40mtr quarter wave wire vertical and a 30 mtr quarter wave
> wire vertical in parallel up a 10mtr fibre-glass pole and it worked fine,
> though they were separated by about 5 inches. Coincidentally I now have a
> HF2V with the 30m add-on kit but I'm sure you could run a parallel 30mtr
> quarter wave instead of the add-on kit. The Butternut 20 mtr add-on kit for
> the HF2V is a piece of wire, a quater wavelength long, fed in parallel with
> the main antenna.
>
> John
> G4IRN
>
>
>
> "Terry Ashland" <t_ashland@yahoo.com> wrote in message
> news:6e6aeba9.0307221358.7aef741f@posting.google.com...
> > I haven't tried it, but I thought why wouldn't a 23' foot piece of
> > wire parallel to the HF2-V fed at the base work for 30 meters? I
> > realize you might have to retune 40 and 80, but it sure would beat
> > buying the 30 meter add on kit. Any thoughts would be appreciated.
> > Anyone try any other 30 meter solutions with this vertical?
> > 73,
> >
> > Terry, WK0F

2025. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 04:19:45 UTC
From: john-shrove@attbi.com
Message-ID: <ef5d31be.0307240927.4958044@posting.google.com>
Source record: 111770

> > www.dslextreme.com/users/teeaye/coax.jpg

Terrible picture. it looks like a cold joint.

2026. Re: Cushcraft MA5V band coverage

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 05:17:45 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F20BD79.2572813B@cwis.net>
Source record: 111771

Javier,
A 20 meter 1/4 wave works very well on 6 meters.
'Doc

2027. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 05:19:33 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307240947.68c71933@posting.google.com>
Source record: 111772

Mark,
One thing that came out from the 9/11 episode is that world dominance
is shown once again to be transitory. Just a few people dealt us a
heavier blow than we have ever had before. Turned a healthy bank
account to our worst deficit ever and placed us in a position that we
now do not have enough troops
to do the governments bidding. When we decided to trash the Koran and
supply arms to those who wish to push its devotees aside in search of
land we entered a terrible path. A war against freedom of religeon
which energises those people to action against which the largest army
ever assembled will never be able to subdue. Rather than say 'bring
them on' would it not be better to understand what brings millions of
people together against the most dominant government
on earth at the present time and why they are willing to lay down
their lives for what they believe in.
If we persist in hanging on to the western ideas of punishment i.e.
imprisonment or death then we all have a rough row to hoe when our
opponents see death as redemption and who already live amoungst us.

Now as I was saying about antennas i.e . conjugate matches.....
Art

nm5k@wt.net (Mark Keith) wrote in message
news:<25eb70d7.0307232218.14616e65@posting.google.com>...
> k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723110714.28226.00000487@mb-m24.aol.com>...
> > BTW, looks like my message to prevent spam in my return address works two ways:
> > one it reduced automated spam, two - there are two "noSaddams" dead as a door
> > nail. Another egg in the face of the bitching DummycRATS! I hope they soon
> > get/confirm the Big Papa Sodumb deadsky soon too.
>
> Dunno, I think they still need to give Bin Doo-Doo a touch up. He
> seems to still be slithering around somewhere. I consider him the
> worst of the lot, considering his recent actions, and everyone seems
> to have forgotten about his slimy carcass. Something occurred to me
> recently. Bin Doo-Doo probably thought when he did the 9-11 thing that
> we would all wilt over, whine and moan for a while, and all would
> continue to be biz as usual in his part of the world. Probably
> considered Sodamn Insane one of his close partners in crime. Probably
> thought they would be out water skiiing about this time, celebrating
> their crushing defeat of the dreaded yankee redneck infidel bastards.
> But now his group is half toast after being given a healthy round of
> air to ground enemas, and same for ole Sodamn. His days are numbered.
> Bin Doo-Doo brought the wrath of Bush on the whole group of terrorist
> deathmonglers and dicktaters. I bet Sodamn curses Bin Doo-Doo's name

> when he hovers in his fortified double wide to attempt fitfull sleep
> at night. Who wants to be next? Come on boys, lets spin the wheel and
> get this show on the road before we are all broke. Making all those
> high $$$$ missiles will boost the economy in certain parts of the
> country. MK

2028. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 05:21:09 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307240947.21efb812@posting.google.com>
Source record: 111773

Mark,
One thing that came out from the 9/11 episode is that world dominance
is shown once again to be transitory. Just a few people dealt us a
heavier blow than we have ever had before. Turned a healthy bank
account to our worst deficit ever and placed us in a position that we
now do not have enough troops
to do the governments bidding. When we decided to trash the Koran and
supply arms to those who wish to push its devotees aside in search of
land we entered a terrible path. A war against freedom of religeon
which energises those people to action against which the largest army
ever assembled will never be able to subdue. Rather than say 'bring
them on' would it not be better to understand what brings millions of
people together against the most dominant government
on earth at the present time and why they are willing to lay down
their lives for what they believe in.
If we persist in hanging on to the western ideas of punishment i.e.
imprisonment or death then we all have a rough row to hoe when our
opponents see death as redemption and who already live amoungst us.

Now as I was saying about antennas i.e . conjugate matches.....
Art

nm5k@wt.net (Mark Keith) wrote in message
news:<25eb70d7.0307232218.14616e65@posting.google.com>...
> k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723110714.28226.00000487@mb-m24.aol.com>...
> > BTW, looks like my message to prevent spam in my return address works two ways:
> > one it reduced automated spam, two - there are two "noSaddams" dead as a door
> > nail. Another egg in the face of the bitching DummycRATS! I hope they soon
> > get/confirm the Big Papa Sodumb deadsky soon too.
>
> Dunno, I think they still need to give Bin Doo-Doo a touch up. He
> seems to still be slithering around somewhere. I consider him the
> worst of the lot, considering his recent actions, and everyone seems
> to have forgotten about his slimy carcass. Something occurred to me
> recently. Bin Doo-Doo probably thought when he did the 9-11 thing that
> we would all wilt over, whine and moan for a while, and all would
> continue to be biz as usual in his part of the world. Probably
> considered Sodamn Insane one of his close partners in crime. Probably
> thought they would be out water skiiing about this time, celebrating
> their crushing defeat of the dreaded yankee redneck infidel bastards.
> But now his group is half toast after being given a healthy round of
> air to ground enemas, and same for ole Sodamn. His days are numbered.
> Bin Doo-Doo brought the wrath of Bush on the whole group of terrorist
> deathmonglers and dicktaters. I bet Sodamn curses Bin Doo-Doo's name

> when he hovers in his fortified double wide to attempt fitfull sleep
> at night. Who wants to be next? Come on boys, lets spin the wheel and
> get this show on the road before we are all broke. Making all those
> high $$$$ missiles will boost the economy in certain parts of the
> country. MK

2029. SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 06:10:36 UTC
From: wasatch@jps.net
Message-ID: <3a31dd1d.0307242210.3cdbdd1a@posting.google.com>
Source record: 111774

Please consider this a newbie question. Am an SWL, not a HAM, and am considering an MFJ loop as the primary indoor SWL antenna, along with an active antenna as a less potent secondary, the two connected via an antenna switch.

So lets say I read in a schedule that a certain frequency in the 49 meter band right now should have an interesting broadcast station on the air, so I set my receiver digital readout to that freq, then what's the procedure to tune the loop to that same exact frequency, having no transmiter?

Thanks for any help!

2030. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 06:53:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2jj1ivk6ehqmfnmbjv9g8brt9od85vlml1@4ax.com>
Source record: 111775

On 24 Jul 2003 23:10:36 -0700, wasatch@jps.net (Hatfield) wrote:

>Please consider this a newbie question. Am an SWL, not a HAM, and am
>considering an MFJ loop as the primary indoor SWL antenna, along with
>an active antenna as a less potent secondary, the two connected via an
>antenna switch.
>
>So lets say I read in a schedule that a certain frequency in the 49
>meter band right now should have an interesting broadcast station on
>the air, so I set my receiver digital readout to that freq, then
>what's the procedure to tune the loop to that same exact frequency,
>having no transmiter?
>
>Thanks for any help!

Hi OM,

What you need is a device known as a "noise bridge." This takes the place of a transmitter by putting pink noise onto the line into the receiver (the antenna input) and uses the tuning of the antenna (more often the usual antenna tuner, but for you the MFJ loop) to adjust the receiver for maximum noise signal coming from the device. Actually, the unit is not a bridge at all, but is the source within a configuration using your receiver to define a bridge relationship within the system.

This device is a wideband RF generator (a "pink noise" source, called pink because it is not necessarily DC to daylight in bandwidth, merely wide banded for SW or HF - others may call this "white noise" but terminology is hardly an issue). The reason for this choice is that it removes the need for an expensive tracking generator that is tuned to any specific frequency. You don't need to know the frequency, you merely need RF power to peak at a tuned frequency.

So, the process is simple. You turn on the noise bridge, tune your tuner or Loop, and turn the noise bridge off. Listen to the tuned frequency.

You can do the same thing with background noise, but a pink noise source usually presents more power at any frequency thus giving you a more positive peaking adjustment. With the MFJ Loop's tight bandwidth, this can make a difference if you are not patient and haven't taken the care to keep a log of settings vs. frequency.

If you are inclined to build your own, a simple noise generator can be built out of a battery, resistor, coupling capacitor, and Zener diode.

There are better noise sources, and more expensive too. Most of the cost is in assembly labor and packaging but I would guess the commercial unit runs about $40. As already suggested, you could also tune known stations with large signals and note the tuning settings for future extrapolation. Often, this and patience is enough.

73's
Richard Clark, KB7QHC

2031. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 07:27:49 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <gXQC6LA1vNIEAB@ifwtech.co.uk>
Source record: 111779

Richard Harrison wrote:
>Your Bird wattmeter will show a forward power but no reflected power
>because the load with its stub provides a match to the transmission
>line.

Please can we remember (again, again, again) that the Bird "wattmeter"
is not really a power sensor.

In thinking about this whole problem, it's vital to understand - and
remember - that the indications of a Bird rely on the very theory of
standing waves that is being picked apart.

That means it's part of the argument, not part of the answer.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2032. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 07:32:38 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <onYA2FBW0NI$EAjr@ifwtech.co.uk>
Source record: 111778

Reg Edwards wrote:
>Tuners don't have specs. The sales blurb NEVER tells prospective customers
>what they really need to know - just the maximum setting values of the
>tuning capacitors in pF and of the coil inductance in microhenries. Its too
>late to find out the hard way after you've bought the useless thing.

If there's a downloadable manual, the values may be in the parts list. Then you can plug the values into one of Reg's programs and see what range of impedances you could match.

There's also a program called AAT that comes with the ARRL Antenna Book and automatically sweeps over a range of different loads, and maps out tuner the resulting values of overall tuner efficiency and the power dissipations, voltages and currents that stress the individual components. (I believe the latest Antenna Handbook may have a Windows version, which may provide maps that are easier to read than a big ASCII printout.) Some of the results are scary. For example, if you have a typical low dipole for Top Band, and want to T-match it to your legal-limit amplifier, then be very afraid...

The other part of the problem is to know what impedances you are trying to match. Something like the MFJ-259B/269 will tell you that.

So, yes, the tuner manufacturers could help by clearly publishing the component values. But until you also have all the other information - and have learned how to interpret it - then Reg is absolutely right: you have to buy on faith.

Well, almost on faith. A comparative review of five high-power tuners in QST for February 2003 makes a brave attempt to get into the complexities. There may be extended review data on the ARRL members-only site.

Summarising from earlier discussions about all this, three worthwhile rules of thumb are:

* Before buying, divide the manufacturer's published "power rating" by 3... and the number you get is still only a guide. It cannot be guaranteed because the manufacturer doesn't know how you'll try to use (or misuse) the tuner.

* So don't misuse your T-match. Always use the *lowest* possible value of inductance that will give a match (higher inductance wastes power inside the tuner, and may damage it).

* Don't try to match extremely low or high impedances.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2033. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 07:53:17 UTC
From: Nisse <nisse@manqwr.se>
Message-ID: <3F20E1ED.5C3CCA4C@manqwr.se>
Source record: 111776

CW wrote:

> Another thing that you can be sure of. Rarely does it matter.

Then, it does not matter how one attaches them either (if it is
rain-proof).
Discussion unneccesary. #QED

>
> "Nisse" <nisse@manqwr.se> wrote in message
> news:3F1FE3BE.3846DBD5@manqwr.se...
> > (the only thing You can be sure of, it is not 50
> > ohm
> > characteristic impedance)...
> >
> >

2034. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 08:08:08 UTC
From: Nisse <nisse@manqwr.se>
Message-ID: <3F20E568.4359BD9E@manqwr.se>
Source record: 111777

W7TI wrote:

> On Thu, 24 Jul 2003 15:48:46 +0200, Nisse <nisse@manqwr.se> wrote:
>
> >This is rather amusing...
> >A debate how to attach PL-259.... Would'nt it be better if we finally
> >got rid of those aniquities (the only thing You can be sure of, it is not 50
> >ohm
> >characteristic impedance)...
>
> ____
>
> Getting rid of a connector which is standard all over the world?
>
> Now *that's* amusing. :-)

BNC or N are also standards all over the world. So is C, however it is a bit
tricky to find.
PL-259 is hardly useable above 50MHz, and totally worthless above approx. 300MHz
(why PL-259 is the standard for 144MHz rigs is definitively beyond my
undersanding- for
commercial 80MHz LMR, BNC or C is standard, depending on power output).

>
>
> --
> 73, Bill W7TI

2035. Re: SGC Tuners with Dipoles ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 08:55:54 UTC
From: froggers <not.froggers@nospam.ntlworld.com>
Message-ID: <og6Ua.118$UR2.29818@newsfep2-gui.server.ntli.net>
Source record: 111780

Richard,

I have set up a SGC with a dipole - basically its screwed to the chimney stack, with approx 50 foot
equal length legs going down to approx 10 feet off the ground, in an inverted V sort of appearance.

Its the best aerial I've ever had !!

Tunes all HF bands (inc 160 and 10) and makes for a pretty discreet system. For a quick easy and effective system on all bands it seems hard to beat, and
no TVI - because its balanced, I presume!

Nick

2036. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 09:52:10 UTC
From: 4nec2@gmx.net
Message-ID: <ee90361b.0307240129.184df2ac@posting.google.com>
Source record: 111781

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723082916.02382.00000390@mb-m21.aol.com>...

> Things I would like to see is incorporation of terrain simulation with antenna
> design. Few zones of different "ground quality" (radials, sand, salt water)
> with linear and/or circular boundaries plus sloping terrain (contour profile).
> Example would be four square array on the sloping hill of sand some distance
> from the ocean. Verticals are very sensitive to the ground quality and terrain
> slopes/profile and this feature would be a great tool in quest for maximizing
> the performance of array by using the terrain features (enhanced F/B).
> K6STI has Terrain Analyzer (?) I have never tried it, but I understand that he
> uses free space pattern of antenna and then applies the geometry and quality of
> ground. I can see that more true representation of antenna's performance is to
> tweak the design with real ground/terrain situation. Vertical antennas, where
> ground participation makes significant difference in the tuning of array, would
> be more closely modeled by using real ground rather than free space (who's got
> it anyway?) and then doing optimization with given ground/terrain situation.
> Enough challenge?

What a strange coincidence..., I had the same thoughts and almost used
the same words when contacting Dean Straw for an evaluation copy of
his latest HFTA terrain analysis software, to figure out if it was
possible and if it would be worth the effort to interface with this
software to optimize over a specific terrain profile and/or interface
with the VOACAP propagation prediction software.
I also took a look at TA and to see how this would fit, but because
this package is DOS based I decided to take a further look at HFTA.

However, it seems both packages are restricted to the use of
horizontal polarized (Yagi) antennas only. Because 4nec2 was created
to support also other types of antennas (there are already a number of
Yagi optimization programs) it looks like both programs would not
match completely. Furthermore, I am not such an (antenna) expert that
I can create the equations my own to determine the resultant radiation
pattern over none-flat ground for both vertial and horizontal
polarized systems. Also concerning the user-interfrace for both
programs it seems not that easy to automatically interface with one of
them.

So maybe all this will "time-out" till the long winter evenings...

Arie.

2037. Re: 4NEC2 features wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 10:40:09 UTC
From: 4nec2@gmx.net
Message-ID: <ee90361b.0307240146.6c048bbe@posting.google.com>
Source record: 111782

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723105610.01178.00000464@mb-m22.aol.com>...
> Arie,
> One more thing comes to mind, it would be desirable to be able to use insulated
> wires in models. Typically house electrical insulated wire has about 5%
> shortening coefficient. I think it would suffice to enter the shortening
> coefficient (can be obtained by measurement).

Nice suggestion. However I did not write my own nec-2 core, just used
the existing nec-2 sources and changed it a bit to integrate the nec-2
calculations and the sommerfeld ground calc's.

However there is another freeware program available which uses the
nec-2 and for which it is possible to specify insulated wires. From my
memory, I think I saw this on Ray Andersons 'unofficial nec' pages.

> I believe NEC4 can accomodate
> that and could serve as an example how to do it.

One of my great wishes would be nec-4 becoming (public) available for
none american citizens. However I am already waiting for it some four
or five years, and I have no indications this will change soon.

> Also different material for elements within antenna, like copper (insulated)
> wire quad and aluminum Yagi elements.

4nec2 makes is possible to use almost any nec2 card. So there is no
provblem specifying different materials for different parts of the
antenne or for the antenna as a whole. When using the CAD style
geometry editor, one has predefined list-boxes available with common
materials.

> That's it besides transducer for the brain to "see" the design in my head and
> optimize/model it in 3D :-)

During optimization you can see the 3D model change, as it is updated
every iteration (if this is the right english word for it..).

Arie.

2038. Re: 4NEC2 features wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 11:05:41 UTC
From: 4nec2@gmx.net
Message-ID: <ee90361b.0307250305.138fbcca@posting.google.com>
Source record: 111783

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723105610.01178.00000464@mb-m22.aol.com>...
> Arie,
> One more thing comes to mind, it would be desirable to be able to use insulated
> wires in models. Typically house electrical insulated wire has about 5%
> shortening coefficient. I think it would suffice to enter the shortening
> coefficient (can be obtained by measurement).

Somehow I managed to let my first reply on this subject disappear
completely, so let's give it another try....

***

4nec2 was based on the 'standard' nec-2 core for which I only merged
the separate nec-2 and sommerfeld executables into one single
executable file to be able to use 'sommerfeld ground' inside a
frequency sweep.

The original nec-2 sources contain no provision to handle insulated
wire, but I beleave on www.qsl.net/wb6tpu/swindex.html there is
another freeware program available for handling insulated wires with
nec-2.

> I believe NEC4 can accomodate
> that and could serve as an example how to do it.

Yes. One of my great wishes is nec-4 (sources) becoming available for
none-american citizens. I am still waiting for this some four or five
years but I am afraid I will have to wait at least another 4 years.

> Also different material for elements within antenna, like copper (insulated)
> wire quad and aluminum Yagi elements.

4nec2 supports most of the nec-2 cards, so it is no problem to specify
different materials for any part of the antenna oR for the structure
as a whole. When using the CAD based geometry editor a pre-defined
list of common materials is available.

> That's it besides transducer for the brain to "see" the design in my head and
> optimize/model it in 3D :-)

??

Arie.

2039. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 11:09:06 UTC
From: 4nec2@gmx.net
Message-ID: <ee90361b.0307250309.52253028@posting.google.com>
Source record: 111784

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723082916.02382.00000390@mb-m21.aol.com>...

> Things I would like to see is incorporation of terrain simulation with antenna
> design. Few zones of different "ground quality" (radials, sand, salt water)
> with linear and/or circular boundaries plus sloping terrain (contour profile).
> Example would be four square array on the sloping hill of sand some distance
> from the ocean. Verticals are very sensitive to the ground quality and terrain
> slopes/profile and this feature would be a great tool in quest for maximizing
> the performance of array by using the terrain features (enhanced F/B).
> K6STI has Terrain Analyzer (?) I have never tried it, but I understand that he
> uses free space pattern of antenna and then applies the geometry and quality > of ground.

(Somehow, yesterday I managed to let my reply(s) disappear completely,
so let's give it a second try....)

***

Yuri, what a strange coincedence. This because I exactly had the same
thoughts.

I must admit however that I am not such a (theoretical) antenne
expert, so I think it's a bit too much effort to create the equations
for terrain analysis myself. That's why I already took a look at both
the K6STI program and Dean Straw's latest HFTA program, (both created
to do terrain analysis) and to investigate how much effort it would
take to interface with one of them.
When looking at these programs I realized however that both of them
are limited to horizontal polarized ((stacks of) Yagi) antennas.

4nec2 on the other hand was created to model/optimize any kind of
antenna- structure. (because of my main interes in the lower HF bands
and because there was already enough Yagi specific freeware available)
Furthermore the user interfaces for both programs are a bit difficult
to programatically interface with, so I am afraid this 'project' will
have to wait a while till the long winter evenings...

> Enough challenge?

Yes, that's just what I was looking for.

Arie.

2040. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 11:35:50 UTC
From: "Dan, danl, danny boy, Redbeard, actually Greybeard now" <danlx@execpc.com>
Message-ID: <ge52ivcv8g0ijecg71nknhhucmsrv81cbn@4ax.com>
Source record: 111785

On 24 Jul 2003 22:21:09 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
sent into the ether:

> who already live amoungst us.
>
>Now as I was saying about antennas i.e . conjugate matches.....
>Art
Back into the killfile, Plonk!
Dan, N9JBF
Amateur radio - What a hobby!
Remove left x for direct reply

2041. Link coupling to a rotary incuctor

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 11:43:58 UTC
From: "T.E.O" <rfmscpa@earthlink.net>
Message-ID: <2K8Ua.119137$lo.10159155@newsread2.prod.itd.earthlink.net>
Source record: 111786
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.homebrew

I'm building a balanced line antenna tuner and have settled on link coupling in order to eliminate the balun from the circuit.

I have a big rotary inductor out of an old Murch 2000A and would like to use it as the output link. I've decided on a variable (tapped) input link. I'm wondering if anyone has done this and what technique they used to mount the input link (i.e., how to get it close enough for effectively coupling).

2042. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 12:39:32 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307240219.123a5c0d@posting.google.com>
Source record: 111787

nm5k@wt.net (Mark Keith) wrote in message
news:<25eb70d7.0307232218.14616e65@posting.google.com>...
> > nail. Another egg in the face of the bitching DummycRATS! I hope they soon
> > get/confirm the Big Papa Sodumb deadsky soon too.
>
> Dunno, I think they still need to give Bin Doo-Doo a touch up. He
> seems to still be slithering around somewhere. I consider him the
> worst of the lot, considering his recent actions, and everyone seems
> to have forgotten about his slimy carcass. Something occurred to me
> recently. Bin Doo-Doo probably thought when he did the 9-11 thing that
> we would all wilt over, whine and moan for a while, and all would
> continue to be biz as usual in his part of the world. Probably
> considered Sodamn Insane one of his close partners in crime. Probably
> thought they would be out water skiiing about this time, celebrating
> their crushing defeat of the dreaded yankee redneck infidel bastards.
> But now his group is half toast after being given a healthy round of
> air to ground enemas, and same for ole Sodamn. His days are numbered.
> Bin Doo-Doo brought the wrath of Bush on the whole group of terrorist
> deathmonglers and dicktaters. I bet Sodamn curses Bin Doo-Doo's name
> when he hovers in his fortified double wide to attempt fitfull sleep
> at night. Who wants to be next? Come on boys, lets spin the wheel and
> get this show on the road before we are all broke. Making all those
> high $$$$ missiles will boost the economy in certain parts of the
> country. MK

Too bad both Saddam and Bin Laden were both monsters created by
the CIA, that is, the USA government.

Slick

2043. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 12:56:33 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F2127CB.979924EE@gte.net>
Source record: 111788

Hatfield wrote:

> Please consider this a newbie question. Am an SWL, not a HAM, and am
> considering an MFJ loop as the primary indoor SWL antenna, along with
> an active antenna as a less potent secondary, the two connected via an
> antenna switch.
>
> So lets say I read in a schedule that a certain frequency in the 49
> meter band right now should have an interesting broadcast station on
> the air, so I set my receiver digital readout to that freq, then
> what's the procedure to tune the loop to that same exact frequency,
> having no transmiter?

Without going through their catalog, the only loop I am familiar with is their amateur magnetic loop- whose response from memory goes down to perhaps 30M- but not below. Is this the loop you are considering, or do they now make a SW receiving loop?

Dale W4OP

2044. Re: Cushcraft MA5V band coverage

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 13:45:24 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <2PidnQW3uNToqbyiXTWJig@comcast.com>
Source record: 111790

You could ask Cush-Craft.

Tom, N3IJ

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:86brvj8bmm.fsf@skylane.kjsl.com...
> I've a Cushcraft MA5V, which I bought a couple of years back under
> the impression that it covers 10 through 20 meters.
>
> The text on Cushcraft's website states that coverage. But, the little
> spec table below it indicates coverage from 6m to 20m.
>
> What gives?
>
> Relevant URL:
>
> http://www.cushcraft.com/amateur/details.asp?catid=92
>
> 73,
>
> -jav w6vms

2045. HAMFEST, Ithaca NY, Sat Aug 2

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 13:52:13 UTC
From: ldh3@cornell.edu
Message-ID: <bfrcmdbds3@news01.cit.cornell.edu>
Source record: 111791

TCARC Hamfest 2003 Scheduled for Saturday, August 2, 2003

ITHACA, NY The Tompkins County Amateur Radio Club announces the Finger Lakes HAM-IN (hamfest and fly-in) at Tompkins County Airport (KITH), 3 miles NE of Ithaca on Route 13, on Saturday August 2, 2003.

Talk-in on 146.970- AF2A repeater.

Vendor setup starts at 6 AM (inquire for Friday night setup time).
Doors open to the public at 7 AM Saturday morning.
Hamfest closes at 2 PM Saturday afternoon.
Large hangar for indoor vendors and displays.
Drive-in setup.
Paved outdoor flea market and parking.
Aviation displays - fly in and show your plane for free!
Breakfast and lunch served by Boy Scouts.
Admission: $5.00 at the door
Indoor tables: $10.00.
Outdoor space $2.00 each.
ARRL sanctioned event. VE exams starting at 9AM, walk-ins always welcome at tests.

More info, including a PDF format flyer from a previous year, is available on the club
website at
http://www.compcenter.com/~tcarc/

For more info email Mike N2VR at n2vr@.nospammerslightlink.com
after removing the NOSPAMMERS and leading period.

2046. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 13:54:05 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <5cd2iv4nf8f0ierb6vljo9udh94d453q23@4ax.com>
Source record: 111861

On Thu, 24 Jul 2003 23:40:28 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:

>O
>
>As the Army Times has noted about the Bush White House's support of
>the troops:
> "President Bush, the commander in chief himself, rode a Navy jet
>to the aircraft carrier Lincoln to bask in the reflective glow of some
>of the brave Americans who helped oust Saddam Hussein.
> "Money talks -- and we all know what walks."

Let's not forget the 7 months Mr. Bush was AWOL from his National
Guard unit in Alabama -- that was the question that went begging when
he landed on the aircraft carrier pretending to be Tom Cruise... damn,
that man has nerve.

Bob
k5qwg

>
>73's
>Richard Clark, KB7QHC

2047. Re: 4NEC2 features wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 15:29:46 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307250729.6c0c8443@posting.google.com>
Source record: 111792

Dale Parfitt <parinc@gte.net> wrote in message Arie

Arie
As a retired person I do not have enough time for a lot of things so
as yet have not looked at your program. (Old people have so many
projects but always under estimate the time required because
abilities deteriate as age progresses)
Could you tell me if you have the ability to make an impedance value
a variable which could be helpfull when designing loops?
Also, how many variables do you have available together with max
number of pulses used ? Since close coupling of wires can be very
sensitive to change, to me the above factors would be all important.
I would add however, that coupling is not viewed seriously in ham
radio so attempts to provide such features would provide little if
any reward.
Again thank you for all the work you have done on a sharing basis
to keep this hobby so interesting
Regards
Art

news:<3F1F51F3.A14FFA87@gte.net>...
> Yuri Blanarovich wrote:
>
> > Arie,
> > One more thing comes to mind, it would be desirable to be able to use insulated
> > wires in models. Typically house electrical insulated wire has about 5%
> > shortening coefficient. I think it would suffice to enter the shortening
> > coefficient (can be obtained by measurement). I believe NEC4 can accomodate
> > that and could serve as an example how to do it.
> > Also different material for elements within antenna, like copper (insulated)
> > wire quad and aluminum Yagi elements.
> >
> > That's it besides transducer for the brain to "see" the design in my head and
> > optimize/model it in 3D :-)
> >
> > Yuri, K3BU
> >
>
> Hi Yuri,
> W4RNL has a very nice tech note on his site relating this shortening effect with
> respect to the thickness of the dielectric and its dielectric constant. I used this
> on my latest 20M Moxon and it came out right on the money.
>
> Dale W4OP

2048. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 16:05:55 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F215542.6C2FC620@shaw.ca>
Source record: 111793

Hatfield wrote:
>
> Please consider this a newbie question. Am an SWL, not a HAM, and am
> considering an MFJ loop as the primary indoor SWL antenna, along with
> an active antenna as a less potent secondary, the two connected via an
> antenna switch.
>
> So lets say I read in a schedule that a certain frequency in the 49
> meter band right now should have an interesting broadcast station on
> the air, so I set my receiver digital readout to that freq, then
> what's the procedure to tune the loop to that same exact frequency,
> having no transmiter?
>
> Thanks for any help!

Tune it for maximum noise or signal on the frequency. You should hear
the motor noise on your receiver as the capacitor turns. Then fine
tune it back and forth.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2049. Double Quad

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 16:26:44 UTC
From: Tom Depuy <tmdepuy@frontiernet.net>
Message-ID: <8TcUa.9472$fP.6076@news02.roc.ny>
Source record: 111794

I found an article from QST a while ago that showed how to make a horizantaly polarized "beam". Two quads where stacked on one top of the other, with a reflecting screen behind them. Is it possible to rotate the antenna so that it is vertcally polarized?
Matt
KC2KEI

2050. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 16:39:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vi2nb57rfnqhe2@corp.supernews.com>
Source record: 111795

One of the most serious and persistent problems you've had in communicating your antenna ideas is your insistence on creating and using your own unconventional definition of efficiency. As I've pointed out before, and to no effect, is that the term has a universally accepted definition with regard to antennas. As long as you continue to make up your own definition, you'll increase your difficulty in communicating your ideas. But it's a choice you've made.

Roy Lewallen, W7EL

Art Unwin KB9MZ wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhsk4n5lamhs29@corp.supernews.com>...
>
>>I hope you'll pardon me for amplifying this a little.
>>
>>If you put X watts into the primary of a transformer and extract Y watts
>>from the secondary, the efficiency is Y/X by definition.
>
>
> Yes Roy. The specifics of what is being discussed is all important
> when looking at answers as well as what terms are being used to
> measure 'efficiency' and to what ends.
> As you are surely awawe I too look at antennas as transformers or
> coupled circuits and thus the primary contributes very much in its own
> way as far as radiation as does the secondary. Thus 'efficiency' as a
> criteria of 'value'
> is all important when using it as a term since as you point out it is
> a ratio of two terms both of which have to be made very clear for the
> term efficiency to be made clear
> Thus in stagger tuning it is important to define your requirements in
> terms of bandwidth (dual frequency radiation) or max gain (dual
> radiators on the same frequency),the above bearing little difference
> to old time receiver designwith multiple I.F. cans. It is in this
> areana that I view stagger tuning or coupling
> as being efficient in charactor. If I am incorrect in the above
> assumptions I would welcome any correction from those well versed
> inthe field.
> Best regards
> Art
>
>
>>If you put X watts into one antenna and extract Y watts from an antenna
>>coupled to it, and measure the efficiency of the "transformer" the same
>>way as you did the conventional transformer, you'll find it has lousy

>>efficiency. Why? Because a goodly fraction of the power you applied to
>>the "primary" antenna never gets to the "secondary" antenna because it's
>>radiated instead. As far as the "secondary" is concerned, it might as
>>well have been converted to heat.
>>
>>If you look at the impedance of the "primary" antenna, you'll find an
>>excess of resistance -- just enough, in fact, to account for the "lost"
>>(radiated) power.
>>
>>This isn't a statement about how well coupled antennas function as
>>antennas, whose purpose is to radiate after all. It's a statement about
>>how well they function as a transformer. Poorly.
>>
>>Roy Lewallen, W7EL
>>
>>Dr. Slick wrote:
>>
>>>aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
>>>
>>>
>>>>> 1. Two antennas (also called transducers) placed close together
>>>>>actually can be considered a transformer, albeit a very inefficient
>>>>>one.
>>>>
>>>>Humm...By antenna I assume it also means a radiator. This would
>>>>suggest
>>>>that a stagger tuned radiators would fall into the catagory discussed
>>>>above.
>>>>Now I have a problem with that statement, because I very much see it
>>>>as a transformer which is VERY efficient and not as you stated "albiet
>>>>a very inefficient one".
>>>>Can you explain to me how a stagger tuned antenna migrate into
>>>>inefficient radiators?
>>>>Seems to me that Thevenin's theorem would show this as being
>>>>incorrect !
>>>>
>>>
>>>
>>>
>>> Well, two identical antennas spaced a few wavelengths apart can
>>>be considered a transformer, but very inefficient compared to a "real"
>>>transformer with identical primary and secondary turns, with an
>>>appropriate toroid core. This would be because the core material will
>>>increase the magnetic flux density, and will increase the coupling
>>>between the two windings/transducers.
>>>
>>> Point is, the farther apart the antennas are, the less efficient
>>>of a "transformer" they will be.
>>>

>>> I'm not familiar with stagger tuned antennas, although the name
>>>would suggest that it is tuned for multiple resonances, so that the
>>>antenna will be broadband.
>>>
>>>
>>>
>>>Slick

2051. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 16:44:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vi2njhm7jk9q3a@corp.supernews.com>
Source record: 111796

Actually, Art, the dissention is mostly when *you* use the term efficiency, because for reasons of your own, you don't use it in the universally understood way.

Roy Lewallen, W7EL

Art Unwin KB9MZ wrote:
> Dr Slick.
> When the term efficiency is used on this newsgroup
> it always leads to dissention.
> As Roy pointed out efficiency is a ratio between two factors
> X and Y only. Unfortunately in this newsgroup
> people have a tendency to use Y in their derivation of efficiency
> which results in people talking past each other.
> I suspect we have a bit of that in this thread
> Have a great day
> Art
>

2052. Re: phasing coils

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 17:15:04 UTC
From: "Mike M"
Message-ID: <e5p2iv0n6led45oan9v00aa8i2sdeurjhf@4ax.com>
Source record: 111797

On 24 Jul 2003 20:06:16 -0700, k7itm@aol.com (Tom Bruhns) wrotF:

>The coaxial collinear works fine if done properly. You do NOT have to
>put the thing in wax to make it work. I wrote a paper on how to do it
>properly, but the key is to use sections 1/2 wave long taking into
>account the VF of the line, so that the voltage across each gap
>between adjacent sections is the same, and all in phase. The
>feedpoint impedance will be somewhat reactive since the elements are
>shorter than a half-wave, and the impedance will depend on the number
>of sections (since they are all fed in parallel, and there's a mutual
>impedance to consider), but you just provide the proper matching
>network for that, and you provide proper decoupling from the feedline.
> It's easy to put together an eznec or similar model to show that it
>works fine in air, no wax needed. And it works in practice as well as
>in theory.
>
>The old ARRL writeup on the coax collinear was rather messed up, and
>my lack of success building them a couple times led me to think it
>through much more carefully and learn HOW to do it.
>
>Cheers,
>Tom

Would that paper be available somewhere? I would like to read it.

Another Mike

2053. Re: Double Quad

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 19:44:31 UTC
From: ? <Martin@NOSPAM.g1gyc.demon.co.uk>
Message-ID: <bfs1qrqos4$8300dec7@news.demon.co.uk>
Source record: 111800

"Tom Depuy" <tmdepuy@frontiernet.net> wrote in message
news:8TcUa.9472$fP.6076@news02.roc.ny...
> I found an article from QST a while ago that showed how to make a
> horizantaly polarized "beam". Two quads where stacked on one top of the
> other, with a reflecting screen behind them. Is it possible to rotate the
> antenna so that it is vertcally polarized?
> Matt
> KC2KEI
>
>

I do not see why not
try it and then do some field tests to see if the vertical field is
stronger.
Experimentation - a REAL hobby ....
;&#65533;))

should work I too have looked at the ARRL article but for use in
Backpacking contest on VHF /UHF

73 de G1GYC

2054. Re: Double Quad

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 19:51:50 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F218A56.995C6C00@cwis.net>
Source record: 111799

Tom,
Sure, rotate the 'beam' 90 degrees in elevation.
'Doc

2055. Re: SGC Tuners with Dipoles ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 20:22:46 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <bfs3im$86i$1@news1.tribune.com>
Source record: 111801

I ran my ALINCO autotuner (meant for an end fed wire) that way for a couple of years. I hooked the ladder line to the "antenna" and "ground" connections. I second the motion for the chokes on the Feed and control line back to the shack. I actually had the tuner in the shack for a while, and did not notice any difference with rf when I moved it out of the shack. In both cases I had some RF on the Coax and the control lines which the chokes cured. I used a heavy ground for lightening protection.
KA9CAR

"Richard Clark" <kb7qhc@comcast.net> wrote in message news:u4i0iv8smqt1gmk67jmnmjisa6dl1n8crl@4ax.com...
> On 24 Jul 2003 13:49:49 -0700, 3518693@mail.com (M Wilson) wrote:
>
> >Hi,
> >
> >Does anyone use an SGC tuner (coupler) with a dipole, and if so, how
> >do you have it set up. I was thinking of the tuner at the base of the
> >tree, 60' of ladder line up the tree, then split into the dipole. I
> >know most use these tuners for longwires or with whips, but I am
> >looking for info and experiences on dipole configurations.
> >
> >Thanks in advance.
> >
> >MW
>
> Hi OM,
>
> You might want to put ferrite chokes on both the coax feed into the
> SGC and around its control lines as well. There is a definite
> possibility of common mode on the line (hence the chokes on the lines
> back to your shack) and some blurring of the usual directionality.
>
> 73's
> Richard Clark, KB7QHC

2056. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 20:54:52 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307251254.41dc5bf1@posting.google.com>
Source record: 111802

Roy Lewallen <w7el@eznec.com> wrote in message news:<vhrnmu43m03lad@corp.supernews.com>...
>
> Here's the problem with that transformer concept again. A field is not a
> voltage. So you can't measure it with a voltmeter. You can convert the
> fields to voltages and currents by use of a transducer -- an antenna --
> then you can measure the voltage and current from the antenna with
> ordinary meters.
>

I agree with you that the field is first converted by the antenna
before it can be measured.

But by definition, the E field is definitely related to voltage
potential.

Hugh Skillings' Fund. of Electric Waves: "Voltage from point 1 to
point 2 is the line integral of the electric field along any path from
point 1 to point 2. This is the amount by which point 1 is at a
higher potential than point 2."

Say PD = E^2/Z0 = H^2 * Z0. If you say the Power Density =
V^2/(R*m^2), and the R=Zo, then these will cancel, giving you E =
V/meter, which are the correct units. So here we are equating the
impedance of free space will a resistive impedance or load.

Roy, what do you think 1uV/meter really means in terms of how you
measure it? I mean, under what conditions must you have to measure
this 1uV/meter?

I'm starting to think that what this really means, is that an
exploring particle with a unit positive charge, when placed in a
electric field of 1uV/meter, will experience a change of voltage
potential of +1uV when it is moved directly towards an isotropic
radiator ("the potential of a point in space is the work required to
move to that point a unit positive charge, starting an infinite
distance away...potential increases as one positive charge is moved
closer to another positive charge" - Skilling).

> Good thing, too. Otherwise we'd all get electrocuted by the Earth's 100
> volt/meter field. (And that's on a day with no storm nearby.)
>

But that's a static field, so we don't have to worry about
touching metallic objects that aren't grounded.

> >
> > Perhaps the far-field measurements would require too sensitive a

> > field-strength meter? Or maybe it's just more convenient to measure
> > up close.
>
> No, it's far field measurements that are more common. One problem with
> making near field measurements is that the near field varies all over
> the map with the type of antenna and the exact spot where you're making
> the measurement. And it's of no importance at all to anything very far
> away at all. I've only seen near field probing done to locate the source
> of a problem emission. Compliance measurements are usually done with
> far-field techniques, in or at least at the fringes of the far field.
> The "within the near field" measurements I'm referring to are HF
> measurements done at distances that aren't firmly in the far field. (The
> far field boundary depends on the nature of the radiating structure, and
> is nebulous anyway.) The FCC addresses this issue for Part 15 somewhat
> in section 15.31(f).
>
> Roy Lewallen, W7EL

I was going to ask you to define "far-field", and i thought maybe
people defined this as a number of wave-legnths away, but if it's
nebulous like a lot of RF topics, then i would certainly understand.

Slick

2057. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 21:23:25 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307251323.3d17c97b@posting.google.com>
Source record: 111803

Roy Lewallen <w7el@eznec.com> wrote in message news:<vi2njhm7jk9q3a@corp.supernews.com>...
> Actually, Art, the dissention is mostly when *you* use the term
> efficiency, because for reasons of your own, you don't use it in the
> universally understood way.
>
> Roy Lewallen, W7EL

I recognise the admonishment and will accept it somewhat graciously

>
> Art Unwin KB9MZ wrote:
> > Dr Slick.
> > When the term efficiency is used on this newsgroup
> > it always leads to dissention.
> > As Roy pointed out efficiency is a ratio between two factors
> > X and Y only. Unfortunately in this newsgroup
> > people have a tendency to use Y in their derivation of efficiency
> > which results in people talking past each other.
> > I suspect we have a bit of that in this thread
> > Have a great day
> > Art
> >

2058. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 21:53:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f21a7ff$1_2@corp.newsgroups.com>
Source record: 111804

Dr. Slick wrote:
> I was going to ask you to define "far-field", and i thought maybe
> people defined this as a number of wave-legnths away, but if it's
> nebulous like a lot of RF topics, then i would certainly understand.

One could define far-field as the point where the E-field/H-field ratio
is and outward continues to be 377 ohm resistive.

The IEEE Dictionary defines "far-field region - The region of the field
of an antenna where the angular field distribution is essentially
independent of the distance from the antenna."
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2059. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 22:08:59 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfs9pg$h3s$1@slb2.atl.mindspring.net>
Source record: 111805
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

"Scott Unit 69" <scott_unit_69@yahoo.moc> wrote in message
news:3F2074D7.37980608@yahoo.moc...
>
>
> Scott Unit 69 wrote:
> >
> > > That makes no sense at all... What is 'key your elements' ?
> > >
> > > Do you mean to set your carrier frequency to the carrier frequencies
of the
> > > interfering BPL signal? If so say so.
> >
> > "elements" as in the individual di's and dah's the make up each
character.
> >
> > I've been looking at the .gif from Texas Star, and have already learned
> > to copy a few characters. The first one I learned is "3". All the calls
> > here have it. Also "k" and a few more in my call.
> >
> > dah-di-dah dah-dah-di-dah?
>
> Not K-Q...CQ...
>
> dah-di-dah-di dah-dah-di-dah?
>
> > I figured with my musical background, it would be easy. I just don't
like
> > you guys trying to force feed it to us. It won't look good on your
shoes. <:
> >
> > http://www.texasstar.com/code.gif

First off no one is forcing you to do CW. If you don't want to do it...then
dont. On the other hand many of you non cw types are forcing the rest of us
to lose CW. So who is doing what to whom???

As for the music and CW. Correct. Makes it much easier. Its the rhythm
that does it.

Tap your foot to a 4 x 1 cadence. Then tap your finger on the desk in
sequence with it. Tape it three times and you have a "S" tape it four
times you have a "H" tape it five times you have a "5".

Now do this. Keeping the foot going. Send a "V" di di dit dah.
Keep in cadence. See the rhythm ? great ain't it ?

Dan/W4NTI

2060. Re: Looking for info on a good triband antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 22:17:53 UTC
From: Elmer E Ing <EEI@dontbother.com>
Message-ID: <l0iUa.11535$ff.8565@fed1read01>
Source record: 111806

Maybe see what folks think about their beams and quads at URL:
http://www.eham.net/reviews/products/11
137 to look at !!

Personally I would NOT be without the WARC Bands -- 12M and 17M as well as
10, 15, 20M

Manufacturers roundup at URL:
http://ac6v.com/antdealer.htm

"Que" <dwarheit@nauticom.net> wrote in message
news:3f21abf5$1_2@news.nauticom.net...
> I want to replace my old 3 element TET triband antenna that has seen
better
> days (24 years on the tower). I am looking for any info on a very good
> replacement antenna. I can not have a turning radius over 17.5 feet due to
> property restrictions. Any info or recommendations would be appreciated.
>
> --
> This message has been scanned with Norton Antivirus 2003

2061. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 22:21:17 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <t3iUa.131145$sY2.58481@rwcrnsc51.ops.asp.att.net>
Source record: 111807

On the Textron C band and S band antenna range[s] that I managed we had
a practical, that is PRACTICAL, limit of 1000 wavelengths to establish
the far field pattern. I don't know if it is/was technically justified
but it was contractually defined.

Deacon Dave, W1MCE

W5DXP wrote:

> Dr. Slick wrote:
>
>> I was going to ask you to define "far-field", and i thought maybe
>> people defined this as a number of wave-legnths away, but if it's
>> nebulous like a lot of RF topics, then i would certainly understand.
>
>
> One could define far-field as the point where the E-field/H-field ratio
> is and outward continues to be 377 ohm resistive.
>
> The IEEE Dictionary defines "far-field region - The region of the field
> of an antenna where the angular field distribution is essentially
> independent of the distance from the antenna."

2062. Re: SGC Tuners with Dipoles ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 22:29:27 UTC
From: froggers <not.froggers@nospam.ntlworld.com>
Message-ID: <6biUa.2903$UR2.261441@newsfep2-gui.server.ntli.net>
Source record: 111808

> And how did you connect the dipole, that's 2 wires IIRC, to the
> SGC-coupler's single output terminal?

There's two terminals - the ceramic insulator high voltage one..... and
Earth !

Nick

2063. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 22:44:26 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f21b2ca$0$48902$edfadb0f@dtext02.news.tele.dk>
Source record: 111809

Hello

> Tune it for maximum noise or signal on the frequency. You should hear
> the motor noise on your receiver as the capacitor turns. Then fine
> tune it back and forth.

Right, just tune for max. noise or signal, please notice that some loop,s
are
very sharp and have a very small bandwidth. And if you can hear the motor
turning the capacitor, then return the antenna to the manufacture and tell
him to design his products properly.

Regards Max

2064. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 23:30:27 UTC
From: tnom@mucks.net
Message-ID: <43f3ivkldhvbr3f1vonanped2e0o10qv79@4ax.com>
Source record: 111810
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

>First off no one is forcing you to do CW. If you don't want to do it...then
>dont. On the other hand many of you non cw types are forcing the rest of us
>to lose CW. So who is doing what to whom???

What? "many of you non cw types are forcing the rest of us
to lose CW"

If the CW requirement is gone you can still do CW.

Who is forcing who? Is someone being forced when CW is a
requirement, or is someone being forced when someone else
believes that the CW requirement should be dropped?

2065. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 23:38:29 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307251538.535e8833@posting.google.com>
Source record: 111811

Roy Lewallen <w7el@eznec.com> wrote in message news:<vi2nb57rfnqhe2@corp.supernews.com>...
> One of the most serious and persistent problems you've had in
> communicating your antenna ideas is your insistence on creating and
> using your own unconventional definition of efficiency. As I've pointed
> out before, and to no effect, is that the term has a universally
> accepted definition with regard to antennas. As long as you continue to
> make up your own definition, you'll increase your difficulty in
> communicating your ideas. But it's a choice you've made.
>
> Roy Lewallen, W7EL

Roy, the die was cast years ago when anything "new" was trashed
without a hearing. I now accept that all is now known about antennas
except the really deep things that Cecil is so bravely pushing on with
where I failed.
Even if I was to demonstrate succesfully a different antenna I would
have as much success in persuasion as the U.S. Government is having at
home and abroad.
Just forget about my antenna and go with the common consensus that it
can't possibly be true since I have no credability. I now feel
comfortable with that analysis and expect that the back biting will
gradually go away as I conform with the crowd. Having a great time ,
My personal delight a Merc diesel has moved over the 1/4 mil mark and
I will keep it running for ever, even tho the wife bought me a Merc
diesel replacement for appearances sake which is why it has only 26K
miles on it since 97 and the miles on my beuty keeps getting higher.
Had the cylinder compression tested a while ago and it still matches
new specs !
Having a lot of fun with antennas especially watching two signals
merge on the S.A. as factors are changed together with change in
coupling.

OOOOOOps

I used that word "coupling" again,,,....I must go and wash my
mouth!
At least I am well equiped when winter arrives to ensure that I have
plenty to do.

>
> Art Unwin KB9MZ wrote:
> > Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhsk4n5lamhs29@corp.supernews.com>...
> >
> >>I hope you'll pardon me for amplifying this a little.

> >>
> >>If you put X watts into the primary of a transformer and extract Y watts
> >>from the secondary, the efficiency is Y/X by definition.
> >
> >
> > Yes Roy. The specifics of what is being discussed is all important
> > when looking at answers as well as what terms are being used to
> > measure 'efficiency' and to what ends.
> > As you are surely awawe I too look at antennas as transformers or
> > coupled circuits and thus the primary contributes very much in its own
> > way as far as radiation as does the secondary. Thus 'efficiency' as a
> > criteria of 'value'
> > is all important when using it as a term since as you point out it is
> > a ratio of two terms both of which have to be made very clear for the
> > term efficiency to be made clear
> > Thus in stagger tuning it is important to define your requirements in
> > terms of bandwidth (dual frequency radiation) or max gain (dual
> > radiators on the same frequency),the above bearing little difference
> > to old time receiver designwith multiple I.F. cans. It is in this
> > areana that I view stagger tuning or coupling
> > as being efficient in charactor. If I am incorrect in the above
> > assumptions I would welcome any correction from those well versed
> > inthe field.
> > Best regards
> > Art
> >
> >
> >>If you put X watts into one antenna and extract Y watts from an antenna
> >>coupled to it, and measure the efficiency of the "transformer" the same
> >>way as you did the conventional transformer, you'll find it has lousy
> >>efficiency. Why? Because a goodly fraction of the power you applied to
> >>the "primary" antenna never gets to the "secondary" antenna because it's
> >>radiated instead. As far as the "secondary" is concerned, it might as
> >>well have been converted to heat.
> >>
> >>If you look at the impedance of the "primary" antenna, you'll find an
> >>excess of resistance -- just enough, in fact, to account for the "lost"
> >>(radiated) power.
> >>
> >>This isn't a statement about how well coupled antennas function as
> >>antennas, whose purpose is to radiate after all. It's a statement about
> >>how well they function as a transformer. Poorly.
> >>
> >>Roy Lewallen, W7EL
> >>
> >>Dr. Slick wrote:
> >>
> >>>aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307221838.fcdf9b8@posting.google.com>...
> >>>

> >>>
> >>>>> 1. Two antennas (also called transducers) placed close together
> >>>>>actually can be considered a transformer, albeit a very inefficient
> >>>>>one.
> >>>>
> >>>>Humm...By antenna I assume it also means a radiator. This would
> >>>>suggest
> >>>>that a stagger tuned radiators would fall into the catagory discussed
> >>>>above.
> >>>>Now I have a problem with that statement, because I very much see it
> >>>>as a transformer which is VERY efficient and not as you stated "albiet
> >>>>a very inefficient one".
> >>>>Can you explain to me how a stagger tuned antenna migrate into
> >>>>inefficient radiators?
> >>>>Seems to me that Thevenin's theorem would show this as being
> >>>>incorrect !
> >>>>
> >>>
> >>>
> >>>
> >>> Well, two identical antennas spaced a few wavelengths apart can
> >>>be considered a transformer, but very inefficient compared to a "real"
> >>>transformer with identical primary and secondary turns, with an
> >>>appropriate toroid core. This would be because the core material will
> >>>increase the magnetic flux density, and will increase the coupling
> >>>between the two windings/transducers.
> >>>
> >>> Point is, the farther apart the antennas are, the less efficient
> >>>of a "transformer" they will be.
> >>>
> >>> I'm not familiar with stagger tuned antennas, although the name
> >>>would suggest that it is tuned for multiple resonances, so that the
> >>>antenna will be broadband.
> >>>
> >>>
> >>>
> >>>Slick

2066. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 23:44:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <uqf3ivoodivjp2t6ab7km532539or7nrtg@4ax.com>
Source record: 111812

On Fri, 25 Jul 2003 22:21:17 GMT, Dave Shrader
<david.shrader@comcast.net> wrote:

>On the Textron C band and S band antenna range[s] that I managed we had
>a practical, that is PRACTICAL, limit of 1000 wavelengths to establish
>the far field pattern. I don't know if it is/was technically justified
>but it was contractually defined.
>
>Deacon Dave, W1MCE

Hi Dave,

That was more for collimation than field Z characteristics. By 1000
Wavelengths you are in the Far field 100 times over; but when out 10
or 100 wavelengths, this still presents the antenna as a non-point
source. When links are built with short distances between identical
antennas, the computed antenna gains are often off significantly.
Same antennas pulled back will begin to exhibit expected, computed
gains.

73's
Richard Clark, KB7QHC

2067. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-25 23:56:42 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F21C398.FAE0BC48@shaw.ca>
Source record: 111813

Max wrote:
>
> Hello
>
> > Tune it for maximum noise or signal on the frequency. You should hear
> > the motor noise on your receiver as the capacitor turns. Then fine
> > tune it back and forth.
>
> Right, just tune for max. noise or signal, please notice that some loop,s
> are
> very sharp and have a very small bandwidth. And if you can hear the motor
> turning the capacitor, then return the antenna to the manufacture and tell
> him to design his products properly.
>
> Regards Max

Actually it is the digital signal pulsing the motor that is so easily
picked up. It's pretty hard to get rid of!
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2068. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 00:18:30 UTC
From: k4nlz - Dusty <k4nlz@comcast.net>
Message-ID: <kog3iv0a2oc37b0q1m6s9ag5s7k25ahku6@4ax.com>
Source record: 111815
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

your premise is flawed because you do not take into
consideration the entirety of ham radio. ham radio is
what it is because it is filled with a rich texture of history
and experience. Like the Kentucky Derby and
Wimbleton , for example. There are plenty of horse
races and tennis tournaments , but only one " ham radio.
(is this too complicated for you ??) The first attempt at a
codeless radio license resulted in Citizen's Band. Popular
in the '70s but wasted away to what it is now ... and include
the newer citizen's bands into this too. This , plus many people
are frequently too LAZY (or poorly motivated < yourself perhaps >
to continue the rich tradition of morse in HR) and eliminating the
morse requirement would " definitely " force the eventual end of
CW on the bands.
There are PLENTY of non morse opportunities , currently , in ham
radio (too many for my tastes) .... taking away the morse
requirement completely , would mean the end of the rich tradition of
hamming and rob everyone (that comes after) of the history and rich
experiences that morse can bring. (ever heard of " wolf hung ???
I doubt it ...!! understanding the spirit of woulf hung resolves it
all)
Ham radio without morse is NOT REAL hamradio ... it's " radio "
minus it's rich history and texture of life.

there I said that ......

dusty
k4nlz

morse is joyous and something EVERY serious ham radio enthusiast
should learn the love (of radio) with-in . the ethereal bliss of
morse communication " cannot " be merely spoken of , it must be "
personally " (internally) experienced to be fully appreciated.
traditional " ham radio " is NOT really ham radio without it. if
you have experienced this bliss personally , you understand
completely , if NOT ... you do not fully appreciate ALL that ham
radio offers. either you " have , or you are still not " there "
yet. there is FAR more to morse than many people appreciate or
understand ... I highly recommend that you experience it for yourself,
completely , ... then YOU will understand also. (and be MUCH
richer for the experience)

>
>If the CW requirement is gone you can still do CW.

>
>Who is forcing who? Is someone being forced when CW is a
>requirement, or is someone being forced when someone else
>believes that the CW requirement should be dropped?

2069. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 00:21:59 UTC
From: Ed Cregger <ecregger@hotmail.com>
Message-ID: <aHjUa.1612$R43.519@fe01.atl2.webusenet.com>
Source record: 111816

Now why would anyone want to do such an anti-social thing?

Ed Cregger

"Dominick(dblacklab)" <dblacklab@netzero.net> wrote in message
news:bfsh8a$i5obn$1@ID-202017.news.uni-berlin.de...
> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> Help! Please!
>
>

2070. Re: Cushcraft MA5V band coverage

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 00:48:00 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <i4j3ivcs071tfrbh75cmu1lstv2r6kp62v@4ax.com>
Source record: 111789

On 24 Jul 2003 21:37:53 -0700, Javier Henderson <javier@KJSL.COM>
wrote:

>I've a Cushcraft MA5V, which I bought a couple of years back under
>the impression that it covers 10 through 20 meters.
>
>The text on Cushcraft's website states that coverage. But, the little
>spec table below it indicates coverage from 6m to 20m.
>
>What gives?
>
>Relevant URL:
>
>http://www.cushcraft.com/amateur/details.asp?catid=92
>
>73,
>
>-jav w6vms

In the AES catalog, the ma5v is rated for 20-10, the ma6v is rated for
20-6. Maybe there is some overlap of instructions on the two units.

In the pictures, the ma6v appears to have a vertical element that is
missing in the ma5v.

Bob
k5qwg

2071. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 00:54:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f21d270_6@corp.newsgroups.com>
Source record: 111817
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

Dan/W4NTI wrote:
> First off no one is forcing you to do CW. If you don't want to do it...then
> dont. On the other hand many of you non cw types are forcing the rest of us
> to lose CW. So who is doing what to whom???

No one is forcing you to lose CW. You can't have it both ways.
Exactly what is wrong with freedom of choice in a hobby in a free
society? What's wrong with live and let live?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2072. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 01:05:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f21d4e2_6@corp.newsgroups.com>
Source record: 111818

Art Unwin KB9MZ wrote:
> Roy, the die was cast years ago when anything "new" was trashed
> without a hearing. I now accept that all is now known about antennas
> except the really deep things that Cecil is so bravely pushing on with
> where I failed.

One slight correction, Art. Because of the similarity between light and radiated EM waves, most things about antennas are known, at least to the limit of the models to handle reality.

However, it appears to me that some things have been overlooked when the coherent EM waves are confined to a one-dimensional transmission line. Those things that have been overlooked are what I am pursuing and as far as I can determine, they happen only inside a transmission line or at a thin-film non-reflective surface using coherent light waves. That's what makes it special.

That is not to conclude that you haven't discovered something special, just that my focus is Z0-match points inside transmission lines and non-glare thin-film coatings involving orthogonal coherent light.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2073. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 01:10:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f21d634$1_6@corp.newsgroups.com>
Source record: 111719

Dominick(dblacklab) wrote:
> Can anyone help me "homebrew" a goos FM Pirate radio antenna?

Does "goos", in this context, mean merganser? i.e. a fish duck?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2074. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 01:16:44 UTC
From: "Gareth (G1LVN)" <gareth@mycallsign.freeserve.co.uk>
Message-ID: <bfsl3gbnv1@newsg4.svr.pol.co.uk>
Source record: 111720
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f21d270_6@corp.newsgroups.com...
> Dan/W4NTI wrote:
> > First off no one is forcing you to do CW. If you don't want to do it...then
> > dont. On the other hand many of you non cw types are forcing the rest of us
> > to lose CW. So who is doing what to whom???
>
> No one is forcing you to lose CW. You can't have it both ways.
> Exactly what is wrong with freedom of choice in a hobby in a free
> society? What's wrong with live and let live?
> --

just completed my first 20m stateside QSO...

... with W1EVT logged between 0011 and 0018 UTC. I was 579 (40 watts into a
quarterwave vertical) he was 599, his name was Clem, his QTH Boston......

and the mode? - A1A (CW) of course at about 14wpm, not bad for a "no-coder"

--
73 de G1LVN
Gateway details at: www.g1lvn.org.uk
(change "mycallsign" to reply by email)
send spam to abuse@theplanet.net

2075. Test

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 01:36:25 UTC
From: Pat Whelton <pwhelton@earthlinkNOSPAM.net>
Message-ID: <tWkUa.1249$e4.1180@newsread4.news.pas.earthlink.net>
Source record: 111721

Please ignore.

2076. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 01:38:12 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F21DB84.E30C092@cwis.net>
Source record: 111722

"Dominick(dblacklab)" wrote:
>
> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> Help! Please!

Step One:
Find an unused pirate (preferably FM).

Step Two:
Make feedline connections to pirate.

Step Three:
Feed signal to pirate.

2077. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 02:02:18 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <KilUa.130444$OZ2.25630@rwcrnsc54>
Source record: 111723

```
Just not comprehending, are you?
"Nisse" <nisse@manqwr.se> wrote in message
news:3F20E1ED.5C3CCA4C@manqwr.se...
>
>
> CW wrote:
>
> > Another thing that you can be sure of. Rarely does it matter.
>
> Then, it does not matter how one attaches them either (if it is
> rain-proof).
> Discussion unneccesary. #QED
>
> >
> > "Nisse" <nisse@manqwr.se> wrote in message
> > news:3F1FE3BE.3846DBD5@manqwr.se...
> > > (the only thing You can be sure of, it is not 50
> > > ohm
> > > characteristic impedance)...
> > >
> > >
>
```

2078. How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 02:19:00 UTC
From: "Dominick(dblacklab)" <dblacklab@netzero.net>
Message-ID: <bfsh8a$i5obn$1@ID-202017.news.uni-berlin.de>
Source record: 111814

Can anyone help me "homebrew" a goos FM Pirate radio antenna?
Help! Please!

2079. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 03:23:19 UTC
From: W6DKN <w6dkn-nospam-@qsl.net>
Message-ID: <blmUa.1715$R43.869@fe01.atl2.webusenet.com>
Source record: 111724

W7TI wrote:
> On 24 Jul 2003 21:19:45 -0700, john-shrove@attbi.com (John Shrove)
> wrote:
>
>>>> www.dslextreme.com/users/teeaye/coax.jpg
>>
>> Terrible picture. it looks like a cold joint.
>
> --
>
> Terrible interpretation. Joint is perfect.

It might be, but the picture is still pretty poor... makes it hard to tell
just how good the solder job really is.

<<< Dan >>>

2080. Re: Looking for info on a good triband antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 03:59:32 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <H_-dnYw5B4M3YbyiXTWJkw@comcast.com>
Source record: 111725

"Que" <dwarheit@nauticom.net> wrote in message
news:3f21abf5$1_2@news.nauticom.net...
> I want to replace my old 3 element TET triband antenna that has seen
better
> days (24 years on the tower). I am looking for any info on a very good
> replacement antenna. I can not have a turning radius over 17.5 feet due to
> property restrictions. Any info or recommendations would be appreciated.
>
I am really happy with the HyGain TH3MkIV. At 40 feet it is a bit low for
20, but still works well. My first hour on 15 SSB got me China, Mongolia,
and Thailand from NE US. I think it just makes your radius.

Tam/WB2TT

2081. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 04:05:21 UTC
From: richardharrison@webtv.net
Message-ID: <28990-3F21FE01-147@storefull-2313.public.lawson.webtv.net>
Source record: 111726

Ian, G3SEK wrote:
"---the Bird "wattmeter" is not really a power sensor."

The Bird wattmeter indicates the watts, joules per second rate at which energy flows, well enough to be accepted as a world standard portable instrument.

Denigrating the Bird is specious because my statement, "Your Bird wattmeter will show a forward power but no reflected power---." is true! The statement only requires the right Bird element to indicate the presence or absence of energy flow in one direction or the other. The Bird is eminently capable.

I used the bird because those familiar with it are confident in its ability to separate forward power from reverse power. IEEE defines power as energy in motion, so it could be in perpetual circulation and never used, but it is still power when the volts and amps coincide.

Best regards, Richard Harrison, KB5WZI

2082. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 05:10:18 UTC
From: richardharrison@webtv.net
Message-ID: <6462-3F220D3A-126@storefull-2318.public.lawson.webtv.net>
Source record: 111729

Cecil, W5DXP wrote:
"What causes the match? The cancellation of reflections."

This is like Abbot and Costello. You got it! Who`s on first!

You have a source which only delivers energy at a certain volts to amps ratio, period!

You have a load which only accepts energy at a certain volts to amps ratio, period!

When the above ratios are in fact identical there is no problem. When the above ratios are different something has to give and it isn`t either ratio, Zo or ZL. Instead, the load takes what the source can deliver and rejects the surplus volts or amps whichever is the case, as are created by ZL, and the limited deliverability created by the Zo. The surplus generates a reflected wave as Cunningham recounted with his description of missing inductance and capacitance in the missinng continuation of the transmission line (A short on the line vitiates the capacitance etc.). The explanation is logical and I recommend his broadcast antenna book.

What`s not to understand about matching? When the load is not matched, you add the incremental receptivity required to take the surplus current or voltage at the load, so that the load, and the stub in Terman`s example, are a perfect match and there is no longer any surplus to be reflected. The impedance of the load has been adjusted, by the addition of a stub in Terman`s example, to Zo. Terman says the wave from the stub cancels the wave from the mismatched load. No doubt a shorted stub makes a reflection. The reflected volts from the stub are exactly equal and opposite to the reflected surplus volts from the load at the junction, and Terman says there is no reflection toward the generator.

I never won an argument with Terman, though I tried. I believe there is no reflection past the stub back toward the generator. If so, and it certainly is so, I`ve put those stubs out at the antenna myself and they create a match when adjusted properly, the energy on a lossless line will be the same at the generator and anywhere on lhe line. It`s flat.

Best regards, Richard Harrison, KB5WZI

2083. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 05:10:27 UTC
From: di540@FreeNet.Carleton.CA
Message-ID: <bft2g3$8fo$1@freenet9.carleton.ca>
Source record: 111727
Cross-posted to:
rec.radio.shortwave,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy

"Brenda Ann" (brendad@shinbiro.com) writes:
> "James" <james@nospamforme.org> wrote in message
>> I think this bpl is a ploy to trash the bands so they can sell them off
>> to highest bidders
>> once the tv stations move to digital and leave the hf bands.
>>
>> jim
>
> There is no broadcast television in the HF bands. Channel 2 is 54-60 MHz,
> low VHF...but that part of the band (up through channel 5) is also within
> the scope of BPL frequencies..

But the motive still holds. Have you noticed that the ARRL is
collaborating w/the bpl providers to place the interference on SW bands,
where it will have 'optimum' impact on AM transmissions, rather than
placing it on VHF bands, such as 6 metres, or the FM broadcast band,
where the interference would have less of an effect, in relative terms?

Obviously, such a strategy will help to clear out the low-rent tenants
currently cluttering the U.S. SW spectrum, so it can be gentrified for
a better class of paying customers. On the ARRL website there's an
article of one use for BPL which explains why they aren't designing
asymmetry into it: the ability to hook appliances into the web. You've
probably heard of Coke machines hooked up to the internet. Imagine
a frige that can read the RFId tags of products inside it, and can
transmit that data to your local Safeway. They wouldn't want to
restrict uploads for those kinds of uses.

There are also trucking companies that want to get exclusive use of
HF spectrum to track their shipments.

2084. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 05:29:52 UTC
From: richardharrison@webtv.net
Message-ID: <6462-3F2211D0-128@storefull-2318.public.lawson.webtv.net>
Source record: 111730

Art Unwin wrote:
"It is a pity you do not have an interest in computor programs---."

If Art would publish impedance, gain, directivity, and bandwidth comparisons of his antenna against a reference dipole at the same height, from his computer programs, we might all know more about it.

Best regards, Richard Harrison, KB5WZI

2085. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 05:40:27 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F221436.8060909@get.lost>
Source record: 111728
Cross-posted to:
rec.radio.shortwave,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy

Maximo Lachman wrote:

> But the motive still holds. Have you noticed that the ARRL is
> collaborating w/the bpl providers to place the interference on SW [snip]
> ...
> Obviously, such a strategy will help to clear out the low-rent tenants
> currently cluttering the U.S. SW spectrum, so it can be gentrified for
> a better class of paying customers.[snip]
> ...
> There are also trucking companies that want to get exclusive use of
> HF spectrum to track their shipments.

Great. If you could now only work in Roswell, grassy knoll, Elvis, moon landing hoax, the CIA and the Jews, you'd have it made.

BPL is bad enough without idiotic conspiracy theories.

WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

2086. Re: phasing coils

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 06:20:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vi47epl41hfk1b@corp.supernews.com>
Source record: 111731

One caveat about modeling collinear phasing stubs with EZNEC or other NEC based programs: The stubs do radiate, so you can't use transmission line models for them -- doing so results in some pretty seriously wrong answers. You have to use wires to model the stubs. If you do, you can get accurate results.

Roy Lewallen, W7EL

Tom Bruhns wrote:
> . . .
> The coaxial collinear works fine if done properly. You do NOT have to
> put the thing in wax to make it work. I wrote a paper on how to do it
> properly, but the key is to use sections 1/2 wave long taking into
> account the VF of the line, so that the voltage across each gap
> between adjacent sections is the same, and all in phase. The
> feedpoint impedance will be somewhat reactive since the elements are
> shorter than a half-wave, and the impedance will depend on the number
> of sections (since they are all fed in parallel, and there's a mutual
> impedance to consider), but you just provide the proper matching
> network for that, and you provide proper decoupling from the feedline.
> It's easy to put together an eznec or similar model to show that it
> works fine in air, no wax needed. And it works in practice as well as
> in theory.
> . . .

2087. Re: AM/FM Reception on a new RCA/Radio Shack All In One unit DVD/CD,Cable,Aux Inputs etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 06:20:52 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <g774ivss35l5erkjdo82g1qo1g1ogllsaf@4ax.com>
Source record: 111798

On Tue, 22 Jul 2003 14:42:44 GMT, "Rev Tom Cox" <rvtomcox@epix.net>
wrote:

>As he subject implies I purchased an all in one unit,with surround sound
>etc. The problem is I have yet to get even a static or buzz not to mention a
>real radio station on either the am or fm mode. The cheapos sent a small
>dipole antenna for the fm,(who wants a dipole antenna on their living room
>wall, and an obviously just as cheapo am loop antenna.

For my fancy stereo, I use a cheapo FM dipole lying on the floor, and
a cheapo AM loop. Pulls in stations nicely in this metro area.

Since the *other* radios in your house work, I'd take the thing back,
get a refund, and buy something else. If they ask why, turn the thing
on and let them try to tune in a station.

Bob
k5qwg

> I have now tried a
>$35 indoor antenna for am/fm that is under 12 volt power to boost signal.
>Still nothing works. The unit was in the shop for the dvd player and I ask
>them to check the function of the am/fm and the repair tag came back as all
>ok. I am surrounded by trees, but frankly all the other radios in the
>house work from my small portables to the large receiver that was replaced
>by the new unit.
>Does anyone have any ideas as to what my next step should be? Assuming the
>am/fm function works then I am having trouble with the antenna, and an
>outside antenna is not out of the question but does not satisfy the am side.
>Open to all suggestions and Thanks for listening to a real neophyte in this
>area.

2088. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 06:26:43 UTC
From: di540@FreeNet.Carleton.CA
Message-ID: <bft6v3hur1@freenet9.carleton.ca>
Source record: 111732
Cross-posted to:
rec.radio.shortwave,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy

Zoran Brlecic (...WA7AA...@get.lost) took the bait, and flamed:
> Maximo Lachman wrote:
>> But the motive still holds. Have you noticed that the ARRL is
>> collaborating w/the bpl providers to place the interference on SW [snip]
> > ...
>> Obviously, such a strategy will help to clear out the low-rent tenants
>> currently cluttering the U.S. SW spectrum, so it can be gentrified for
>> a better class of paying customers.[snip]
>> ...
>> There are also trucking companies that want to get exclusive use of
>> HF spectrum to track their shipments.
>
> Great. If you could now only work in the Jews, you'd have it made.

You must be a lifetime member of ARRL, eh? And you would snip the
reference to the article at ARRL's site on other uses for bpl,
giving details on how it is collaborating in the bpl effort, eh?
It 's typical of scum like you to make such an attack, since you are
too lazy to look up the fact that there was a coke machine on the net,
the 1st one in Pittsburg. Glenn Hauser had a report on a trucking
company testing HF tracking (or perhaps a reference to Kim's show,
when it was still on VOA). It's nice of the scum at ARRL to give
free consulting services to those who have more than enough time &
money at hand to trash the SWL bands.

2089. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 07:43:11 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <iY+yZsGPEjI$EAAT@ifwtech.co.uk>
Source record: 111733

Richard Harrison wrote:
>Ian, G3SEK wrote:
>"---the Bird "wattmeter" is not really a power sensor."
>
>The Bird wattmeter indicates the watts, joules per second rate at which
>energy flows, well enough to be accepted as a world standard portable
>instrument.
>
Sorry, Richard, but what is it about the following simple points that you're so stubbornly determined not to understand?

0. The practical usefulness of a Bird wattmeter is not in dispute. I have never denigrated the practical usefulness of the Bird - like thousands of others, I own a Bird 43, use it all the time and wouldn't be parted from it. But its *practical* usefulness is not relevant to the following three points about transmission-line *theory*.

1. The Bird "wattmeter" does not in fact sense power. At the detailed level, it senses voltages and currents in its internal transmission line, and then sums and subtracts them to give RV voltages that the diode detects. I repeat, there is no sensing of power as such, and no detection of power as such.

2. It only indicates power due to its calibration. The calibration into a matched load (no reflections) is not in dispute. But with mismatched loads you need the help of transmission line theory to interpret what the "forward and reflected power" readings actually mean.

3. But in this discussion, transmission line theory is under question. Because the Bird's forward and reflected power indications rely on that theory, they logically cannot be used as external evidence of what the forward and reflected power flows really are... or even whether they truly exist.

So, I stand by exactly what I said: When discussing transmission-line theory, the Bird's indications of forward and reflected power are (in short) "part of the argument, not part of the answer".

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2090. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 10:58:05 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <7BycnYvrrNQhw7-iXTWJjw@crocker.com>
Source record: 111734

sure, take a resistor rated to dissipate as much power as your transmitter,
encase in metal can, add connector, and away you go.

"Dominick(dblacklab)" <dblacklab@netzero.net> wrote in message
news:bfsh8a$i5obn$1@ID-202017.news.uni-berlin.de...
> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> Help! Please!
>
>

2091. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 11:05:10 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <SQGdnUOc74T5_b-iU-KYgg@crocker.com>
Source record: 111735

p.s. this one has the added advatage of makeing it a legal pirate station.

"David Robbins" <k1ttt@arrl.net> wrote in message
news:7BycnYvrrNQhw7-iXTWJjw@crocker.com...
> sure, take a resistor rated to dissipate as much power as your
transmitter,
> encase in metal can, add connector, and away you go.
>
> "Dominick(dblacklab)" <dblacklab@netzero.net> wrote in message
> news:bfsh8a$i5obn$1@ID-202017.news.uni-berlin.de...
> > Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> > Help! Please!
> >
> >
>
>

2092. Varactor tuning on a magnetic loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 11:16:33 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f226310$0$48898$edfadb0f@dtext02.news.tele.dk>
Source record: 111736

Hello

I am building a magnetic loop antenna for recieving only, and I was
wondering
if it was possible to replace the mechanical motrodriven variable capacitor
with a varactor tuning diode ????

Regards Max

2093. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 11:58:22 UTC
From: Pappy@USA.net
Message-ID: <3F226CDE.A4F1D1E9@USA.net>
Source record: 111737

"Dominick(dblacklab)" wrote:
>
> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> Help! Please!

This guy asks a logical question and you people have to pull his chain.

Wake the heck up.

Dom, all I use is a 14 gage wire as high in the trees and conected to my
radio.

Works good.

2094. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 12:41:26 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <3F2276AF.6040503@tampabay.rr.com>
Source record: 111739

wake the hell up??
they are awake and doing exactly as they should it would be illegal to
build and use a pirate radio station and if anyone helped him it would
be aiding and a betting and could cause a licensed ham to lose the
licenese he worked so hard for
if this guy cant figure out how to build a simple antenna he will never
get the transmitter working he should stick with internet broadcasting

2095. Re: Looking for info on a good triband antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 12:45:12 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <3F227791.6020700@tampabay.rr.com>
Source record: 111738

my local ham club is hooked on the Force12 C3 antennas they used them
during field day and scored something like 12000 points so they work
really well
check them out
good luck

2096. Staples and twin lead

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 13:02:35 UTC
From: Robert McCown <bmccown.nospam@cox.net>
Message-ID: <LZuUa.113784$o86.66095@news1.central.cox.net>
Source record: 111740

Is is a bad thing to hold twin lead 450 ohm feedline in place with staples?
I'm thinking the kind that come from a staple gun or the insulated ones you drive with a hammer.
If not, should I put the staples through the dielectric or over the wires?
Thanks.
Bob AB0OD

2097. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 13:27:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2282c9$1_4@corp.newsgroups.com>
Source record: 111741
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

Gareth (G1LVN) wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>>Exactly what is wrong with freedom of choice in a hobby in a free
>>society? What's wrong with live and let live?
>
> just completed my first 20m stateside QSO...
>
> ... with W1EVT logged between 0011 and 0018 UTC. I was 579 (40 watts into a
> quarterwave vertical) he was 599, his name was Clem, his QTH Boston......
>
> and the mode? - A1A (CW) of course at about 14wpm, not bad for a "no-coder"

Through freedom of choice, CW is my favorite mode. I would have used
my free will to learn and use CW even if there had never been a
requirement to do so.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2098. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 13:38:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f228558_4@corp.newsgroups.com>
Source record: 111742

Richard Harrison wrote:
> What`s not to understand about matching?

The energy and momentum in EM waves, particularly, the energy and momentum in the wave reflected from a mismatched load. What happens to that energy and momentum? We know it joins the forward wave. How does that energy and momentum get reversed? A virtual impedance is a result and not the cause of anything.

> The reflected volts from the stub are exactly equal and
> opposite to the reflected surplus volts from the load at the junction,
> and Terman says there is no reflection toward the generator.

I'm not arguing that point. What happens to the energy in the two waves that have their voltage and current amplitudes equal in amplitude and opposite in phase? There is no doubt those waves cancel and there is no reflection toward the generator. But what happens to the intrinsic energy that pre-existed the cancellation event?

> I never won an argument with Terman, though I tried. I believe there is
> no reflection past the stub back toward the generator.

No argument about that. The question is where did the energy and momentum go when those two waves were canceled thus eliminating reflections back toward the generator. Waves can be canceled. The energy in those waves cannot be destroyed.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2099. Re: Varactor tuning on a magnetic loop

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 13:44:58 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f22852c@shknews01>
Source record: 111743

A simple, possible setup can be found at:

http://www.csd.uwo.ca/~nic/radio/tune.html

Nic.

"Max" <Max_Jens@post9.tele.dk.invalid> wrote in message
news:3f226310$0$48898$edfadb0f@dtext02.news.tele.dk...
> Hello
>
> I am building a magnetic loop antenna for recieving only, and I was
> wondering
> if it was possible to replace the mechanical motrodriven variable
capacitor
> with a varactor tuning diode ????
>
> Regards Max
>
>

2100. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 13:45:15 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f228701_4@corp.newsgroups.com>
Source record: 111744

Ian White, G3SEK wrote:
> So, I stand by exactly what I said: When discussing transmission-line
> theory, the Bird's indications of forward and reflected power are (in
> short) "part of the argument, not part of the answer".

Ian, if you can provide an example of standing waves (in a single source, single feedline, single load system) without forward and reflected waves, you can indeed discredit the Bird wattmeter. If you cannot, it seems that forward and reflected waves indeed do exist and the Bird wattmeter design is based on a valid assumption.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2101. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 14:39:57 UTC
From: richardharrison@webtv.net
Message-ID: <395-3F2292BD-39@storefull-2316.public.lawson.webtv.net>
Source record: 111745

Ian, G3SEK wrote:
"1. The Bird wattmeter does not in fact sense power."

The speedometer does not measure miles nor hours, but it can satisfactorily indicate miles per hour. So, what?

"2. It only indicates power due to its calibration."

Without calibration most instruments only serve as crude indicators. The usual Bird is calibrated for a 50-ohm line which enforces its Zo. Use the common Bird in a different line and its calibration is off.

"3. But in this discussion, transmission line theory is under question."

I suggested using the Bird as an indicator of transmission line / load match, period. This is based on balance in the directional coupler which is usually good by design and factory adjustment. Many Bird users have adjusted their lload matching networks for minimum reflected power indication.

My allusion to the Bird was meant to show that it makes no difference if you have two equal and opposite waves traveling in the reverse direction on a line or no waves in that direction at all. A Bird wattmeter operating properly should indicate zero reflected power.

Best regards, Richard Harrison, KB5WZI

2102. Re: TA-33 Beam question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 15:09:08 UTC
From: Eskay <sieb_kNOS@PAMyahoo.ca>
Message-ID: <6PwUa.46682$PD3.4497887@nnrp1.uunet.ca>
Source record: 111746

'Doc wrote:
> Dave,
> Rather than setting the beam on a ladder to try to
> tune it, stand it up so that it's pointed straight up.
> The step-ladder thing won't get it even close.
> As for using a tripode on your roof, it just depends
> on how your house is built. Is it in good structural
> shape? Built strong enough to take the weight and other
> stresses that will be present? Beats me! You'll have
> to answer that.
> 'Doc
>
> PS - If you decide to sell, I'll give you $20, you pay
> shipping. After all, it's at least 7 years old. All
> the electrons have leaked out of it by now...

Doc you're all heart..
Eskay...

2103. Re: Staples and twin lead

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 15:10:40 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bfu5lh$is0o0$1@ID-134747.news.uni-berlin.de>
Source record: 111747

I will be interested to see the replies. I have
mine hung with a series of TV coax cable clips. I
use the portion that goes over the coax to contain
one of the wires. I have not noticed any
difference, pre and post hanging. I was careful
to avoid hard right angles.

--
73 es cul

wb3fup
a Salty Bear

"Robert McCown" <bmccown.nospam@cox.net> wrote in
message
news:LZuUa.113784$o86.66095@news1.central.cox.net...
> Is is a bad thing to hold twin lead 450 ohm
feedline in place with staples?
> I'm thinking the kind that come from a staple
gun or the insulated ones you
> drive with a hammer.
> If not, should I put the staples through the
dielectric or over the wires?
> Thanks.
> Bob AB0OD
>
>

2104. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 15:45:06 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bfu7ll$21a$1@slb9.atl.mindspring.net>
Source record: 111748
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f21d270_6@corp.newsgroups.com...
> Dan/W4NTI wrote:
> > First off no one is forcing you to do CW. If you don't want to do
it...then
> > dont. On the other hand many of you non cw types are forcing the rest
of us
> > to lose CW. So who is doing what to whom???
>
> No one is forcing you to lose CW. You can't have it both ways.
> Exactly what is wrong with freedom of choice in a hobby in a free
> society? What's wrong with live and let live?
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

Not a thing....but do you consider the campaign run by No Code International
a exercise in free speech, or a attack on the Morse testing requirement? I
consider it an attack. Which has NOTHING AT ALL to do with Free Speech.

Dan/W4NTI

2105. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 16:06:46 UTC
From: richardharrison@webtv.net
Message-ID: <28282-3F22A716-70@storefull-2313.public.lawson.webtv.net>
Source record: 111749

Cecil, W5DXP wrote:
"How does that energy and momentum in EM waves particularly the energy and momentum in the wave reflected from a mismatched load (get reversed?)"

I recall being instructed about the "Ferranti Effect" which doubles the volts at the end of an open-circuit line, and its corollary, doubling the current in a short-circuited line. These, using line capacitance and inductance are shown, as Cunningham does, to launch a wave in the reverse direction, a reflection. Less extreme mismatch produces smaller reflection.

A discontinuity in Zo causes reflection on a transmission line. Impedance variations, including virtual repetitions of opens or shorts, occur at cyclical distances back from a discontinuity. The volts, amps, and impedance anywhere back from a discontinuity create a vector sum of the incident and reflected waves. Sums of the voltages and amps create voltage and current standing waveforms. The incident and reflected waves themselves are quite steady. Standing waves are more form than substance but have their effects.

Cecil also wrote:
"What happens to the energy in the two waves that have their voltage and current amplitudes equal in amplitude and opposite in phase?"

These two waves continue to circulate. One in the short length of transmission line between the mismatched load and the stub placed on the line to correct the mismatch. The other continues to circulate in the stub. This circulation is established during the transient period and continues until it is disestablished. The reflection which would have prevailed on the line between the generator and the stub junction with the line, were the stub not there, is simply absent. The line sees a combined load plus stub impedance at their junction of Zo.

There is no reflected wave in the line in the length between the generator and the stub junction with the line. So, there`s no extra energy to be accounted for.

Best regards, Richard Harrison, KB5WZI

2106. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 16:57:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f22b3fd_7@corp.newsgroups.com>
Source record: 111751

Richard Harrison wrote:
> I suggested using the Bird as an indicator of transmission line / load
> match, period. This is based on balance in the directional coupler which
> is usually good by design and factory adjustment. Many Bird users have
> adjusted their lload matching networks for minimum reflected power
> indication.

As a data point, Using Bird wattmeters, the reflected power was subtracted
from the forward during the 75m mobile shootouts to determine the power
delivered to the mobile antenna.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2107. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 16:57:36 UTC
From: Panzer240 <panzer240@hotmail.com>
Message-ID: <Xns93C48E06BD1AFfw190a8@142.77.1.194>
Source record: 111750
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

k4nlz - Dusty <(no spam)k4nlz@comcast.net> wrote in
news:kog3iv0a2oc37b0q1m6s9ag5s7k25ahku6@4ax.com:

> (ever heard of " wolf hung ???
> I doubt it ...!! understanding the spirit of woulf hung resolves it
> all)
> dusty
> k4nlz
>

Minor thing but I believe that would be Wouff Hong. :) Take a look here :

http://www.amfone.net/wouff.htm

IT goes back to the days of The Old Man himself Hiram Percy Maxim>

--
Panzer

2108. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 17:05:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f22b5d2$1_7@corp.newsgroups.com>
Source record: 111752
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

Dan/W4NTI wrote:
> Not a thing....but do you consider the campaign run by No Code International
> a exercise in free speech, or a attack on the Morse testing requirement? I
> consider it an attack. Which has NOTHING AT ALL to do with Free Speech.

I'm a Libertarian. Libertarians believe in the least amount of governmental
intrusion and control as is necessary. For instance, Libertarians are against
seat belt laws, motorcycle helmet laws, and I assume also against unnecessary
governmental requirements like a driver's test using a stick shift and Morse
code. I suspect that the new hams who learn Morse code because they want to
will be better members of the ham community than the ones who learned Morse
code because they had to even though they hated the idea of being forced to.
I suspect they will certainly not bitch about Morse code testing 24/7.
--
73, Cecil http://www.qsl.net/w5dxp

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2109. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 17:09:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f22b6cf$1_7@corp.newsgroups.com>
Source record: 111753

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "How does that energy and momentum in EM waves particularly the energy
> and momentum in the wave reflected from a mismatched load (get
> reversed?)"
>
> I recall being instructed about the "Ferranti Effect" which doubles the
> volts at the end of an open-circuit line, and its corollary, doubling
> the current in a short-circuited line. These, using line capacitance and
> inductance are shown, as Cunningham does, to launch a wave in the
> reverse direction, a reflection. Less extreme mismatch produces smaller
> reflection.

But that is not what happens when two waves cancel. For an idea of what happens, please reference Reflections II, page 23-8,9. If the two voltages are 180 degrees out of phase and the two currents are 180 degrees out of phase, neither one of them can double. Calling that a virtual short or virtual open is incorrect, IMO.

> Cecil also wrote:
> "What happens to the energy in the two waves that have their voltage and
> current amplitudes equal in amplitude and opposite in phase?"
>
> These two waves continue to circulate.

I forgot to say they are traveling in the same direction and that they are coherent. The two waves disappear from existence. What happens to the energy they contained?
--
73, Cecil http://www.qsl.net/w5dxp

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2110. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 17:18:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <drd5ivk35sj8amahaged4oqcivjfn01fum@4ax.com>
Source record: 111754

On Sat, 26 Jul 2003 00:29:52 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Art Unwin wrote:
>"It is a pity you do not have an interest in computor programs---."
>
>If Art would publish impedance, gain, directivity, and bandwidth
>comparisons of his antenna against a reference dipole at the same
>height, from his computer programs, we might all know more about it.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

This would be consistent with one who is interested in antennas.

73's
Richard Clark, KB7QHC

2111. Re: CORRECTION!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 17:19:49 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <VKyUa.134138$GL4.35060@rwcrnsc53>
Source record: 111755
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
news:bfu7ll$21a$1@slb9.atl.mindspring.net...
> Not a thing....but do you consider the campaign run by No Code
International
> a exercise in free speech,

Yes.

or a attack on the Morse testing requirement?

Yes.

In the back of your mind, you realize that the usefulness of CW is low
enough that the majority of people will never bother to learn it if not
forced to do so. CW, as a requirement, will be dropped. We will then see
what value peopls put on it.

2112. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 17:38:02 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <iFziO7R6xrI$EAhU@ifwtech.co.uk>
Source record: 111756

W5DXP wrote:
>Ian White, G3SEK wrote:
>> So, I stand by exactly what I said: When discussing transmission-line
>>theory, the Bird's indications of forward and reflected power are (in
>>short) "part of the argument, not part of the answer".
>
>Ian, if you can provide an example of standing waves (in a single source,
>single feedline, single load system) without forward and reflected waves,
>you can indeed discredit the Bird wattmeter.

That's utterly dishonest quoting. You should be ashamed of yourself.

You are perfectly aware that earlier in the same message, I said:

>1. The Bird "wattmeter" does not in fact sense power. At the detailed
level, it >senses voltages and currents in its internal transmission
line, and then sums >and subtracts them to give RF voltages that the
diode detects. I repeat, there >is no sensing of power as such, and no
detection of power as such.

My point is that all directional couplers DO work by sensing forward and
reflected waves of voltage and current BUT NOT WAVES OF POWER.

The inner workings of every directional coupler can be explained
completely in terms of waves of voltage and current. That includes
resistive bridges, Bruene bridges and parallel-line couplers (of which
the coupler in the Bird is a sub-class). They all work because E and I
waves are phasors, and the construction of the coupler makes them add in
one direction and subtract in the other. There's an example of a
detailed analysis, about the Bruene bridge but applicable in principle
to other types as well, at:
www.ifwtech.co.uk/g3sek/in-prac/best-of.htm#bruene

Waveguide directional couplers work in very similar ways, but have to be
analysed in terms of forward and reflected E and H fields. That kind of
explanation also works for a waveguide circulator, the difference being
that some of the fields are inside a magnetic medium. A coaxial
circulator is more complex because it involves voltages and currents on
the line part and also E and H fields in the magnetic medium, but the
principle is the same.

This is all standard stuff that has been known for decades. Forward and
reflected waves of V and I (or E and H) give a complete explanation of
the directional properties of all such devices.

Let me turn the question around, Cecil: can you explain in detail how
any directional coupler gets its directional properties, using *only*

your concepts of power waves?

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2113. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 17:58:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tjf5iv8rn38pvv0sb2vneauoqq4fusj973@4ax.com>
Source record: 111757

On Sat, 26 Jul 2003 11:06:46 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>
>These two waves continue to circulate. One in the short length of
>transmission line between the mismatched load and the stub placed on the
>line to correct the mismatch. The other continues to circulate in the
>stub. This circulation is established during the transient period and
>continues until it is disestablished. The reflection which would have
>prevailed on the line between the generator and the stub junction with
>the line, were the stub not there, is simply absent. The line sees a
>combined load plus stub impedance at their junction of Zo.

This was confirmed at the bench by my example of a mismatched source
feeding a mismatched load (creating this characteristic of circulating
energy in a purely resistive network) illustrating the Mismatch Error
in the thread:
"The Cecilian Gambit, a variation on the Galilean Defense revisited"
This characteristic is also borne out by the necessity of having low R
components such that each successive pass of the circulating energy is
not power lost to that Ohmage.
>
>There is no reflected wave in the line in the length between the
>generator and the stub junction with the line. So, there`s no extra
>energy to be accounted for.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

This last point, too, has been a verity for Primary Standards Labs for
generations. Experience at the bench has been heavily discounted here
recently.

73's
Richard Clark, KB7QHC

2114. Re: Staples and twin lead

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 18:06:54 UTC
From: donut <none@none.com>
Message-ID: <Xns93C47096CD0DFdonut@216.102.43.227>
Source record: 111759

W7TI <noway@nohow.com> wrote in
news:nn65iv4d11c23dv991dimk0hi2fdo1ceom@4ax.com:

> On Sat, 26 Jul 2003 13:02:35 GMT, "Robert McCown"
> <bmccown.nospam@cox.net> wrote:
>
>>Is is a bad thing to hold twin lead 450 ohm feedline in place with
>>staples? I'm thinking the kind that come from a staple gun or the
>>insulated ones you drive with a hammer.
>>If not, should I put the staples through the dielectric or over the
>>wires? Thanks.
>>Bob AB0OD
>>
>
> ____
>
> As long as you don't damage the dielectric, it should be ok. I've
> installed thousands of feet of twinlead for TV reception using staples
> and never had a problem.
>
> For transmitting, you must keep in mind any possible arcing due to
> damaged dielectric, but the mere presence of a metallic staple should
> not make any difference in SWR or losses.
>

Ideally, the twin lead should not touch walls. It was always mounted using
those insulated screw-in standoffs.

2115. Re: Staples and twin lead

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 18:13:31 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8mg5ivc6h3fuuk599acnnqhg5k4gmeeag9@4ax.com>
Source record: 111758

On Sat, 26 Jul 2003 13:02:35 GMT, "Robert McCown"
<bmccown.nospam@cox.net> wrote:

>Is is a bad thing to hold twin lead 450 ohm feedline in place with staples?
>I'm thinking the kind that come from a staple gun or the insulated ones you
>drive with a hammer.
>If not, should I put the staples through the dielectric or over the wires?
>Thanks.
>Bob AB0OD
>

Hi Bob,

Stapled to what? Untreated wood? In the rain? THAT would look like
a fair sized resistor hung on the line. Insulate the staples? You
still have the same resistor now capacitively fed. Would you notice
with either circumstance? Odds I would offer is 50:50.

Are you the type to chase down the last 1dB? You would have to squint
hard at the S-Meter to see it. If you chase below 1dB, switch to
ceramic standoffs.

73's
Richard Clark, KB7QHC

2116. 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 19:00:30 UTC
From: "Christian D. Caswell" <kc2fht@rochester.rr.com>
Message-ID: <idAUa.125731$EQ5.104245@twister.nyroc.rr.com>
Source record: 111760

Want to build a portable 2m/440 beam for a camping trip. Any good
suggestions? Thanks

73
KC2FHT

2117. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 19:18:31 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F22D419.4070208@get.lost>
Source record: 111761
Cross-posted to:
rec.radio.shortwave,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy

Maximo Lachman "wrote":

> You must be a lifetime member of ARRL, eh?

And you must be using Madame Cleo, because your psychic readings are
worth shit.

> And you would snip the
> reference to the article at ARRL's site on other uses for bpl,
> giving details on how it is collaborating in the bpl effort, eh?

And you would completely and intentionally misinterpret the ARRL's
anti-BPL position as the opposite, implying they actually "collaborate"
with the BPL industry in some huge conspiracy that is clear only if one
wears an aluminum foil hat.

> It 's typical of scum like you to make such an attack, since you are
> too lazy to look up the fact that there was a coke machine on the net,
> the 1st one in Pittsburg.

It is typical of a conspiracy theory nut like you to invent all kinds of
government conspiracies that have no basis whatsoever in reality except
for people who buy a shack in Montana and arm themselves to the teeth
for that inevitable day when the UN-based world government (ATF and IRS
included) tries to knock down their door and suppress their "God" given
freedom to be stupid.

> Glenn Hauser had a report on a trucking
> company testing HF tracking (or perhaps a reference to Kim's show,
> when it was still on VOA). It's nice of the scum at ARRL to give
> free consulting services to those who have more than enough time &
> money at hand to trash the SWL bands.

Glenn Hauser, Kim, Hewey and Dewey, Ben and Jerry, who the hell cares?
Your so-called ground-breaking earth-shattering Pittsburg (sic) Coke
machine is a red herring. Internet appliances concept has been around
for years. You have yet to show just how is "ARRL collaborating w/the
bpl providers to place the interference on SW bands".
You have yet to show just how "such a strategy will help to clear out
the low-rent tenants currently cluttering the U.S. SW spectrum, so it
can be gentrified for a better class of paying customers". Who are these
phantom paying customers who are taking over SW? Trucking companies? Do
these trucking companies have a secret anti-BPL filter that they will
deploy once they take over SW? Another conspiracy?
When you attempt to quote "an article on the ARRL website", it is a

common practice to provide a link so that people can read it themselves, instead of relying on your interpretation of "asymmetry".
You also have to show just how is the ARRL collaborating with the BPL industry in the rest of the world, because there, too, is the BPL placed directly across the SW spectrum. Could it be that this is the optimum spectrum for data transmission over the power grid that is not designed to transmit data? Naaaaah, it must be a (world-wide) conspiracy!!! And the ARRL is in on it!!!

In short, your post is a typical example of a conspiracy nut and it does nothing constructive to help with the anti-BPL effort. On the contrary, it completely muddies the issue while providing the pro-BPL people with the ammunition to label hams as lunatics.

So take your anti-ARRL paranoia to your Freemen CB meeting in your Montana shack and leave it there.

WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

2118. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 22:20:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f22ffdc$1_7@corp.newsgroups.com>
Source record: 111763

Ian White, G3SEK wrote:
> Let me turn the question around, Cecil: can you explain in detail how
> any directional coupler gets its directional properties, using *only*
> your concepts of power waves?

Sure, P=V*I and V/I=Z0 for both forward waves and reflected waves. The
angle between the voltage and current is always zero degrees or 180 degrees
for any traveling wave. The ratio of voltage to current is always Z0 for
any traveling wave.
--
73, Cecil http://www.qsl.net/w5dxp

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2119. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 22:23:36 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307261423.5f280f5e@posting.google.com>
Source record: 111762

"Dominick(dblacklab)" <dblacklab@netzero.net> wrote in message
news:<bfsh8a$i5obn$1@ID-202017.news.uni-berlin.de>...
> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> Help! Please!

You can make a 1/4 wave vertical antenna very easily. If you only need it to work for a short while, then you can use cheesy materials as follows:

Get a UHF panel mount receptacle, SO-239. Find some brass rod that will fit into the solder lug on the connector. you will need about a 30" length of this for the element. The formula is length(inches) = 2800/freq(MHz). Solder the rod into the connector's center pin.

Drill the necessary five holes to mount the connector in a brass sheet that's available at hobby stores. Use .031" or .062" thick brass. Then solder four 36" lengths of brass rod to the plate, fanning out horizontally in four directions, to make ground radials for the antenna. Bend each radial downward about 45 degrees.

You can mount the antenna by bolting some angle iron to the brass plate, and drilling holes for a mast clamp in the vertical part of the angle iron.

This antenna will be about 50 ohms.

Take a look at http://home.tbbs.net/~bhammond/FM_ANT/ to see how it's done.

The next type you could consider is the "j-pole". Again, this has an unbalanced 50 ohm match (if constructed correctly), and is quite easy to attach to a mast. http://www.hamuniverse.com/jpole.html is a handy calculator for getting the length right.

A quick Google search for antenna types would definately help you out!

Slick (pasting from other posts)

2120. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 22:27:20 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <D5DUa.2689$R43.2549@fe01.atl2.webusenet.com>
Source record: 111764

Just playing devels advocate here, but, as you state "If you put X watts into one antenna and extract Y watts from an antenna coupled to it, and measure the efficiency of the "transformer" the same way as you did the conventional transformer, you'll find it has lousy efficiency.", does that refer to the 377 ohms (or so) free space coupling impedence, or could that effeciency be improved by having the antenna's matched radiation resistance approach that 377 ohms? (I.E. max transfer of power is at Z0 (in) matches Z0(out)! or, is this academic for this? Perhaps, better for Dr. Shorza Gitchigoumi of CQ fame, or Larson E. Rapp of ARRL fame (both with bad habit of only presenting articles in the 4th month of the year in their respective publications) ! But, I'd thought I had better ask! Jim NN7K

"Roy Lewallen" <w7el@eznec.com> wrote in message news:vhsk4n5lamhs29@corp.supernews.com...
> I hope you'll pardon me for amplifying this a little.
>
> If you put X watts into the primary of a transformer and extract Y watts
> from the secondary, the efficiency is Y/X by definition.
>
> If you put X watts into one antenna and extract Y watts from an antenna
> coupled to it, and measure the efficiency of the "transformer" the same
> way as you did the conventional transformer, you'll find it has lousy
> efficiency. Why? Because a goodly fraction of the power you applied to
> the "primary" antenna never gets to the "secondary" antenna because it's
> radiated instead. As far as the "secondary" is concerned, it might as
> well have been converted to heat.
>
> If you look at the impedance of the "primary" antenna, you'll find an
> excess of resistance -- just enough, in fact, to account for the "lost"
> (radiated) power.
>
> This isn't a statement about how well coupled antennas function as
> antennas, whose purpose is to radiate after all. It's a statement about
> how well they function as a transformer. Poorly.
>
> Roy Lewallen, W7EL

2121. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 22:42:20 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <HjDUa.2694$R43.1668@fe01.atl2.webusenet.com>
Source record: 111766

Be sure to wrap a flag (Skull and Crossbones) around the terminateing
resistor!!

"Dennis Kaylor" <k4oxg@tampabay.rr.com> wrote in message
news:3F2276AF.6040503@tampabay.rr.com...
> wake the hell up??
> they are awake and doing exactly as they should it would be illegal to
> build and use a pirate radio station and if anyone helped him it would
> be aiding and a betting and could cause a licensed ham to lose the
> licenese he worked so hard for
> if this guy cant figure out how to build a simple antenna he will never
> get the transmitter working he should stick with internet broadcasting
>

2122. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 23:24:54 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <kccz44ZG3wI$EARx@ifwtech.co.uk>
Source record: 111767

W5DXP wrote:
>Ian White, G3SEK wrote:
>> Let me turn the question around, Cecil: can you explain in detail how
>>any directional coupler gets its directional properties, using *only*
>>your concepts of power waves?
>
>Sure, P=V*I and V/I=Z0 for both forward waves and reflected waves. The
>angle between the voltage and current is always zero degrees or 180 degrees
>for any traveling wave. The ratio of voltage to current is always Z0 for
>any traveling wave.

What are those V's and I's doing in your reply? Which part of "*only*...
power waves" did you not understand? Try again.

I believe that I'm asking a question that your theories of power waves
are fundamentally incapable of answering... but that's a problem for you
and your theories, not for me.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2123. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-26 23:29:27 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F230EB4.8A5FDBBF@shaw.ca>
Source record: 111768

Bob Miller wrote:

>
> Given the cost of the mfj loops, over $300, and their limited tuning
> range, you might first look at the return policy on the boogers before
> ordering one.
>
> I wouldn't be surprised if the active antenna does as well or better.
> Or that a wide-range discone, or a random indoor wire with a low-cost
> antenna tuner, might be equal or better, at much lower dollars.
>
> You could also check the ARRL Antenna Book for ideas on receiving
> loops.
>
> Bob
> k5qwg

I picked one up for $100 (Canadian) used. Had to clean the
switches in the Remote Controller but it works great now.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2124. Re: 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 00:08:53 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F231815.FE65D2EC@cwis.net>
Source record: 111669

Christian,
Take any 2 meter/70 cm beam, mark the boom at each
element. Disassemble and pack it along with you...
'Doc

2125. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 00:20:54 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <GVEUa.121242$Io.10337552@newsread2.prod.itd.earthlink.net>
Source record: 111670

Ian White wrote:

>1. The Bird "wattmeter" does not in fact sense power. At the detailed
> level, it >senses voltages and currents in its internal transmission
> line, and then sums >and subtracts them to give RF voltages that the
> diode detects. I repeat, there >is no sensing of power as such, and no
> detection of power as such.
>
> My point is that all directional couplers DO work by sensing forward and
> reflected waves of voltage and current BUT NOT WAVES OF POWER.
>
> The inner workings of every directional coupler can be explained
> *completely* in terms of waves of voltage and current. That includes
> resistive bridges, Bruene bridges and parallel-line couplers (of which
> the coupler in the Bird is a sub-class). They all work because E and I
> waves are phasors, and the construction of the coupler makes them add in
> one direction and subtract in the other. There's an example of a
> detailed analysis, about the Bruene bridge but applicable in principle
> to other types as well, at:
> www.ifwtech.co.uk/g3sek/in-prac/best-of.htm#bruene
>
> Waveguide directional couplers work in very similar ways, but have to be
> analysed in terms of forward and reflected E and H fields. That kind of
> explanation also works for a waveguide circulator, the difference being
> that some of the fields are inside a magnetic medium. A coaxial
> circulator is more complex because it involves voltages and currents on
> the line part and also E and H fields in the magnetic medium, but the
> principle is the same.
>
> This is all standard stuff that has been known for decades. Forward and
> reflected waves of V and I (or E and H) give a complete explanation of
> the directional properties of all such devices.
>
> Let me turn the question around, Cecil: can you explain in detail how
> any directional coupler gets its directional properties, using *only*
> your concepts of power waves?

Ian is precisely correct when he says power meters such as the Bird, or Bruene's Directional Wattmeter DO NOT sense power, they sense only voltage and current. The meter indicating the power is simply calibrated to indicate the E^2/Zo power flowing in the characteristic impedance, Zo, of the line. E^2/Zo = power, and that expression was used to calibrate the meter scale in terms of the voltage and current propagating in either direction. See Page 3-16 in Reflections 1 and Page 3-15 in Reflections 2, taken from Warren Bruene's QST article, April 1958, Ref 38 in Reflection.

Walt, W2DU

2126. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 00:33:47 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <L5FUa.121250$lo.10338608@newsread2.prod.itd.earthlink.net>
Source record: 111671

Cecil wrote:

> But that is not what happens when two waves cancel. For an idea of what
> happens, please reference Reflections II, page 23-8,9. If the two voltages
> are 180 degrees out of phase and the two currents are 180 degrees out of
> phase, neither one of them can double. Calling that a virtual short or
> virtual open is incorrect, IMO.

Cecil, this is the error on Reflections that I told you about last week when you cited the above reference in Reflections. I inadvertantly called the effect a 'short circuit', while it is actually an open circuit. If a 3rd edition of Reflections is ever printed this error will be corrected. Now when two waves interfere with their voltages 180 degrees out of phase, but with their currents in phase, we have a short circuit. Either of these conditions occur at the matching stub point, depending on the resistance component of the load impedance and the distance from the load to the stub point.

> > Cecil also wrote:
> > "What happens to the energy in the two waves that have their voltage and
> > current amplitudes equal in amplitude and opposite in phase?"
> >
> > These two waves continue to circulate.
>
> I forgot to say they are traveling in the same direction and that they
> are coherent. The two waves disappear from existence. What happens to
> the energy they contained?

I thought it was common knowledge that the reflected energy is totally re-reflected in the forward direction when encountering the open or short circuit at the matching point.

Walt, W2DU

2127. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 01:09:28 UTC
From: richardharrison@webtv.net
Message-ID: <3602-3F232648-167@storefull-2318.public.lawson.webtv.net>
Source record: 111672

Ian, G3SEK wrote:
"What are those V`s and I`s doing in your reply?"

Cecil is right on target. Power is VxI. The Bird takes carefully balanced samples of V&I. In the incident wave the samples are in-phase. In the reflected wave the samples are 180-degrees out-of-phase. By exactly balancing the two samples, the reflected wave cancels. Only the incident wave is sensed. To sense the reflected wave only, the polarity of one of the two samples is switched.

I am now more dangerous. Until today, I had never seen one of Kraus` books. I now own the third edition of "Antennas (for all applications)". Kraus says there are "fundamental" units and "secondary" units. The "Ampere" is a fundamental unit. All secondary units can be derived from the fundamental units.

In the Bird, the given is a 50-ohm line. Power is 50(I)(I), since I=E/R = E/50, and E = 50(I) = V.

Power = EI

The Bird is accurate enough using a sample of E and a sample of I and scaling to determine power. Multiplication is just scaling or the number of times you repeat a number in an addition column. In the Bird, scaling is an electrical adjustment.

Best regards, Richard Harrison, KB5WZI

2128. Re: 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 01:25:16 UTC
From: oldtime radio <nospam@spam.net>
Message-ID: <qfa6iv40gqnqcr0rjf3hlgn97oi0mgprj3@4ax.com>
Source record: 111673

Look up the "Pounder" in some of the ARRL antenna books.

On Sat, 26 Jul 2003 19:00:30 GMT, "Christian D. Caswell"
<kc2fht@rochester.rr.com> wrote:

>Want to build a portable 2m/440 beam for a camping trip. Any good
>suggestions? Thanks
>
>73
>KC2FHT
>

2129. Re: What tuner specs do I look for?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 01:44:39 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bfvaq6kmd1@sparta.btinternet.com>
Source record: 111674

The safest thing to do is visit a ham shop, take the cover off the box and look inside before handing over any cash.

Reg.

2130. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 02:04:15 UTC
From: richardharrison@webtv.net
Message-ID: <15477-3F23331F-41@storefull-2317.public.lawson.webtv.net>
Source record: 111675

Ian, G3SEK wrote:
"1. The Bird "wattmeter" does not in fact sense power. At the detailed level, it > senses voltages and currents in its internal transmission line---."

Since the ratio of voltage to current in either direction is always Zo, all you need are voltage and current samples of one direction at a time.

The Bird is not alone in determining power from such voltage and current samples. The dynamometer does too.

A d-c meter is useless on a-c because the needle tries to move first one way then the other as the a-c current through it alternates. Inertia keeps the indication on a-c close to zero.

The dynamometer eliminates the flicker and gives an appropriate deflection on a-c. It does this by replacing the d-c meter`s permanent magnet with an a-c coil. This is arranged to torque the needle upscale no matter whch direction the current takes through the coils. The moveable coil is always deflected the same way by interaction with the fixed coil.

It is simple to calibrate a dynamometer for power and feed current through one coil and place volts across the other. It senses volts and amps but it reads out power, as does the Bird wattmeter.

Best regards, Richard Harrison, KB5WZI

2131. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 03:23:28 UTC
From: Ed Cregger <ecregger@hotmail.com>
Message-ID: <irHUa.3008$R43.723@fe01.atl2.webusenet.com>
Source record: 111676

And be sure to use a fresh 9-volt battery in your Mr. Microphone. <G>

Ed Cregger, NM2K

<Jimnn7k@reno.rmci.net> wrote in message
news:HjDUa.2694$R43.1668@fe01.atl2.webusenet.com...
> Be sure to wrap a flag (Skull and Crossbones) around the terminateing
> resistor!!
>
>
>
> "Dennis Kaylor" <k4oxg@tampabay.rr.com> wrote in message
> news:3F2276AF.6040503@tampabay.rr.com...
> > wake the hell up??
> > they are awake and doing exactly as they should it would be illegal to
> > build and use a pirate radio station and if anyone helped him it would
> > be aiding and a betting and could cause a licensed ham to lose the
> > licenese he worked so hard for
> > if this guy cant figure out how to build a simple antenna he will never
> > get the transmitter working he should stick with internet broadcasting
> >
>
>
>

2132. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 03:29:35 UTC
From: kb8yio <donna280@wideopenwest.com>
Message-ID: <gROdnVepzvC-2r6iXTWJhA@wideopenwest.com>
Source record: 111677

yeah get two pieces of tubing..... 468 divided by the freq in use...
cut in half.... separate at least 2 inchs attach coax cable ...

"Dominick(dblacklab)" <dblacklab@netzero.net> wrote in message
news:bfsh8a$i5obn$1@ID-202017.news.uni-berlin.de...
> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> Help! Please!
>
>

2133. Re: 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 03:30:40 UTC
From: kb8yio <donna280@wideopenwest.com>
Message-ID: <66KcnelGIJD_2r6iXTWJkw@wideopenwest.com>
Source record: 111678

i agree the pounder is a great antenna for portable use

"oldtime radio" <nospam@spam.net> wrote in message
news:qfa6iv40gqnqcr0rjf3hlgn97oi0mgprj3@4ax.com...
> Look up the "Pounder" in some of the ARRL antenna books.
>
>
>
> On Sat, 26 Jul 2003 19:00:30 GMT, "Christian D. Caswell"
> <kc2fht@rochester.rr.com> wrote:
>
> >Want to build a portable 2m/440 beam for a camping trip. Any good
> >suggestions? Thanks
> >
> >73
> >KC2FHT
> >
>

2134. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 03:31:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2348b1_7@corp.newsgroups.com>
Source record: 111679

Ian White, G3SEK wrote:
> I believe that I'm asking a question that your theories of power waves
> are fundamentally incapable of answering... but that's a problem for you
> and your theories, not for me.

Quoting from the article on my web page:

"Note that this is NOT a new and different method of system analysis.
The only purpose of this paper is to illustrate how to track the
energy at an impedance discontinuity point in a transmission line."

It does so by recognizing destructive interference between two phasor
voltages when the relative phase angle is greater than 90 degrees and
the constructive interference between two phasor voltages when the
relative phase angle is less than 90 degrees.

There are lots of questions that cannot be answered by any discussion
of power only. My *ONLY* purpose is to track the energy components
which is in addition to standard system analysis. There is absolutely
no conflict between the two subjects. The energy components are always
associated with voltages and currents.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2135. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 03:38:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vi6i9vr1gov963@corp.supernews.com>
Source record: 111680

The answer is no. You should be able to figure out the reason why by
reading the previous postings in this thread.

Roy Lewallen, W7EL

Jimnn7k@reno.rmci.net wrote:
> Just playing devels advocate here, but, as you state "If you put X watts
> into one antenna and extract Y watts from an antenna coupled to it, and
> measure the efficiency of the "transformer" the same way as you did the
> conventional transformer, you'll find it has lousy
> efficiency.", does that refer to the 377 ohms (or so) free space coupling
> impedence, or could that effeciency be improved by having the antenna's
> matched radiation resistance approach that 377 ohms? (I.E. max transfer of
> power is at Z0 (in) matches Z0(out)! or, is this academic for this?
> Perhaps, better for Dr. Shorza Gitchigoumi of CQ fame, or Larson E. Rapp of
> ARRL fame (both with bad habit of only presenting articles in the 4th month
> of the year in their respective publications) ! But, I'd thought I had
> better ask! Jim NN7K
>
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vhsk4n5lamhs29@corp.supernews.com...
>
>>I hope you'll pardon me for amplifying this a little.
>>
>>If you put X watts into the primary of a transformer and extract Y watts
>>from the secondary, the efficiency is Y/X by definition.
>>
>>If you put X watts into one antenna and extract Y watts from an antenna
>>coupled to it, and measure the efficiency of the "transformer" the same
>>way as you did the conventional transformer, you'll find it has lousy
>>efficiency. Why? Because a goodly fraction of the power you applied to
>>the "primary" antenna never gets to the "secondary" antenna because it's
>>radiated instead. As far as the "secondary" is concerned, it might as
>>well have been converted to heat.
>>
>>If you look at the impedance of the "primary" antenna, you'll find an
>>excess of resistance -- just enough, in fact, to account for the "lost"
>>(radiated) power.
>>
>>This isn't a statement about how well coupled antennas function as
>>antennas, whose purpose is to radiate after all. It's a statement about
>>how well they function as a transformer. Poorly.
>>
>>Roy Lewallen, W7EL

>
>
>
>

2136. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 03:47:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f234c6c_7@corp.newsgroups.com>
Source record: 111681

Walter Maxwell wrote:
> I thought it was common knowledge that the reflected energy is totally
> re-reflected in the forward direction when encountering the open or short
> circuit at the matching point.

The voltages and currents are listed at the Z0-match point in the following
example:
rho=0.5
200W source---50 ohm feedline--+--1/2WL 150 ohm feedline---50 ohm load
Vfwd1=100V--> Vfwd2=200V-->
Ifwd1=2A--> Ifwd2=1.333A-->
<--Vref1=0V <--Vref2=100V
<--Iref1=0A <--Iref2=0.667A

Vref1 = Vfwd1(rho) + Vref2(tau) (this is the same as b1=s11*a1+s12*a2)
0V = 50V at zero deg + 50V at 180 deg i.e. the voltages cancel

Iref1 = Ifwd1(rho) + Iref2(tau)
0A = 1.0A at 180 deg + 1.0A at zero deg i.e. the currents cancel

Through wave cancellation, both the voltage and current go to zero in
the direction of the source. That's like a short for voltage and an
open for current.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2137. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 04:30:55 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307262030.534c7098@posting.google.com>
Source record: 111682

Dennis Kaylor <k4oxg@tampabay.rr.com> wrote in message
news:<3F2276AF.6040503@tampabay.rr.com>...
> wake the hell up??
> they are awake and doing exactly as they should it would be illegal to
> build and use a pirate radio station and if anyone helped him it would
> be aiding and a betting and could cause a licensed ham to lose the
> licenese he worked so hard for
> if this guy cant figure out how to build a simple antenna he will never
> get the transmitter working he should stick with internet broadcasting

Wrong. It's perfectly legal to build and own a working high
powered broadcast radio station, you just have to use it only with a
dummy load.

I use mine to keep my bed warm... :)

Slick

2138. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 05:45:43 UTC
From: dplatt@radagast.org
Message-ID: <vi6po7f5di4m1d@corp.supernews.com>
Source record: 111683

In article <3F21DB84.E30C092@cwis.net>, 'Doc <w5lz@cwis.net> wrote:

>> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
>> Help! Please!
>
>
>Step One:
> Find an unused pirate (preferably FM).
>
>Step Two:
> Make feedline connections to pirate.

Direct connection to coax. Do not use ladder line. Do not use a balun.

History indicates quite strongly that most pirates were unbalanced.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2139. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 06:49:22 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <OdxpoTByX3I$EAII@ifwtech.co.uk>
Source record: 111684

Richard Harrison wrote:
>Ian, G3SEK wrote:
>"What are those V`s and I`s doing in your reply?"
>
>Cecil is right on target. Power is VxI. The Bird takes carefully
>balanced samples of V&I. In the incident wave the samples are in-phase.
>In the reflected wave the samples are 180-degrees out-of-phase. By
>exactly balancing the two samples, the reflected wave cancels. Only the
>incident wave is sensed. To sense the reflected wave only, the polarity
>of one of the two samples is switched.
>
Correct. I have said that, or near, several times in this and preceding
threads. An article saying the same has been on my web site for almost a
year.

>I am now more dangerous. Until today, I had never seen one of Kraus`
>books. I now own the third edition of "Antennas (for all applications)".
>Kraus says there are "fundamental" units and "secondary" units. The
>"Ampere" is a fundamental unit. All secondary units can be derived from
>the fundamental units.
>
That is of course true... but if you believe it relevant to this
discussion, you are indeed much more dangerous.

>In the Bird, the given is a 50-ohm line. Power is 50(I)(I), since I=E/R
>= E/50, and E = 50(I) = V.
>
>Power = EI
>
>The Bird is accurate enough using a sample of E and a sample of I and
>scaling to determine power.

As you yourself say, the Bird senses current and voltage samples; and
these are then added (forward) or subtracted (reverse). There is no
physical mechanism inside the Bird by which E x I multiplication takes
place, so power is not directly sensed or measured.

>Multiplication is just scaling or the number
>of times you repeat a number in an addition column.

That is a kindergarten concept that only works for integers (how do you
repeat a number 3.14159 times?) and anyway, it physically does not
happen inside a Bird.

>In the Bird, scaling
>is an electrical adjustment.

No, the meter scale comes from an external calibration.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2140. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 07:13:18 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <ZdOsYoDOu3I$EAGw@ifwtech.co.uk>
Source record: 111685

Richard Harrison wrote:

>It is simple to calibrate a dynamometer for power and feed current
>through one coil and place volts across the other. It senses volts and
>amps but it reads out power,

Correct...

> as does the Bird wattmeter.

Wrong. The Bird has no second meter coil, and no other physical
mechanism to multiply the E sample by the I sample.

As Walt says (thank you, sir) the Bird is *calibrated* in terms of power
using a matched load.

I've made my point. There's an Internet abbreviation called
IAFWAFIAWMWQ... so I'll be wise, and quit.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2141. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 07:51:27 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F23847F.4708ECAE@cwis.net>
Source record: 111686

```
Dave,
How about an 'UnUn', then?
'Doc
```

2142. Re: 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 07:53:38 UTC
From: "Ralf Ballis (DL2MRB)" <rballis@consult.m.uunet.de>
Message-ID: <bg00f9jve03$1@news.t-online.com>
Source record: 111687

Christian D. Caswell wrote:

> Want to build a portable 2m/440 beam for a camping trip. Any good
> suggestions? Thanks

HB9CV antenna but two separates and very easy to handle. The 70cm version is
very small to take them in a bag, there existing a camping version for the
2m band which cold be very easy disassembled.

Regards!

Ralf
--
Vy 73 es 55 de Ralf, DL2MRB
E-Mail: dl2mrb@darc.de

2143. Re: BPL pollution ☐ file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 08:47:02 UTC
From: peter@strg-alt-entf.org
Message-ID: <bg03i6$j9ehk$5@ID-31.news.uni-berlin.de>
Source record: 111688
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

In rec.radio.amateur.dx Rob Kemp <robkemp90210@hotmail.com> wrote:

> BPL pollution ? please file reply comments by August 6 (the FCC site
> tends to go down close to deadlines so try and post in plenty of
> time).

You have already lost the battle.

What can you say against an argument that includes "Homeland Security"?

"Further, the addition of BPL facilities-based technologies will, as
correctly recognized by the Commission, enhance homeland security by
"creating new facilities to provide redundancy."

Has anyone done a grep for 'terror' throughout these documents?

And the fact that BPL has been abandoned for economic reasons in Germany
will probably make the US-guys feel that they can do a lot better than us
stupid Krauts. After all, we lost the war.

Bye bye ham radio in the US.

Peter Lemken
Berlin
--
> Fact is that asians have nothing useful to contribute to the internet.

Have you *seen* some of that hentai?
-- as seen on slashdot.org , July 21st, 2003

2144. Re: 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 09:39:25 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f239dcc$0$48912$edfadb0f@dtext02.news.tele.dk>
Source record: 111689

Hello

> HB9CV antenna but two separates and very easy to handle. The 70cm version
is
> very small to take them in a bag, there existing a camping version for the
> 2m band which cold be very easy disassembled.

And Wimo have one dualband version for 2m/70cm.

Regards Max

2145. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 10:20:08 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <va97ivs07dkhmc0rcja36h2iui41cbvmlq@4ax.com>
Source record: 111765

On 24 Jul 2003 23:10:36 -0700, wasatch@jps.net (Hatfield) wrote:

>Please consider this a newbie question. Am an SWL, not a HAM, and am
>considering an MFJ loop as the primary indoor SWL antenna, along with
>an active antenna as a less potent secondary, the two connected via an
>antenna switch.
>
>So lets say I read in a schedule that a certain frequency in the 49
>meter band right now should have an interesting broadcast station on
>the air, so I set my receiver digital readout to that freq, then
>what's the procedure to tune the loop to that same exact frequency,
>having no transmiter?
>
>Thanks for any help!

Given the cost of the mfj loops, over $300, and their limited tuning
range, you might first look at the return policy on the boogers before
ordering one.

I wouldn't be surprised if the active antenna does as well or better.
Or that a wide-range discone, or a random indoor wire with a low-cost
antenna tuner, might be equal or better, at much lower dollars.

You could also check the ARRL Antenna Book for ideas on receiving
loops.

Bob
k5qwg

2146. FS: TA-33 Beam - UPS - $125.00

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 10:57:18 UTC
From: JS <wd1v@removethisamsat.org>
Message-ID: <270720030657197165%wd1v@removethisamsat.org>
Source record: 111690

TA-33 Beam boxed and ready for shipment to any of the 48 US
for just $125.00 total. US Postal Money order only to my
call book address. wd1v@amsat.org

2147. Re: 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 13:43:35 UTC
From: "Ralf Ballis (DL2MRB)" <rballis@consult.m.uunet.de>
Message-ID: <bg0kvh$3nt$04$1@news.t-online.com>
Source record: 111691

Max wrote:

> And Wimo have one dualband version for 2m/70cm.

Indeed, very interesting antenna!

Regards!

Ralf
--
Vy 73 es 55 de Ralf, DL2MRB
E-Mail: dl2mrb@darc.de

2148. SG-230 ATU- anyone using one?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 14:27:56 UTC
From: "Richard C. Ferryman" <richard@g4bbh.fsnet.co.uk>
Message-ID: <82o7ivch0deb3i5lhek36bg8gn6ri07vl3@4ax.com>
Source record: 111692

Can someone tell me what the SG-230 ATU does when powered off? Is the antenna left connected / grounded or what.
I want to use one on maritime mobile and will be calling on certain frequencies for mail transfer but in between will be scanning and downloading FAX, RTTY and NAVTEX on frequencies from 490 kHz upward. Transmitting on ham bands 80 through 15 M only. I'm wondering what sort of signal will be passed through the ATU when not in use on the ham bands and not tuned (receive only) and when powered off.
Richard

2149. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 14:34:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nlo7iv0qgsbj7o8t7rjafn3d0ogite8cbo@4ax.com>
Source record: 111693

On Sat, 26 Jul 2003 22:31:38 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>Ian White, G3SEK wrote:
>> I believe that I'm asking a question that your theories of power waves
>> are fundamentally incapable of answering... but that's a problem for you
>> and your theories, not for me.
>
>Quoting from the article on my web page:

:-)

2150. Double bi-quad 2.44 ghz antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:01:55 UTC
From: Rob <spam@spam.com>
Message-ID: <8QRUa.1668$w4.175168@newsfep2-gui.server.ntli.net>
Source record: 111694

Not being an RF engineer, I need to know the dimensions of the reflector for a double bi-quad antenna for a wireless lan link (two wire bowties placed in front a flat plate reflector - here is a quad bi-quad: http://www.frars.org.uk/cgi-bin/render.pl?action=link&url=1162&goback=1064). This is how I see it (I may be wrong), any wires that have no sheild will act as a radiator, so if the length is a wavelength or wavelength divided by 2,4,8 etc (ie speed of light in air/frequency, 300,000,000ms/2,440,000,000hz = 0.123meters), then the wave is not disturbed and continues along its path. The biquad is a piece of wire 244mm(2 wavelengths) long folded into 2 squares, so I guess you have 8 radiators.
So to connect 2 biquads or patch panels together the wire below would have to be 123mm long and connect to the coax in the centre.
Therefore a double biquad would be 123 x 244mm, but I need someone to confirm this.
The radiator part I think is OK, its the reflector size and raditor spacing I am not sure about.

Cheers

Rob

2151. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:06:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f23ebab_2@corp.newsgroups.com>
Source record: 111696

Ian White, G3SEK wrote:
> As you yourself say, the Bird senses current and voltage samples; and
> these are then added (forward) or subtracted (reverse). There is no
> physical mechanism inside the Bird by which E x I multiplication takes
> place, so power is not directly sensed or measured.

I'm sorry, but that is incorrect. Refresh your memory on how a slide rule multiplies. Two linear values of length are physically added but a product is read from the results. The secret to multiplying using linear scales is to calibrate that linear scales logarithmically. It's easy to understand for a slide rule, is it not? The same applies to the Bird wattmeter scale.

The Bird takes two linear voltages and adds them. But the power scale on the Bird meter face is scaled logarithmically just like it is on a slide rule. That's why the multiplication scale on a slide rule is nonlinear. That's why the power scale on the Bird wattmeter is nonlinear. The Bird is mechanically multiplying a voltage proportional to the voltage by a voltage proportional to the current. It adds two linear quantities and, just like a slide rule, reads the results out on a logarithmically calibrated scale thus accomplishing the multiplication function.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2152. Re: SG-230 ATU- anyone using one?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:10:21 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <xXRUa.160701$H17.55585@sccrnsc02>
Source record: 111695

Richard -

Here are the FAQ from the SGC web site:
http://www.sgcworld.com/products/239/239faq.html#1

Note: this question is in reference to the SG-239 SuperTuner

#1 If I do not switch on the 12 VDC power to the tuner is the tuner always
in the bypass position so the RF goes right through it and nothing is tuned?

At any time12 v is not applied to the tuner, you will have total
inductance 16 mH (microhenry), in series with your antenna.
To bypass the tuner you must:

A) Have 12v applied. Note: If you have 12v applied then coupler would
be on - If no TXMT occurred, it would be in bypass mode.

B) Reset the tuner by tuning 12v DC off then on or with reset or
Smartlock.

SGC SG-230 SuperTuner
http://www.sgcworld.com/products/230/sg230.html

http://www.sgcworld.com/products/Couplers/index.htm

SGC, Inc.
1-800-259-7331
13737 SE 26th St., Bellevue, WA 98005 USA
Tel: 425-746-6310 | Fax: 425-746-6384
E-mail: sgc@sgcworld.com

Greg
w9gb

--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

"Richard C. Ferryman" <richard@g4bbh.fsnet.co.uk> wrote in message
news:82o7ivch0deb3i5lhek36bg8gn6ri07vl3@4ax.com...
> Can someone tell me what the SG-230 ATU does when powered off? Is the
> antenna left connected / grounded or what.
> I want to use one on maritime mobile and will be calling on certain
> frequencies for mail transfer but in between will be scanning and
> downloading FAX, RTTY and NAVTEX on frequencies from 490 kHz upward.
> Transmitting on ham bands 80 through 15 M only. I'm wondering what
> sort of signal will be passed through the ATU when not in use on the
> ham bands and not tuned (receive only) and when powered off.

> Richard

2153. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:14:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0ro7ivs3k7hfjor3k0vtnh5mqfdpotaqn2@4ax.com>
Source record: 111697

On Sun, 27 Jul 2003 07:49:22 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:
>As you yourself say, the Bird senses current and voltage samples; and
>these are then added (forward) or subtracted (reverse). There is no
>physical mechanism inside the Bird by which E x I multiplication takes
>place, so power is not directly sensed or measured.
>
>>In the Bird, scaling
>>is an electrical adjustment.
>
>No, the meter scale comes from an external calibration.
>

Hi Ian,

If you boil down power to heat, it still takes the scale on a thermometer to confirm the magnitude. Scales are a form of quantifying into scientific rigor the qualitative utterances of "not much power," "some power," "more power," "a lot of power...." Denying that multiplication is performed through the observance of established boundary conditions and the movement of a coil in a magnetic field (the resulting torsion which easily conforms to evidence of power) by nay-saying is not compelling argument.

I've seen antennas described as "transducers" and with this current side-topic, the Bird Wattmeter is more so such a transducer in its translation of electrical power to physical power. The Bird Wattmeter consumes power at a known ratio to the applied power. Ratios are one of the simplest and most resolved quantities to confirm. There is very little, short of serious physical abuse, that can disturb this ratio (such as overpowering the line to create breakdowns such that there are destructive arcs or fusing current). Efficiency aside (that power lost to resistors within the sensing circuit), power of a known ratio magnitude is invested in the needle's angular deflection and holding it against spring tension. Newton would easily accept this as "Power." It is basically what he called the ballistic pendulum.

If one cannot measure Power with a Bird Wattmeter, then prayer is the only solution to the enigma of its reckoning. If you have issue with the systemic failures that abound in Power determination, then argue the cause not the instrument. I have described in the past how Power determination can be upset drastically in the face of measurements performed between two mismatches (both the source and the load); but it is not the fault of the instrument in the Power determination's failure. No other instrument nor method (short of acknowledging the

indeterminacy of phase) will improve over sure failure.

73's
Richard Clark, KB7QHC

2154. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:19:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <04r7ivo2clkipvtd1a1tvcs0cktidivh9a@4ax.com>
Source record: 111698

On Sat, 26 Jul 2003 12:09:14 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>But that is not what happens when two waves cancel. For an idea of what
>happens, please reference Reflections II, page 23-8,9. If the two voltages
>are 180 degrees out of phase and the two currents are 180 degrees out of
>phase, neither one of them can double. Calling that a virtual short or
>virtual open is incorrect, IMO.
>
On Sun, 27 Jul 2003 00:33:47 GMT, "Walter Maxwell" <w2du@iag.net>
wrote:
>Cecil, this is the error on Reflections that I told you about last week when
>you cited the above reference in Reflections. I inadvertantly called the
>effect a 'short circuit', while it is actually an open circuit.

Cecil,

Your failure to confirm or respond to Walt's second correction offers
compelling further evidence that you are an unreliable correspondent.

73's
Richard Clark, KB7QHC

2155. Re: Looking for info on a good triband antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:27:41 UTC
From: Paré François <francoispare2002@yahoo.ca>
Message-ID: <NbSUa.218337$q42.661@charlie.risq.qc.ca>
Source record: 111699

Que a ï¿½crit :
> I want to replace my old 3 element TET triband antenna that has seen better
> days (24 years on the tower). I am looking for any info on a very good
> replacement antenna. I can not have a turning radius over 17.5 feet due to
> property restrictions. Any info or recommendations would be appreciated.
>
Hi !
I bet you would like your next antenna to be up another 24 years ! hi ..
One i would consider looking at, would be from a nice company called
RaiBeam.

http://www.raibeam.com

73
Francois
VE2-FFP

2156. Re: Double bi-quad 2.44 ghz antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:31:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hsr7ivs9d9g333ingi33mm99cm59rvh4nv@4ax.com>
Source record: 111700

On Sun, 27 Jul 2003 16:01:55 +0100, "Rob" <spam@spam.com> wrote:

>Not being an RF engineer, I need to know the dimensions of the reflector for
>a double bi-quad antenna for a wireless lan link (two wire bowties placed in
>front a flat plate reflector - here is a quad bi-quad:
>http://www.frars.org.uk/cgi-bin/render.pl?action=link&url=1162&goback=1064).
2 x "double sided PCB 260mm by 230mm"
>This is how I see it (I may be wrong), any wires that have no sheild will
>act as a radiator, so if the length is a wavelength or wavelength divided by
>2,4,8 etc (ie speed of light in air/frequency, 300,000,000ms/2,440,000,000hz
>= 0.123meters), then the wave is not disturbed and continues along its path.
>The biquad is a piece of wire 244mm(2 wavelengths) long folded into 2
>squares, so I guess you have 8 radiators.
>So to connect 2 biquads or patch panels together the wire below would have
>to be 123mm long and connect to the coax in the centre.
>Therefore a double biquad would be 123 x 244mm, but I need someone to
>confirm this.
>The radiator part I think is OK, its the reflector size
"double sided PCB 260mm by 230mm"
>and raditor spacing
"spaced 14mm from the ground plane"
>I am not sure about.
>
>Cheers
>
>Rob
>
>

2157. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:33:11 UTC
From: "Stephen M.H. Lawrence" <73steve@earthlink.net>
Message-ID: <XgSUa.121829$lo.10401803@newsread2.prod.itd.earthlink.net>
Source record: 111701
Cross-posted to:
rec.radio.shortwave,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy

With "Minimo," it's all about the Jews.

73,

Steve Lawrence
Burnsville, MN

"Zoran Brlecic" <...WA7AA...@get.lost> wrote:

> Great. If you could now only work in Roswell, grassy knoll, Elvis, moon
> landing hoax, the CIA and the Jews, you'd have it made.
>
> BPL is bad enough without idiotic conspiracy theories.
>
>
> WA7AA

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.500 / Virus Database: 298 - Release Date: 7/10/03

2158. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 15:51:55 UTC
From: richardharrison@webtv.net
Message-ID: <24928-3F23F51B-16@storefull-2314.public.lawson.webtv.net>
Source record: 111702

Ian, G3SEK wrote:
"No, the meter scale comes from external calibration."

Who said it didn`t?

The scale is mass produced. In the Bird element, a resistor is selected, in some elements it is a variable resistor, called the "calibration resistor". A suitable replacement is the Helitrim 7138 mini variable.

See "Calobration and Repair for Bird Wattmeter Elements, page 48, April 1989, 73 Amateur Radio.

Best regards, Richard Harrison, KB5WZI

2159. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 16:09:48 UTC
From: richardharrison@webtv.net
Message-ID: <24926-3F23F94C-141@storefull-2314.public.lawson.webtv.net>
Source record: 111703

Ian, G3SEK wrote:
"That is a kindergarten concept (Multiplication is just scaling or the number of times you repeat a number in an addition column.)."

Books were written, and sold nicely, with such titles as, "I Learned All I Needed To Know In Kindergarten".

You can easily repeat a number 3.14159 times by adjusting an amplifier`s gain to that figure. A variable resistor can be made nearly continuously variable and set for any odd value.

Best regards, Richard Harrison, KB5WZI

2160. Re: BPL pollution ☐ file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 16:24:59 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0307270824.318dce31@posting.google.com>
Source record: 111704
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

peter@strg-alt-entf.org (Peter Lemken) wrote in message
news:<bg03i6$j9ehk$5@ID-31.news.uni-berlin.de>...
> In rec.radio.amateur.dx Rob Kemp <robkemp90210@hotmail.com> wrote:
>
> > BPL pollution ? please file reply comments by August 6 (the FCC site
> > tends to go down close to deadlines so try and post in plenty of
> > time).
>
> You have already lost the battle.
>
> What can you say against an argument that includes "Homeland Security"?
>
> "Further, the addition of BPL facilities-based technologies will, as
> correctly recognized by the Commission, enhance homeland security by
> "creating new facilities to provide redundancy."
>
> Has anyone done a grep for 'terror' throughout these documents?
>
> And the fact that BPL has been abandoned for economic reasons in Germany
> will probably make the US-guys feel that they can do a lot better than us
> stupid Krauts. After all, we lost the war.

Both of 'em actually.

> Bye bye ham radio in the US.

Don't put that in the bank. I've seen some analyses of BPL economics,
beyond dismal. Breakeven point for recovering the initial investments
is projected to be ten years out. How do you suppose Wall Street will
react to that when that black cat gets out of the bag? Power utility
mangements have to be among the worst of all possible types to
shepherd anything hi-tech comms, they're still wrapped around steam
engines.

Check out how their brethern in the oil industry, Exxon in particular
shot itself in the foot when they got the bright idea to get into the
Qyx memory typwriter business. MBA candidates are still writing case
study theses on that disaster.

If BPL is approved in the U.S. I expect it to roll over and die almost
on the spot like it has in Germany. Or it won't be allowed in the
first place per the the Japanese example and for the same reasons.

I'm not losing a bit of sleep over the prospect of BPL wiping out HF
radio.

>
>
> Peter Lemken
> Berlin

w3rv

2161. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 16:25:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vi7v8nipog4ub9@corp.supernews.com>
Source record: 111705

I've been out of town since this was posted. There are a couple of details I'd like to check in some texts before responding, so I'll postpone my response until after I return home. In the meantime, I see that Ian and Tom have made contributions, both to their usual high standards. Both these gentlemen know what they're talking about, and I'm glad to have them help out.

Roy Lewallen, W7EL

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhrnmu43m03lad@corp.supernews.com>...
>
>>Here's the problem with that transformer concept again. A field is not a
>>voltage. So you can't measure it with a voltmeter. You can convert the
>>fields to voltages and currents by use of a transducer -- an antenna --
>>then you can measure the voltage and current from the antenna with
>>ordinary meters.
>>
>
>
> I agree with you that the field is first converted by the antenna
> before it can be measured.
>
> But by definition, the E field is definitely related to voltage
> potential.
>
> Hugh Skillings' Fund. of Electric Waves: "Voltage from point 1 to
> point 2 is the line integral of the electric field along any path from
> point 1 to point 2. This is the amount by which point 1 is at a
> higher potential than point 2."
>
> Say PD = E^2/Z0 = H^2 * Z0. If you say the Power Density =
> V^2/(R*m^2), and the R=Zo, then these will cancel, giving you E =
> V/meter, which are the correct units. So here we are equating the
> impedance of free space will a resistive impedance or load.
>
> Roy, what do you think 1uV/meter really means in terms of how you
> measure it? I mean, under what conditions must you have to measure
> this 1uV/meter?
>
> I'm starting to think that what this really means, is that an
> exploring particle with a unit positive charge, when placed in a
> electric field of 1uV/meter, will experience a change of voltage
> potential of +1uV when it is moved directly towards an isotropic

> radiator ("the potential of a point in space is the work required to
> move to that point a unit positive charge, starting an infinite
> distance away...potential increases as one positive charge is moved
> closer to another positive charge" - Skilling).
>
>
>
>
>
>>Good thing, too. Otherwise we'd all get electrocuted by the Earth's 100
>>volt/meter field. (And that's on a day with no storm nearby.)
>>
>
>
> But that's a static field, so we don't have to worry about
> touching metallic objects that aren't grounded.
>
>
>
>
>>> Perhaps the far-field measurements would require too sensitive a
>>>field-strength meter? Or maybe it's just more convenient to measure
>>>up close.
>>
>>No, it's far field measurements that are more common. One problem with
>>making near field measurements is that the near field varies all over
>>the map with the type of antenna and the exact spot where you're making
>>the measurement. And it's of no importance at all to anything very far
>>away at all. I've only seen near field probing done to locate the source
>>of a problem emission. Compliance measurements are usually done with
>>far-field techniques, in or at least at the fringes of the far field.
>>The "within the near field" measurements I'm referring to are HF
>>measurements done at distances that aren't firmly in the far field. (The
>>far field boundary depends on the nature of the radiating structure, and
>>is nebulous anyway.) The FCC addresses this issue for Part 15 somewhat
>>in section 15.31(f).
>>
>>Roy Lewallen, W7EL
>
>
>
> I was going to ask you to define "far-field", and i thought maybe
> people defined this as a number of wave-legnths away, but if it's
> nebulous like a lot of RF topics, then i would certainly understand.
>
>
> Slick

2162. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 16:45:20 UTC
From: G&R <spam@limbo.hell>
Message-ID: <wkTUa.181$537.62423@news20.bellglobal.com>
Source record: 111706

HEllo,

I don't cliam that it is the smallest beam for what you are looking for, but
it should be considered.

Take a look at the Baby Boomer Quad by Degen Designs at www.degendesigns.com
I think it might meet your requirements.

If you have any questions, please contact me directly at
info@degendesigns.com (note: my newsgroup posting address is designed to
avoid spam and will note reach me)

73,
Guenther VE3CVS
info@degendesigns.com

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:867k64uhje.fsf@skylane.kjsl.com...
> What is the smallest commercially made beam that covers 20 through 10?
>
> 73,
> -jav w6vms

2163. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 17:09:00 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <IJXoNmNscAJ$EA9q@ifwtech.co.uk>
Source record: 111713

W5DXP wrote:
>Ian White, G3SEK wrote:
>> As you yourself say, the Bird senses current and voltage samples; and
>>these are then added (forward) or subtracted (reverse). There is no
>>physical mechanism inside the Bird by which E x I multiplication takes
>>place, so power is not directly sensed or measured.
>
>I'm sorry, but that is incorrect. Refresh your memory on how a slide
>rule multiplies. Two linear values of length are physically added but
>a product is read from the results. The secret to multiplying using
>linear scales is to calibrate that linear scales logarithmically.
>It's easy to understand for a slide rule, is it not? The same applies
>to the Bird wattmeter scale.
>
You are mistaken. You may want it to be so, but it ain't.

The Bird "power" scale is almost a pure square law, indicating power as being proportional to V-squared, where V is the voltage detected by the diode in the slug. No log function is involved.

This isn't just theory. I and another person have independently verified the Bird 43's scale law by experiment, measuring the meter current at various power levels and then determining the mathematical law of the meter scale. We even took the current measurements to the level of precision where we could see that a few of the Bird's individual scale marks weren't drawn in quite the right place relative to all the rest. We confirmed that the calibration fits the square law almost perfectly near the top end of the scale, but deviates by a few percent near the bottom end where diode's threshold voltage becomes significant.

>The Bird takes two linear voltages and adds them.

Agreed. One voltage is a sample of the voltage on the centre conductor of the Bird's internal transmission line, and the other is derived by transformer action from the current on the line. When sensing in the forward direction, these voltages are made to add in phase; then the sum is detected by the diode.

When the slug is turned around, the current sample reverses its phase but the phase of the voltage sample stays the same, so now the two subtract. With a matched load, the two voltages are arranged to be equal and opposite so you get a null in the reverse direction. That's what gives the Bird its directional properties.

>But the power scale on
>the Bird meter face is scaled logarithmically just like it is on a slide

>rule.

Sorry, that is factually incorrect, so everything you concluded from it
is incorrect too.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2164. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 17:40:27 UTC
From: Hank Oredson <horedson@att.net>
Message-ID: <f8UUa.73775$3o3.4975431@bgtnsc05-news.ops.worldnet.att.net>
Source record: 111707
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

"Brian Kelly" <kelly@dvol.com> wrote in message
news:d22b54c3.0307270824.318dce31@posting.google.com...
> peter@strg-alt-entf.org (Peter Lemken) wrote in message
news:<bg03i6$j9ehk$5@ID-31.news.uni-berlin.de>...
> > In rec.radio.amateur.dx Rob Kemp <robkemp90210@hotmail.com> wrote:
> >
> > > BPL pollution ? please file reply comments by August 6 (the FCC site
> > > tends to go down close to deadlines so try and post in plenty of
> > > time).
> >
> > You have already lost the battle.
> >
> > What can you say against an argument that includes "Homeland Security"?
> >
> > "Further, the addition of BPL facilities-based technologies will, as
> > correctly recognized by the Commission, enhance homeland security by
> > "creating new facilities to provide redundancy."
> >
> > Has anyone done a grep for 'terror' throughout these documents?
> >
> > And the fact that BPL has been abandoned for economic reasons in Germany
> > will probably make the US-guys feel that they can do a lot better than us
> > stupid Krauts. After all, we lost the war.
>
> Both of 'em actually.
>
> > Bye bye ham radio in the US.
>
> Don't put that in the bank. I've seen some analyses of BPL economics,
> beyond dismal. Breakeven point for recovering the initial investments
> is projected to be ten years out. How do you suppose Wall Street will
> react to that when that black cat gets out of the bag? Power utility
> mangements have to be among the worst of all possible types to
> shepherd anything hi-tech comms, they're still wrapped around steam
> engines.
>
> Check out how their brethern in the oil industry, Exxon in particular
> shot itself in the foot when they got the bright idea to get into the
> Qyx memory typwriter business. MBA candidates are still writing case
> study theses on that disaster.
>
> If BPL is approved in the U.S. I expect it to roll over and die almost
> on the spot like it has in Germany. Or it won't be allowed in the

> first place per the the Japanese example and for the same reasons.
>
> I'm not losing a bit of sleep over the prospect of BPL wiping out HF
> radio.

Seems to me that HF radio wiping out BPL is a more probable scenario :-)

> >
> > Peter Lemken
> > Berlin
>
> w3rv

--

... Hank

Hank: http://horedson.home.att.net
W0RLI: http://w0rli.home.att.net

2165. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 17:57:36 UTC
From: dplatt@radagast.org
Message-ID: <vi84kgbtde9j05@corp.supernews.com>
Source record: 111708

>Dave,
> How about an 'UnUn', then?
> 'Doc

That's exactly what the authorities say when they catch up with the
pirate broadcaster. They usually wag one finger back and forth, too
(in symbolic representation of a modulation meter, I suppose).

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2166. Re: 2m/440 portable beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 18:07:01 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.07.27.18.06.55.846663@mailhot.reversethatanddropthis.com>
Source record: 111709

I suggest you look at http://www.arrowantennas.com/ specifically http://www.arrowantennas.com/146-437.html I have one of these very durable featherweights. It disassembles down to 22" long, and even has a roll-up bag available for it. Al wants an extra USD 38 for the bag, but mine fits fine in my backpack, with the boom and 2M elements in the fishing rod pocket, and the 440 elements in a zipper pocket. It's all aluminum, with elements made of Easton 1816 arrow shafts.

It weighs 20 oz in the split-boom form, 19 oz as a solid-boom - a bit over half a Kg. They're very popular with backcountry hikers, as they give good performance on 2M & 70cm in a single light package, are easy to set up and take down, and can endure a lot of abuse (think about what an arrow goes through in normal use). If you need to work crossband duplex, you'll either need a rig with two antenna connectors (that's how I work portable UO-14 with my FT-817) or get a duplexer. Al sells one that's designed to fit inside the boom, bringing the cables out the back of the handle, for USD 59 with BNC or 64 with SMA for the radio end.

I don't work for the company (though my daughter and I did get a factory tour yesterday with BARC Jr). It's just Al Lowe and his wife doing all production and shipping.

73,
n9hmg

On Sat, 26 Jul 2003 19:08:53 -0500, 'Doc wrote:

> Christian,
> Take any 2 meter/70 cm beam, mark the boom at each
> element. Disassemble and pack it along with you...
> 'Doc

2167. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 18:07:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2415ea$1_2@corp.newsgroups.com>
Source record: 111711

Richard Clark wrote:
> Your failure to confirm or respond to Walt's second correction offers
> compelling further evidence that you are an unreliable correspondent.

Actually, it confirms that I am a polite correspondent.
Walt and I are discussing this in private email.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2168. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 18:07:55 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <%xUUa.141496$GL4.36317@rwcrnsc53>
Source record: 111710

By covering 20 through 10 do you mean 20, 17, 15, 12 and 10?

DD, W1MCE

Javier Henderson wrote:

> What is the smallest commercially made beam that covers 20 through 10?
>
> 73,
> -jav w6vms

2169. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 18:16:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f241831_2@corp.newsgroups.com>
Source record: 111712

Ian White, G3SEK wrote:
> Wrong. The Bird has no second meter coil, and no other physical
> mechanism to multiply the E sample by the I sample.

Remember when nomograms were popular? Do you think you could
design a nomogram with variables of voltage and current to yield
power? Where's the physical multiplication mechanism?
--
73, Cecil http://www.qsl.net/w5dxp

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-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2170. Re: The myth that BPL is a solution for rural broadband

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 18:28:11 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <%QUUa.159802$N7.21755@sccrnsc03>
Source record: 111714

"Zoran Brlecic" <...WA7AA...@get.lost> wrote in message
news:3F221436.8060909@get.lost...
> Maximo Lachman wrote:
>
> > But the motive still holds. Have you noticed that the ARRL is
> > collaborating w/the bpl providers to place the interference on SW [snip]
> > ...
> > Obviously, such a strategy will help to clear out the low-rent tenants
> > currently cluttering the U.S. SW spectrum, so it can be gentrified for
> > a better class of paying customers.[snip]
> > ...
> > There are also trucking companies that want to get exclusive use of
> > HF spectrum to track their shipments.
>
>
> Great. If you could now only work in Roswell, grassy knoll, Elvis, moon
> landing hoax, the CIA and the Jews, you'd have it made.
>
> BPL is bad enough without idiotic conspiracy theories.
>
>
> WA7AA
>
>
>
>
>
>
> --
>
> Anti-spam measure: look me up on qrz.com if you need to reply directly
>

2171. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 19:03:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0g88ivkd8i1m8kbgpggpg1ekkl04i07ntj@4ax.com>
Source record: 111715

On Sun, 27 Jul 2003 13:07:13 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Your failure to confirm or respond to Walt's second correction offers
>> compelling further evidence that you are an unreliable correspondent.
>
>Actually, it confirms that I am a polite correspondent.
>Walt and I are discussing this in private email.

So this makes the third occurence.

2172. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 19:25:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f24282a_4@corp.newsgroups.com>
Source record: 111716

Ian White, G3SEK wrote:
> W5DXP wrote:
>> I'm sorry, but that is incorrect. Refresh your memory on how a slide
>> rule multiplies. Two linear values of length are physically added but
>> a product is read from the results. The secret to multiplying using
>> linear scales is to calibrate that linear scales logarithmically.
>> It's easy to understand for a slide rule, is it not? The same applies
>> to the Bird wattmeter scale.
>>
> You are mistaken. You may want it to be so, but it ain't.
>
> The Bird "power" scale is almost a pure square law, indicating power as
> being proportional to V-squared, where V is the voltage detected by the
> diode in the slug. No log function is involved.

Exponent functions are exactly what logarithms are all about so I don't understand the significance of your assertion. If V(v) is the voltage proportional to the total voltage and V(i) is the voltage proportional to the total current and V(v)=V(i), are you saying that log(V^2) is not equal to 2*log(V)? I say log(V^2)=2*log(V), i.e. the square law power function is a linear function using logarithms. That's the basis of the Bird wattmeter design. I would certainly like to see a proof that log(V^2) is not equal to 2*log(V). (So would a lot of people wearing white coats. :-))
--
73, Cecil http://www.qsl.net/w5dxp

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2173. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 19:28:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2428d8$1_4@corp.newsgroups.com>
Source record: 111717

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>
>>Richard Clark wrote:
>>>Your failure to confirm or respond to Walt's second correction offers
>>>compelling further evidence that you are an unreliable correspondent.
>>
>>Actually, it confirms that I am a polite correspondent.
>>Walt and I are discussing this in private email.
>
> So this makes the third occurence.

There is no pleasing you guys. Many say, "Take it to private email!",
and you say, "Don't take it to private email." What is a poster to do?
--
73, Cecil http://www.qsl.net/w5dxp

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2174. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 19:53:53 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307271153.4830693@posting.google.com>
Source record: 111718

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
> It is a pity that you do not have a interest in computor programs
> or an interest in using one because if you did you could add to
> your experience without the need of buying another book.

What good would it do? You would just ignore any results he had using the program. Richard quotes his sources so you can look them up and verify. What sources, tests, or otherwise, do you have to back up any of your claims? Do you have any? This is not a trick question. MK

2175. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 20:05:34 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307271205.10cbad33@posting.google.com>
Source record: 111619

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307251538.535e8833@posting.google.com>...
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vi2nb57rfnqhe2@corp.supernews.com>...
> > One of the most serious and persistent problems you've had in
> > communicating your antenna ideas is your insistence on creating and
> > using your own unconventional definition of efficiency. As I've pointed
> > out before, and to no effect, is that the term has a universally
> > accepted definition with regard to antennas. As long as you continue to
> > make up your own definition, you'll increase your difficulty in
> > communicating your ideas. But it's a choice you've made.
> >
> > Roy Lewallen, W7EL
>
> Roy, the die was cast years ago when anything "new" was trashed
> without a hearing.

Without a "hearing" would be an apt description. I keep telling you
you should build one to actually see if it works, but you don't or
won't listen.

I now accept that all is now known about antennas
> except the really deep things that Cecil is so bravely pushing on with
> where I failed.

When it comes to the definition of "efficiency" yes, it is already
known.

> Even if I was to demonstrate succesfully a different antenna I would
> have as much success in persuasion as the U.S. Government is having at
> home and abroad.

Why? Are you admitting it probably doesn't work?

> Just forget about my antenna and go with the common consensus that it
> can't possibly be true since I have no credability.

I don't think your antenna will work as you have planned, but your
credibility or lack of it, has nothing to do with it. I modeled the
thing. I know how it will work. Or at least the version I tested. MK

2176. Helical Stub Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 20:11:46 UTC
From: Phil Green <philip.r.green@btinternet.com>
Message-ID: <bg1bm2$fh4$1@hercules.btinternet.com>
Source record: 111620

Hi,

Does anyone have any info on designing helical antennas for use on
handheld transceivers (70cms etc)?

I am interested in designing for other freqs, so equations would be useful..

Thanks
Phil G0ELM

2177. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 20:22:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <eic8ivk4evp4363tmfb629tea7kttnmsdg@4ax.com>
Source record: 111621

On Sun, 27 Jul 2003 14:28:00 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>
>>>Richard Clark wrote:
>>>>Your failure to confirm or respond to Walt's second correction offers
>>>>compelling further evidence that you are an unreliable correspondent.
>>>
>>>Actually, it confirms that I am a polite correspondent.
>>>Walt and I are discussing this in private email.
>>
>> So this makes the third occurence.
>
>There is no pleasing you guys. Many say, "Take it to private email!",
>and you say, "Don't take it to private email." What is a poster to do?

Admit your repeated public errors
>On Sun, 27 Jul 2003 00:33:47 GMT, "Walter Maxwell" <w2du@iag.net> wrote:
>Cecil, this is the error on Reflections that I told you about last week
that have already been solved in private correspondence. Why do you
make Walt come to this public forum to correct you for an error he has
already corrected in "private" emails?

You continue to support the evidence of not having read your
correspondence from Walt, or ignoring it to offer a knowingly
erroneous premise. This is unreliable correspondence at two levels.

73's
Richard Clark, KB7QHC

2178. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 20:24:04 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <wqidncz0JqV3qbmiXTWJkw@comcast.com>
Source record: 111622

Whatever it is, you may not want it. I measured the gain of a TA33JR on 20 m, and it was less than a dipole.

Tam/WB2TT
"Javier Henderson" <javier@KJSL.COM> wrote in message news:867k64uhje.fsf@skylane.kjsl.com...
> What is the smallest commercially made beam that covers 20 through 10?
>
> 73,
> -jav w6vms

2179. Re: My Name Is Arthur Unwin

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 21:03:58 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.07.27.21.03.52.589093@mailhot.reversethatanddropthis.com>
Source record: 111623

On Sun, 20 Apr 2003 23:38:00 -0400, Russ wrote:

> On Sun, 20 Apr 2003 11:11:15 -0400, "Peter Brackett"
> <ab4bc@ix.netcom.com> wrote:
I try to stay away from spelling and grammar flames but sometimes the
> self-styled high and mighty need it. Of course the mixing of past and
> present tense needs pointing out as well.

I was about to go on it myself. I half expect him to ask for help in a
financial transaction from Nigeria.

2180. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 22:35:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2454e3_1@corp.newsgroups.com>
Source record: 111624

Richard Clark wrote:
>>On Sun, 27 Jul 2003 00:33:47 GMT, "Walter Maxwell" <w2du@iag.net> wrote:
>>Cecil, this is the error on Reflections that I told you about last week
> that have already been solved in private correspondence. Why do you
> make Walt come to this public forum to correct you for an error he has
> already corrected in "private" emails?

I haven't accepted Walt's "correction". We are working it out over email.
What is it about that situation that you don't understand?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2181. Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 22:43:30 UTC
From: Peter Wilson <pensal8039@ntlworld.com>
Message-ID: <jAYUa.2515$w4.348338@newsfep2-gui.server.ntli.net>
Source record: 111625

Hi I wish to hook up my G5RV so that the centre is on my mast and the legs go one to my chimney, and the other to my neighbours chimney. the mast from both chimney's is about 55 feet. the two chimneys are about 50 apart. It will form a V with the feeder at the mast. Will it work or is the angle to tight

Thanks in anticipation
pensal@ntlworld.com
Peter

2182. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 22:51:41 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <IZToJjZ9dFJ$EAMm@ifwtech.co.uk>
Source record: 111626

W5DXP wrote:
>Ian White, G3SEK wrote:
>> W5DXP wrote:
>>> I'm sorry, but that is incorrect. Refresh your memory on how a slide
>>> rule multiplies. Two linear values of length are physically added but
>>> a product is read from the results. The secret to multiplying using
>>> linear scales is to calibrate that linear scales logarithmically.
>>> It's easy to understand for a slide rule, is it not? The same applies
>>> to the Bird wattmeter scale.
>>>
>> You are mistaken. You may want it to be so, but it ain't.
>> The Bird "power" scale is almost a pure square law, indicating power
>>as being proportional to V-squared, where V is the voltage detected
>>by the diode in the slug. No log function is involved.
>
>Exponent functions are exactly what logarithms are all about so I don't
>understand the significance of your assertion. If V(v) is the voltage
>proportional to the total voltage and V(i) is the voltage proportional
>to the total current and V(v)=V(i),

V(v) and V(i) are *added* - vectorially, as two RF voltages connected in
series - and then the sum voltage is detected. No logs are taken and
they are not multiplied together in any other way. The detected voltage
(now DC) is squared by the meter scale law to indicate power.

You were caught in a totally incorrect statement about the meter scale
law, but you can't stop dodging. Just read again what you wrote:

>are you saying that log(V^2) is not
>equal to 2*log(V)? I say log(V^2)=2*log(V), i.e. the square law power
>function is a linear function using logarithms. That's the basis of
>the Bird wattmeter design. I would certainly like to see a proof that
>log(V^2) is not equal to 2*log(V). (So would a lot of people wearing
>white coats. :-))

So "The square law power function is a linear function using
logarithms".

Reductio, meet Absurdum.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2183. Design needed for VHF anteena. ~122.00 mhz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 22:55:32 UTC
From: joedrel@co{no_spam}x.net
Message-ID: <ujl8iv4r021a3uun36bg0r6u3084h8o2o2@4ax.com>
Source record: 111627

I fly an ultralight and recently bought a Delcom 960 transceiver. I
have used it ground based and the stock "rubber ducky" really sucks.
I receive ok, but just can't get out with it.
I am humbly asking the rec.radio.amateur.antenna braintrust to direct
me to a site (or instructions) that show how to construct a nice
antenna that I can install in my plane.
Since my plane has no aluminum skin I envision creating a groundplane
out of a piece of aluminum (24" x24"?).
What length should the antenna be? Do I attach the braid of the coax
to the ground plane?
I am very handy, but just lack the basic dimensions.
A response to joedrel@hotmail.com will be appreciated, but I will be
monitoring this group..

Any direction will be much appreciated.

Joe

2184. How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-27 23:28:31 UTC
From: jgboyles@aol.com
Message-ID: <20030727192831.06745.00000672@mb-m06.aol.com>
Source record: 111628

Hi, I thought I understood this but recent discussions left me wondering.
A Bird Wattmeter provides a voltage that is proportional to the forward power minus the reflected power. This assumes the output impedance is known and constant, usually 50+-j0. Assume a Bird has a 0-10vdc meter for indication. I don't know what it is, but for discussion.
Input 100 watts into a 50 ohm load, and you get 70.7 volts, the Bird scales this to 1 volt, and you get 10% deflection on your wattmeter, or 100 watts. Input 1000 watts and you get 223.6 volts which the Bird scales to 3.16 volts, or 316 watts. 316 does not equal 1000, so the scale on the meter has to have V**2 relationship to indicate 1000 watts. So 1000 watts is 31.6% of full scale. I thought all Ham wattmeters did this. Of course it is highly dependent on the Z the wattmeter sees. Wattmeters that actually multiply V and I are another subject, it is hard to keep them in line without causing some insertion loss, is it not?
73 Gary N4AST

2185. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 00:05:07 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307271605.3709e9b0@posting.google.com>
Source record: 111629

Well Cecil what ever you do do not use the word efficiency,
just use the ratio between X and Y fully stating what X is
and Y is. This way the word efficiency need not be used
for a baseless augument. I am very pleased by the way, that you are
not attempting to explain anything new but just educating the masses
on what is already known, and forgotton by the way, and re presenting
the facts of nature in a way everybody can understand that leaves no
room for argument.
If you do find something new present it in such a way that the Gurus
can respond in such a way that it is their idea or they knew it all
along but have just been to busy to write it up.
Send your paper again with the footnote that their previous response
and leadership is what you built upon and which you need further
assistance from them. It should then get printed in a couple of months
and your name printed as a foot note.
I saw a aeroplane crash data box a short time ago only to find that
is not a black "box" as previously stated. Ever thought of designing a
better black "box" to put it in and then become famous in your own
mind? The previous one made of cardboard just didn't work out when
things became all wet.

Best regards
Art
P.S. I misquoted the price of AO pro, the program actually costs $600

or X andW5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f21d4e2_6@corp.newsgroups.com>...
> Art Unwin KB9MZ wrote:
> > Roy, the die was cast years ago when anything "new" was trashed
> > without a hearing. I now accept that all is now known about antennas
> > except the really deep things that Cecil is so bravely pushing on with
> > where I failed.
>
> One slight correction, Art. Because of the similarity between light and
> radiated EM waves, most things about antennas are known, at least to the
> limit of the models to handle reality.
>
> However, it appears to me that some things have been overlooked when the
> coherent EM waves are confined to a one-dimensional transmission line. Those
> things that have been overlooked are what I am pursuing and as far as I can
> determine, they happen only inside a transmission line or at a thin-film
> non-reflective surface using coherent light waves. That's what makes it
> special.
>
> That is not to conclude that you haven't discovered something special,

> just that my focus is Z0-match points inside transmission lines and
> non-glare thin-film coatings involving orthogonal coherent light.

2186. INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 00:19:26 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <1bq8iv048vbmam3ern1cphe7l63o9dfm17@4ax.com>
Source record: 111630

I've put up an inverted-L, which consists of approx. 135' horizontal
leg, and approx. 70' vertical leg. I can shorten the overall length of
the antenna, but cannot lengthen it. There are about 4 ground rods
within about 10' of the base ofthe vertical element, plus about 25
square feet of chickenn wire to serve as a ground plane. I can feed
the antenna right at ground level, or can arrange to feed it up to
6-10' above ground. There is about 120' of buried coax to the shack,
which must feed this antenna. I'd like to use this inverted-L on
160-10M (will settle for 80-10M).
1) How to feed the antenna and be able to run legal limit, all bands?
Current or voltage balun? Won't a balun disspiate power and decrease
efficiency? WIll a balun at ground level increase ground losses?
2) How is the inverted-L said to be a vertically polarized antenna,
when a major portion of its radiating element is horizontal?
3) For Field Day we added another vertical leg to this antenna to make
it into a half-square, and had decent results on 40M/20M. How is the
half-square described as "two verticals in phase", when again, there
is a major part of the antenna (the so-called "phasing element") which
is horizontal?
Thanks and 73
Dan (K0DAN)
NOSPAM-dt0124@arrl.org

2187. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 00:37:09 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bg1r75$2tl$1@slb3.atl.mindspring.net>
Source record: 111631

Please describe how you measured this gain.

Dan/W4NTI

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:wqidncz0JqV3qbmiXTWJkw@comcast.com...
> Whatever it is, you may not want it. I measured the gain of a TA33JR on 20
> m, and it was less than a dipole.
>
> Tam/WB2TT
> "Javier Henderson" <javier@KJSL.COM> wrote in message
> news:867k64uhje.fsf@skylane.kjsl.com...
> > What is the smallest commercially made beam that covers 20 through 10?
> >
> > 73,
> > -jav w6vms
>
>

2188. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 00:44:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f247326_2@corp.newsgroups.com>
Source record: 111632

Ian White, G3SEK wrote:
> V(v) and V(i) are *added* - vectorially, as two RF voltages connected in
> series - and then the sum voltage is detected. No logs are taken and
> they are not multiplied together in any other way. The detected voltage
> (now DC) is squared by the meter scale law to indicate power.

Yes, when you add two values on a slide rule, you are accomplishing multiplication because the scales are logarithmic. When you add two values of voltage, you are multiplying them if the meter scale is properly calibrated. Log(V1^2) = Log(V1*V1) = Log(V1) + Log(V1)

> You were caught in a totally incorrect statement about the meter scale
> law, but you can't stop dodging. Just read again what you wrote:

I still don't understand why log(V1)+log(V1) doesn't equal log(V1*V2) which doesn't equal log(V1^2).

Here's an example: Let's say we have a slide rule where the distance between the '1' index and the '2' is one inch. We set the index on '2' and read the value of the product off the '2' on the other scale. All we have done is add one inch to one inch and everyone knows that is two inches. But because of the logarithmic scale we read '4' as the answer. Thus the answer to '2' times '2' is '4' even though all we did was physically add one inch to one inch. How can one inch plus one inch yield an answer of '4'? The same way one volt plus one volt can yield an answer of 200 watts.

Let's say one volt inside the Bird equals 100 volts on the transmission line and one volt inside the Bird equals 2 amps on the transmission line. When the meter measures two volts, we calibrate the Bird at 200W. When the meter measures four volts, we calibrate the Bird at 800W. That's similar to the logarithmic calibration of the slide rule. We are adding one volt to one volt but we are reading the product off the wattmeter scale.

>> are you saying that log(V^2) is not
>> equal to 2*log(V)? I say log(V^2)=2*log(V), i.e. the square law power
>> function is a linear function using logarithms. That's the basis of
>> the Bird wattmeter design. I would certainly like to see a proof that
>> log(V^2) is not equal to 2*log(V). (So would a lot of people wearing
>> white coats. :-))
>
> So "The square law power function is a linear function using logarithms".

Of course. Log(V1^2)= Log(V1)+Log(V1) does it not? Is that not a linear function? That's how slide rules work. You add logarithms to accomplish multiplication. What am I missing?

--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2189. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 00:50:04 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f247455$1_2@corp.newsgroups.com>
Source record: 111633

nbr wrote:
> 1) How to feed the antenna and be able to run legal limit, all bands?

Put your matching network at the base of the antenna. Feed your matching
network with coax.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2190. Re: Fight the BPL

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 01:41:43 UTC
From: Uncle Peter <radioconnectionNO@cox.netSPAM>
Message-ID: <T9%Ua.26202$zd4.22593@lakeread02>
Source record: 111634
Cross-posted to:
rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.policy,rec.radio.swap

"Phil Kane" <Phil.Kane@nov.shmovz.ka.pop> wrote in message
news:cuvyxnansvbet.hi8r2re.pminews@netnews.comcast.net...
> On Fri, 18 Jul 2003 18:59:18 -0000, Dave Platt wrote:
>
> >you'll spend a lot more on equipment, *and* your neighbors (BPL-using
> >and otherwise) will be much more likely to experience harmful
> >interference.
>
> "Harmful interference" is a specific technical term of art in
> communications regulatory law that refers to interruption to a
> licensed communications service and places the responsibility to
> alleviate the situation on the operation causing the problem.
>
> Your neighbors will experince "unwanted interception" which you
> have no obligation to deal with except to make a reasonable amount
> of tests to enable the neighbor's repair tech to check the
> effectiveness of whatever protective measures they are making to the
> affected home electronic/entertainment equipment.
>
> You, OTOH, will receive "harmful interference" from the BPL operation.
>
> Go get 'em, tiger....
>
> --
> 73 de K2ASP - Phil Kane
> ARRL Volunteer Counsel
>
What will probably happen, given that BPL takes off, is that Amateur
interference to BPL users will cause enough uproar for the FCC
to impose quiet hours or power limits on hams.
Money talks, hams will walk. Licensed
service or not.

Pete

2191. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 01:47:11 UTC
From: Jimnn7k@reno.rmci.net
Message-ID: <17%Ua.4228$R43.3421@fe01.atl2.webusenet.com>
Source record: 111635

'corse, should have attached the "smiley face" (my cynisicasm is/was on
:>) !!) Jim

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vi6i9vr1gov963@corp.supernews.com...
> The answer is no. You should be able to figure out the reason why by
> reading the previous postings in this thread.
>
> Roy Lewallen, W7EL
>
> Jimnn7k@reno.rmci.net wrote:
> > Just playing devels advocate here, but, as you state "If you put X watts
> > into one antenna and extract Y watts from an antenna coupled to it, and
> > measure the efficiency of the "transformer" the same way as you did the
> > conventional transformer, you'll find it has lousy
> > efficiency.", does that refer to the 377 ohms (or so) free space
coupling
> > impedence, or could that effeciency be improved by having the antenna's
> > matched radiation resistance approach that 377 ohms? (I.E. max
transfer of
> > power is at Z0 (in) matches Z0(out)! or, is this academic for this?
> > Perhaps, better for Dr. Shorza Gitchigoumi of CQ fame, or Larson E. Rapp
of
> > ARRL fame (both with bad habit of only presenting articles in the 4th
month
> > of the year in their respective publications) ! But, I'd thought I had
> > better ask! Jim NN7K
> >
> >
> > "Roy Lewallen" <w7el@eznec.com> wrote in message
> > news:vhsk4n5lamhs29@corp.supernews.com...
> >
> >>I hope you'll pardon me for amplifying this a little.
> >>
> >>If you put X watts into the primary of a transformer and extract Y watts
> >>from the secondary, the efficiency is Y/X by definition.
> >>
> >>If you put X watts into one antenna and extract Y watts from an antenna
> >>coupled to it, and measure the efficiency of the "transformer" the same
> >>way as you did the conventional transformer, you'll find it has lousy
> >>efficiency. Why? Because a goodly fraction of the power you applied to
> >>the "primary" antenna never gets to the "secondary" antenna because it's
> >>radiated instead. As far as the "secondary" is concerned, it might as
> >>well have been converted to heat.

> >>
> >>If you look at the impedance of the "primary" antenna, you'll find an
> >>excess of resistance -- just enough, in fact, to account for the "lost"
> >>(radiated) power.
> >>
> >>This isn't a statement about how well coupled antennas function as
> >>antennas, whose purpose is to radiate after all. It's a statement about
> >>how well they function as a transformer. Poorly.
> >>
> >>Roy Lewallen, W7EL
> >
> >
> >
> >
>

2192. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 01:57:10 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <aj09ivkg3pv9p48s1pum34puels1i72k5t@4ax.com>
Source record: 111636

On Sun, 27 Jul 2003 19:50:04 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>nbr wrote:
>> 1) How to feed the antenna and be able to run legal limit, all bands?
>
>Put your matching network at the base of the antenna. Feed your matching
>network with coax.

Thanks for your reply to my message, but this is not feasible. The
antenna is 120' from the shack, unblanaced transmatch in the shack.
Looking for matching network at the base of the antenna (or apex,
maybe), perhaps balun (???), but needs to be broadband so antenna can
operate multiband.
Thanks and 73
dan

2193. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 01:57:37 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hk09iv4dqnsrtai8h3c6vm0b42tnrc64r0@4ax.com>
Source record: 111637

On Sun, 27 Jul 2003 17:35:53 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>What is it about that situation that you don't understand?
How it answers your problem of the simple visuals that hold back part two (a year in making it past that one point alone). This train never seems to leave the station.

2194. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 02:17:29 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Emudnag00PojGrmiXTWJkg@comcast.com>
Source record: 111638

A/B comparison between the dipole broadside to Europe, and TA33 with a rotator. People who sell trapless beams make the same claim. Remember, this is the JR, with small traps, too short a boom, and element lengths that have been fudget to get a very nice 50 Ohm impedance with no matching network of any kind. (Or there is enough resistance in the traps). Front to back and front to side are also very poor.

I got comments from G and DL stations who all preferred the dipole. Receiving, the difference in favor of the dipole was huge (several S units) on an HA.

Replaced it with a full power beam on a 14 foot boom and hairpin match.

Tam/WB2TT
"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
news:bg1r75$2tl$1@slb3.atl.mindspring.net...
> Please describe how you measured this gain.
>
> Dan/W4NTI
>
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
> news:wqidncz0JqV3qbmiXTWJkw@comcast.com...
> > Whatever it is, you may not want it. I measured the gain of a TA33JR on
20
> > m, and it was less than a dipole.
> >
> > Tam/WB2TT
> > "Javier Henderson" <javier@KJSL.COM> wrote in message
> > news:867k64uhje.fsf@skylane.kjsl.com...
> > > What is the smallest commercially made beam that covers 20 through 10?
> > >
> > > 73,
> > > -jav w6vms
> >
> >
>
>

2195. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 02:47:19 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <3F248E83.4000105@tampabay.rr.com>
Source record: 111639

hey there
i am planning on a similar antenna here is the website for it
http://www.bloomington.in.us/~wh2t/invertedl.html

according the the person who did this website if you feed it at the
ground you can feed it with 50 ohm coax
good luck and let me know how it turns out

2196. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 04:29:40 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vi99mh6pssd865@corp.supernews.com>
Source record: 111640

Egad, how big of a job could it be to put it up and try it?

Roy Lewallen, W7EL

Peter Wilson wrote:
> Hi I wish to hook up my G5RV so that the centre is on my mast and the legs
> go one to my chimney, and the other to my neighbours chimney. the mast from
> both chimney's is about 55 feet. the two chimneys are about 50 apart. It
> will form a V with the feeder at the mast. Will it work or is the angle to
> tight
>
> Thanks in anticipation
> pensal@ntlworld.com
> Peter
>
>

2197. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 05:25:46 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F24B3DA.E2856F24@cwis.net>
Source record: 111641

```
Or, since this is an unbalanced, pirate antenna,
would that be a 'Pun-Pun'?
'Doc
```

2198. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 06:06:57 UTC
From: Ed Cregger <ecregger@hotmail.com>
Message-ID: <tW2Va.4296$R43.111@fe01.atl2.webusenet.com>
Source record: 111642

I will go so far as to say that even in the configuration that you described (original poster) it will easily outperform any $400 to $500 multiband vertical antenna that you can buy (figured on the highest average performance on the most available bands). Good enough?

Ed Cregger, NM2K

2199. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 06:21:17 UTC
From: Sarge <sarge43@ev1.net>
Message-ID: <vi9gdogu1s4542@corp.supernews.com>
Source record: 111643

I thought the feedline could not be near the METAL mast... Am I wrong?

Ed Cregger wrote:
> I will go so far as to say that even in the configuration that you
> described (original poster) it will easily outperform any $400 to
> $500 multiband vertical antenna that you can buy (figured on the
> highest average performance on the most available bands). Good enough?
>
> Ed Cregger, NM2K

2200. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 06:33:39 UTC
From: Ed Cregger <ecregger@hotmail.com>
Message-ID: <wj3Va.4304$R43.1298@fe01.atl2.webusenet.com>
Source record: 111644

So use PVC, or some other work around.

Ed Cregger

"Sarge" <sarge43@ev1.net> wrote in message
news:vi9gdogu1s4542@corp.supernews.com...
> I thought the feedline could not be near the METAL mast... Am I wrong?
>
>
> Ed Cregger wrote:
> > I will go so far as to say that even in the configuration that you
> > described (original poster) it will easily outperform any $400 to
> > $500 multiband vertical antenna that you can buy (figured on the
> > highest average performance on the most available bands). Good enough?
> >
> > Ed Cregger, NM2K
>
>

2201. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 06:47:22 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <TniOWXE6bMJ$EAdy@ifwtech.co.uk>
Source record: 111647

JGBOYLES wrote:
>Hi, I thought I understood this but recent discussions left me wondering.
> A Bird Wattmeter provides a voltage that is proportional to the forward power
>minus the reflected power. This assumes the output impedance is known and
>constant, usually 50+-j0. Assume a Bird has a 0-10vdc meter for indication. I
>don't know what it is, but for discussion.
> Input 100 watts into a 50 ohm load, and you get 70.7 volts, the Bird scales
>this to 1 volt, and you get 10% deflection on your wattmeter, or 100 watts.
>Input 1000 watts and you get 223.6 volts which the Bird scales to 3.16 volts,
>or 316 watts. 316 does not equal 1000, so the scale on the meter has to have
>V**2 relationship to indicate 1000 watts. So 1000 watts is 31.6% of full
>scale. I thought all Ham wattmeters did this.

That isn't how any directional wattmeter like the Bird works. There's
information at:
www.ifwtech.co.uk/g3sek/in-prac/best-of.htm#bruene

This is mostly about the Bruene bridge type (the ones with a toroid).
Those are easiest to understand, because you can see very clearly how
they take separate voltage and current samples from the line.

The original explanation came from the classic 1959 QST article by
Bruene (of the Collins company, who knows how his own bridge works) and
is backed by Walt Maxwell. I repeated it in my magazine column because
today's readers still need it... perhaps now more than ever!

My article goes on to show how exactly the same principles apply to the
Bird. Once you know about taking V and I samples, it becomes much easier
to see how the Bird's pickup loop is doing both at the same time -
taking the I sample by magnetic coupling and the V sample by capacitive
coupling.

It's also very easy to see that the V sample and the I sample are never
multiplied - only added and subtracted at RF, *before* the resulting RF
voltage goes into the detector diode.

Therefore the Bird does not directly sense RF power. As Walt confirmed
very recently, the power indication on the scale is obtained by external
calibration.

> Of course it is highly
>dependent on the Z the wattmeter sees.

Yes - but the same concepts tell you why the Bird indicates what it
does.

>Wattmeters that actually multiply V and
>I are another subject, it is hard to keep them in line without causing some
>insertion loss, is it not?

And harder still to find one - I've never seen or heard of one that does
it that way for RF.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2202. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 07:40:56 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <vGuRewGIONJ$EAoi@ifwtech.co.uk>
Source record: 111646

nbr wrote:
>On Sun, 27 Jul 2003 19:50:04 -0500, W5DXP <Cecil.A.Moore@ieee.org>
>wrote:
>
>>nbr wrote:
>>> 1) How to feed the antenna and be able to run legal limit, all bands?
>>
>>Put your matching network at the base of the antenna. Feed your matching
>>network with coax.
>
>Thanks for your reply to my message, but this is not feasible. The
>antenna is 120' from the shack, unblanaced transmatch in the shack.
>Looking for matching network at the base of the antenna (or apex,
>maybe), perhaps balun (???), but needs to be broadband so antenna can
>operate multiband.

Cecil's right - it can't be done without a matching network at the base, because the feedpoint impedance varies too much between bands.

Your antenna is about a twice-size version of mine. I have a 35ft vertical, with a 35ft horizontal section followed by a "switch" that can connect another 65ft (all dimensions approximate). It's fed through matching networks at the bottom of the vertical, against a large number of radials.

The extra length of horizontal is only used for Top Band (quarter-wavelength, low Z, needs those radials) and for 80m short-skip (half-wavelength, mostly horizontal, voltage fed so doesn't use the radials much).

With the "switch" open, it's simply a 35ft vertical, 35ft horizontal inverted-L.

Top Band: 1/8-wave, inefficient but long enough to be usable for easy QSOs.

80m: bent quarter-wave, surprisingly effective for DX, but low-Z feed and needs those radials.

40m: voltage-fed half-wave, half vertical and half horizontal - from the UK it's good for mixed European/DX working, but obviously receives the European signals even when you don't want them. High-Z feed.

Higher bands: too long - wastes power in lots of little lobes pointing in useless directions. Gets worse and worse as the frequency goes up, and even a simple dipole is better. Mostly high-Z feed.

As Cecil says, there's no choice but to feed it at the base through matching networks on most bands. Trying to feed it from the shack end through the long run of coax is a non-starter, except on the bands where it's a low-Z feed. On all the other bands the SWR is too high and the losses in the coax are crippling.

For many years I used a conventional T-match ATU out there in a waterproof box. Band-changing was possible, but a chore. Then I tried custom switchable networks, but that became too complex. At present I'm using a military auto-ATU that is 1kW rated and works like a dream.

I would certainly recommend the 35+35ft along inverted-L with an auto-ATU for any small backyard. The extra horizontal length is fine if you can get it - and the advantage of using the auto-ATU is that it can be *any* practicable length; you don't have to worry about matching any more. The only problem is that amateur auto-ATUs are limited to medium power.

Your system is twice as big as mine, so you can shift all the above comments down one band. It should go like a rocket on Top Band, but even on 40m it's getting over-long. If you have other antennas for the higher bands, think of the inverted-L only as your "low-band special" - then two or three remotely switched, pre-tuned matching networks will be all you need.

In your situation I would also consider a remote switch at the top of the vertical, to disconnect the horizontal part completely. You'll then have a very effective DX antenna for 40m. Take a look at N6RK's site, which has some information about switching out the upper sections of antennas for the bands where they are "over-tall".

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2203. Re: Design needed for VHF anteena. ~122.00 mhz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 07:41:32 UTC
From: gsm@mendelson.com
Message-ID: <slrnbi9kkb.53v.gsm@cable.mendelson.com>
Source record: 111645

In article <ujl8iv4r021a3uun36bg0r6u3084h8o2o2@4ax.com>,
joedrel@co{no_spam}x.net wrote:
> I fly an ultralight and recently bought a Delcom 960 transceiver. I
> to the ground plane?
....
> I am very handy, but just lack the basic dimensions.

Look at a J-Pole antenna. There are several websites with calculators
to design the one you want. While some people complain about their
performance J-Poles work fairly well, do not need a ground, are very
light and can be made for under a $1.

It may not be the best antenna for the job, but it will be simple
to make and may do the job you want.

Geoff.

> A response to joedrel@hotmail.com will be appreciated, but I will be
> monitoring this group..

The use a real email address in your reply to.

--
Geoffrey S. Mendelson gsm@mendelson.com 972-54-608-069
Do sysadmins count networked sheep?

2204. Re: Cecil's Math a Blunder?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 09:51:45 UTC
From: richardharrison@webtv.net
Message-ID: <396-3F24F231-100@storefull-2316.public.lawson.webtv.net>
Source record: 111648

Ian, G3SEK wrote:
"The detected voltage (now DC) is squared by the meter scale to indicate power."

That`s right. It only takes about 1.4X the deflection to represent 2X the power.

Cecil was saying the same with his slide rule illustration. To square a number, you multiply the logarithm of the number by 2 and take the antilogarithm of the product. The slide rule is designed to do this for you with its "engine divided scales".

Each sample taken in the Bird wattmeter, line volts and line amps, is exactly half the total sample, so one of them is really redundant to the power indication, were it not needed to cancel sensing of the unwanted direction of power transmission. The 1:1 ratio between samples is ensured by the lock Zo places on the ratio between volts and amps in the transmission line. A dynamometer has no such lock so both both volts and amps must be sampled in the absence of constant volts or constant amps.

Best regards, Richard Harrison, KB5WZI

2205. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 10:04:35 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <a4t9iv0avch44q38ovldeam3t30p3qneql@4ax.com>
Source record: 111649

On Mon, 28 Jul 2003 01:21:17 -0500, "Sarge" <sarge43@ev1.net> wrote:

>I thought the feedline could not be near the METAL mast... Am I wrong?

If you are using the popular 450-Ohm window line you need only keep
the line 2ï¿½-3 inches away from you mast. Additionally twist it a bit
(about 180ï¿½ every couple of feet) and you'll be fine.

Danny, K6MHE

2206. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 12:11:35 UTC
From: Greg Milligan <greg@--NO_SPAM--g1cpu.net>
Message-ID: <3f2512f9@dnews0.news.legend.net.uk>
Source record: 111650

Dan Richardson wrote:

> On Mon, 28 Jul 2003 01:21:17 -0500, "Sarge" <sarge43@ev1.net> wrote:
>
>>I thought the feedline could not be near the METAL mast... Am I wrong?
>
> If you are using the popular 450-Ohm window line you need only keep
> the line 2i¿½-3 inches away from you mast. Additionally twist it a bit
> (about 180i¿½ every couple of feet) and you'll be fine.
>
> Danny, K6MHE

Im slightly puzzled by your last statement. Why will twisting it have any affect?

regards

greg G1CPU

2207. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 12:23:18 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <3f23c42a_4@newsfeed>
Source record: 111651

It exposes both sides "evenly" to the mast, reducing proximity effects.
73, Dave, N3HE

SNIP
>
> Im slightly puzzled by your last statement. Why will twisting it have any
> affect?
>
> regards
>
> greg G1CPU

2208. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 12:53:51 UTC
From: froggers <not.froggers@nospam.ntlworld.com>
Message-ID: <q19Va.1464$bc4.182401@newsfep2-gui.server.ntli.net>
Source record: 111652

Put an SGC at the base and feed it with 12 volts and RF via Co-ax.

Nick

2209. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 13:29:36 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307280529.3f4dcfe8@posting.google.com>
Source record: 111653

nm5k@wt.net (Mark Keith) wrote in message
news:<25eb70d7.0307271205.10cbad33@posting.google.com>...
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307251538.535e8833@posting.google.com>...
> > Roy Lewallen <w7el@eznec.com> wrote in message
news:<vi2nb57rfnqhe2@corp.supernews.com>...
> > > One of the most serious and persistent problems you've had in
> > > communicating your antenna ideas is your insistence on creating and
> > > using your own unconventional definition of efficiency. As I've pointed
> > > out before, and to no effect, is that the term has a universally
> > > accepted definition with regard to antennas. As long as you continue to
> > > make up your own definition, you'll increase your difficulty in
> > > communicating your ideas. But it's a choice you've made.
> > >
> > > Roy Lewallen, W7EL
> >
> > Roy, the die was cast years ago when anything "new" was trashed
> > without a hearing.
>
> Without a "hearing" would be an apt description. I keep telling you
> you should build one to actually see if it works, but you don't or
> won't listen.
>
> I now accept that all is now known about antennas
> > except the really deep things that Cecil is so bravely pushing on with
> > where I failed.
>
> When it comes to the definition of "efficiency" yes, it is already
> known.
>
> > Even if I was to demonstrate succesfully a different antenna I would
> > have as much success in persuasion as the U.S. Government is having at
> > home and abroad.
>
> Why? Are you admitting it probably doesn't work?
>
> > Just forget about my antenna and go with the common consensus that it
> > can't possibly be true since I have no credability.
>
> I don't think your antenna will work as you have planned, but your
> credibility or lack of it, has nothing to do with it. I modeled the
> thing. I know how it will work. Or at least the version I tested. MK

Mark,
Put the whole antenna idea aside The thing could not possibly work, my activity is a total illusion. If anything new comes along, which is highly unlikely since all is known,do you really believe it would be the likes of me to find it? A guy who never went to college, can't type or spell and has no credability. No Mike I am just an ordinary disciple of the gurus on the net
sucking up every thing that they say knowing if I differ with them I am not in conformance and thus not a part of the team.
Back to the real interesting part of radio, SWR, tuners, how far apart should my antennas be,can I make a G5RV antenna with wet string and away from antennas that are just a joke and back to reality and total conformity.
I expect to obtain more friends now and continue with my happy life.
Your friend
Art

2210. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 14:00:34 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <8uaaivsokjem3dsmq5cjt4jk0fcp69h0de@4ax.com>
Source record: 111654

On Mon, 28 Jul 2003 02:47:19 GMT, Dennis Kaylor
<k4oxg@tampabay.rr.com> wrote:

>hey there
>i am planning on a similar antenna here is the website for it
>http://www.bloomington.in.us/~wh2t/invertedl.html
>
>according the the person who did this website if you feed it at the
>ground you can feed it with 50 ohm coax
>good luck and let me know how it turns out

This was an easy experiment...tried it and couldn't load the antenna
from the shack. Put an MFJ analyzer on it, and the impedance was all
over the place. I got the sense that while my trasnmatch might make my
transceiver happy, there was very little RF radiation going on. I've
seen the article you mention...in my case, my INV-L dimensions were
different, I am trying to operate multiband, plus 120' of buried coax
to the shack had us comparing apples to oranges.
Thanks for your comments...stay tuned!
73
Dan (K0DAN)

2211. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 14:01:44 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <r4baiv0023c8qlhgkc0p3bhrjpohgn1okp@4ax.com>
Source record: 111655

On Mon, 28 Jul 2003 13:53:51 +0100, "froggers"
<not.froggers@nospam.ntlworld.com> wrote:

>Put an SGC at the base and feed it with 12 volts and RF via Co-ax.
>
>Nick
>

Yes I have considered this. However my original post says that I wish
to be able to run legal limit. No such SGC matching network.
73
Dan (K0DAN)

2212. FS: HY-Gain 20 Meter 4 Element Yagi Model 204BA

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 14:05:26 UTC
From: Mel <k2at@comcast.net>
Message-ID: <m_OdnRUE_v46sLiiU-KYvg@comcast.com>
Source record: 111656

Have for sale a Hy-gain 20 Meter 4 Element Yagi Model 204BA in excellent shape with all new stainless steel hardware. The Yagi is down disassembled and ready to go. Asking $250, new the antenna is $540. It is in perfect shape and the SWR is outstanding all across the band. Went to a log periodic and getting rid of my monobanders. Can ship if the buyer is willing to pay shipping charges. Live in Central New Jersey.

2213. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 14:21:36 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <m6baivgtdd6d5p1qja07c69m52khmlm3v6@4ax.com>
Source record: 111657

Ian, thank your for your comprehensive answer. See comments inserted
below!
73
Dan (K0DAN)

On Mon, 28 Jul 2003 08:40:56 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>nbr wrote:
>>On Sun, 27 Jul 2003 19:50:04 -0500, W5DXP <Cecil.A.Moore@ieee.org>
>>wrote:
>>
>>>nbr wrote:
>>>> 1) How to feed the antenna and be able to run legal limit, all bands?
>>>
>>>Put your matching network at the base of the antenna. Feed your matching
>>>network with coax.
>>
>>Thanks for your reply to my message, but this is not feasible. The
>>antenna is 120' from the shack, unblanaced transmatch in the shack.
>>Looking for matching network at the base of the antenna (or apex,
>>maybe), perhaps balun (???), but needs to be broadband so antenna can
>>operate multiband.
>
>Cecil's right - it can't be done without a matching network at the base,
>because the feedpoint impedance varies too much between bands.
>
>Your antenna is about a twice-size version of mine. I have a 35ft
>vertical, with a 35ft horizontal section followed by a "switch" that can
>connect another 65ft (all dimensions approximate). It's fed through
>matching networks at the bottom of the vertical, against a large number
>of radials.

The configuration is up to 72' of wire suspended from a cross-arm off
the top of the tower, then thru a pulley out horizontally to a tree.
The length exists because of height of tower and distance to tree. Of
course I can shorten the wire, but I always start out with "more is
better".
>
>The extra length of horizontal is only used for Top Band
>(quarter-wavelength, low Z, needs those radials) and for 80m short-skip
>(half-wavelength, mostly horizontal, voltage fed so doesn't use the
>radials much).
>With the "switch" open, it's simply a 35ft vertical, 35ft horizontal
>inverted-L.

>Top Band: 1/8-wave, inefficient but long enough to be usable for easy
>QSOs.
>80m: bent quarter-wave, surprisingly effective for DX, but low-Z feed
>and needs those radials.
>40m: voltage-fed half-wave, half vertical and half horizontal - from the
>UK it's good for mixed European/DX working, but obviously receives the
>European signals even when you don't want them. High-Z feed.

Your antenna sounds great. In my case I am limited on available
control lines (to power switching relays) and I want to keep this as
simple as possible (lots of ice and wind here, not to mention Murphy's
Law).
>
>Higher bands: too long - wastes power in lots of little lobes pointing
>in useless directions. Gets worse and worse as the frequency goes up,
>and even a simple dipole is better. Mostly high-Z feed.

Good point. While I would like to be able to operate all bands, the
primary targets are 160, 80, and 40 meters. I do have an LPD for >14
MHz so the need to operate above 7Mhz is pretty minor. Guess I should
focus my energies at 1.8-7.3 Mhz.
>
>As Cecil says, there's no choice but to feed it at the base through
>matching networks on most bands. Trying to feed it from the shack end
>through the long run of coax is a non-starter, except on the bands where
>it's a low-Z feed. On all the other bands the SWR is too high and the
>losses in the coax are crippling.

Yes I found this out. Someone recommended direct feed (ala WH2T) but
the results were terrible.
>
>For many years I used a conventional T-match ATU out there in a
>waterproof box. Band-changing was possible, but a chore. Then I tried
>custom switchable networks, but that became too complex. At present I'm
>using a military auto-ATU that is 1kW rated and works like a dream.

This would be a great solution (despite the cost). I've contacted
several of the mil surplus distributers in the US and Canada, and
nobody seems to have (or know about) an ATU (manual or auto) which can
handle full legal limit. I am not familiar with the mil/commercial
matching networks....where to research?
>
>I would certainly recommend the 35+35ft along inverted-L with an
>auto-ATU for any small backyard. The extra horizontal length is fine if
>you can get it - and the advantage of using the auto-ATU is that it can
>be *any* practicable length; you don't have to worry about matching any
>more. The only problem is that amateur auto-ATUs are limited to medium
>power.

Exactly. We used an ICOM AH2 (forerunner of current AH3/AH4) during
Field Day, running 100W, and it worked like a champ. Tune up in < 1
second, the rig was always happy, and so were the operators. This was

using the half-square, which is the INV-L I've been discussing, plus another 40' vertical leg added, making an "inverted-U" shape. Field Day conditions were terrible (QRM/QRN/poor propo) but the 1/2-square did reasonably well on 20M/40M. I would do the same arrangement in a heartbeat if I could find a device which handles 1.5KW.
>
>Your system is twice as big as mine, so you can shift all the above
>comments down one band. It should go like a rocket on Top Band, but even
>on 40m it's getting over-long. If you have other antennas for the higher
>bands, think of the inverted-L only as your "low-band special" - then
>two or three remotely switched, pre-tuned matching networks will be all
>you need.

OK, so if I use 65' vertical with 100+ feet horizontal, I have a1/2 wave @ 40M vertical with a big inductor on top (the horizontal). That inductor helps the antenna greatly at 80 and 160M, but is a handicap at 7 Mhz? (Forget freqs >7 Mhz)
>
>In your situation I would also consider a remote switch at the top of
>the vertical, to disconnect the horizontal part completely. You'll then
>have a very effective DX antenna for 40m. Take a look at N6RK's site,
>which has some information about switching out the upper sections of
>antennas for the bands where they are "over-tall".

Thanks for the reference, I will check out the site. However, I again fear this is getting too complex and will be too difficult to keep in the air during our inclement weather. FWIW I am also considering a vertical 1/2 wave dipole for 40 meters (hung off the other side of the tower), so maybe I should look at this INV-L as my 160/80M wire, and the vertical dipole as my 40M skyhook.

Again, thanks for your comments!
73
Dan (K0DAN)

2214. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 14:25:59 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <occaivouorj2aimsctulr840bu5igp4l4m@4ax.com>
Source record: 111658

On Sun, 27 Jul 2003 19:19:26 -0500, nbr <nobodyreally@hotmail.com>
wrote:

>I've put up an inverted-L, which consists of approx. 135' horizontal
>leg, and approx. 70' vertical leg. I can shorten the overall length of
>the antenna, but cannot lengthen it. There are about 4 ground rods
>within about 10' of the base ofthe vertical element, plus about 25
>square feet of chickenn wire to serve as a ground plane. I can feed
>the antenna right at ground level, or can arrange to feed it up to
>6-10' above ground. There is about 120' of buried coax to the shack,
>which must feed this antenna. I'd like to use this inverted-L on
>160-10M (will settle for 80-10M).
>1) How to feed the antenna and be able to run legal limit, all bands?
>Current or voltage balun? Won't a balun disspiate power and decrease
>efficiency? WIll a balun at ground level increase ground losses?
>2) How is the inverted-L said to be a vertically polarized antenna,
>when a major portion of its radiating element is horizontal?
>3) For Field Day we added another vertical leg to this antenna to make
>it into a half-square, and had decent results on 40M/20M. How is the
>half-square described as "two verticals in phase", when again, there
>is a major part of the antenna (the so-called "phasing element") which
>is horizontal?
>Thanks and 73
>Dan (K0DAN)
>NOSPAM-dt0124@arrl.org

Thanks for the recent comments on my previous post. They have been
interesting and informative.

The "antenna voodoo" is still bothering me about the theory of some of
these antennas (e.g. inverted-L, half-square, etc.). I understand that
the horizontal leg of the "L" is considered an "inductor at the top of
the vertical" element, but why not the reverse? Why is this not a
"bent horizontal" with segments which radiate both in the horizontal
and vertical planes? Why is the horizontal sengment of a 1/2-square
considered a "phasing line" and not a radiator?

73
Dan (K0DAN)

2215. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 14:31:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <onGdnXecCP8irriiXTWJhw@comcast.com>
Source record: 111659

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:TniOWXE6bMJ$EAdy@ifwtech.co.uk...
> The original explanation came from the classic 1959 QST article by
> Bruene (of the Collins company, who knows how his own bridge works) and
> is backed by Walt Maxwell. I repeated it in my magazine column because
> today's readers still need it... perhaps now more than ever!

You can get the original article from the ARRL web site. File name is
http://www.arrl.org/tis/info/pdf/5904024.pdf . You might need to be an ARRL
member to access this.

Tam/WB2TT

2216. Re: Design needed for VHF anteena. ~122.00 mhz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 15:29:35 UTC
From: richardharrison@webtv.net
Message-ID: <24927-3F25415F-94@storefull-2314.public.lawson.webtv.net>
Source record: 111664

Joe wrote,
"---the stock rubber ducky sucks."

A wire 1/2-wave dipole should be about 3 ft, 10 in long. Feed it across a middle insulator with coax. It should be placed about 2 ft below and in line with the wing to get a small reflection from the wing and the best signal fore and aft.

Don`t worry with a balun. Stick with coax alone. Save weight and enjoy any radiation from the feedline.

Best regards, Richard Harrison, KB5WZI

2217. Re: 1/2-square questions (was: INVERTED-L QUESTIONS)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:06:13 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <97iaivg0u6s98p58na76oud3idj2nfdhbq@4ax.com>
Source record: 111665

On Mon, 28 Jul 2003 09:57:42 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>nbr wrote:
>> Why is the horizontal sengment of a 1/2-square
>> considered a "phasing line" and not a radiator?
>
>The center of the "phasing line" on a half-square is a
>maximum voltage point but there is nothing to keep that
>horizontal wire from radiating. At a TOA of about 65 degrees
>the broadside horizontal radiation and vertical radiation of
>a half-square are about equal at about -9 dBi.

I don't think you're suggesting the horizontal component is cancelled
out??? So in truth the 1/2-square may perform DX best at low angle TOA
broadside to the two verticals, but may also have high angle lobes
from the horizontal wire (effective close-in cloud-warmer)?

2218. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:26:11 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030728122611.27688.00000628@mb-m23.aol.com>
Source record: 111667

>Get a UHF panel mount receptacle, SO-239. Find some brass rod

Can somebody 'splain mo'betta?

What's UHF panel?How do I mount receptacle?
What's SO-239? Can I use WD40?
Where can one find brass rod, where do they grow?
How cheap and how good will it be?

Bada pie rate BUm

2219. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:30:21 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <fOrdMxCd+UJ$EA+V@ifwtech.co.uk>
Source record: 111528

nbr wrote:
>>At present I'm
>>using a military auto-ATU that is 1kW rated and works like a dream.
>
>This would be a great solution (despite the cost). I've contacted
>several of the mil surplus distributers in the US and Canada, and
>nobody seems to have (or know about) an ATU (manual or auto) which can
>handle full legal limit. I am not familiar with the mil/commercial
>matching networks....where to research?

Wish I knew! The one I have is made by Racal, and rated to handle 1kW into a 30-foot vertical at 2MHz. Into less challenging loads it will probably handle much more. Unfortunately the UK supply has dried up. There must surely be equivalent tuners made in the USA, but I've no idea where to look.

>OK, so if I use 65' vertical with 100+ feet horizontal, I have a1/2
>wave @ 40M vertical with a big inductor on top (the horizontal). That
>inductor helps the antenna greatly at 80 and 160M, but is a handicap at
>7 Mhz? (Forget freqs >7 Mhz)

Trust your own eyes: the horizontal part looks like more antenna wire... and that's exactly what it is! The horizontal part will always radiate in an inverted-L configuration, so you'll get mixed vertical and horizontal polarizations.

On its own, the 65ft vertical would give you good DX performance with an overhead null on both 80 and 40, but it would be a poor antenna for short-skip. The horizontal part will fill that overhead null and provide some short-skip performance as well. Which of those features is good or bad depends on what you want the antenna to do. That's why a relay at the top of the vertical part would be a really nice addition.

On 160m you have something like a 3/8 wave in total, which should be quite a good performer.

The antennas where the horizontal part does *not* radiate significantly are the symmetrical T configurations. That is because the current flows out onto the two arms of the T in opposite directions, so the horizontally polarized radiation very nearly cancels, leaving only the vertical.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2220. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:36:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f253531_2@corp-news.newsgroups.com>
Source record: 111660

nbr wrote:
> On Sun, 27 Jul 2003 19:50:04 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> wrote:
>
>
>>nbr wrote:
>>
>>>1) How to feed the antenna and be able to run legal limit, all bands?
>>
>>Put your matching network at the base of the antenna. Feed your matching
>>network with coax.
>
> Thanks for your reply to my message, but this is not feasible. The
> antenna is 120' from the shack, unblanaced transmatch in the shack.
> Looking for matching network at the base of the antenna ...

This is what I suggested but it will have to be switchable or tunable
for each band, maybe a stub for each band. There is no single fixed
network or balun that will do the job. The impedance on some bands
will be sky high and cause sky high SWRs on your coax.

> (or apex,
> maybe), perhaps balun (???), but needs to be broadband so antenna can
> operate multiband.
--
73, Cecil, W5DXP

2221. Re: 4NEC2 features wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:37:37 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030728123737.27688.00000629@mb-m23.aol.com>
Source record: 111668

>>Yuri
> Arie

>> I believe NEC4 can accomodate
>> that and could serve as an example how to do it.
>
>Yes. One of my great wishes is nec-4 (sources) becoming available for
>none-american citizens. I am still waiting for this some four or five
>years but I am afraid I will have to wait at least another 4 years.
>

Same here, more problem of time, trying to master other programs and get good grip on them, before getting too serious with NEC4.

>> Also different material for elements within antenna, like copper
>(insulated)
>> wire quad and aluminum Yagi elements.
>
>4nec2 supports most of the nec-2 cards, so it is no problem to specify
>different materials for any part of the antenna oR for the structure
>as a whole. When using the CAD based geometry editor a pre-defined
>list of common materials is available.
>

I should try that. As I see all those things are important to be included for more precise cxalculations and especially with optimizers. Otherwise some short cuts have to be used to approximate the conditions.

Just keep it in your to do file, maybe some day...

Tnx 73 Yuri

2222. Re: Which NEC antenna design software?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:42:50 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030728124250.27688.00000630@mb-m23.aol.com>
Source record: 111519

>4NEC2:

>Yuri, what a strange coincedence. This because I exactly had the same
>thoughts.
>
>I must admit however that I am not such a (theoretical) antenne
>expert, so I think it's a bit too much effort to create the equations
>for terrain analysis myself. That's why I already took a look at both
>the K6STI program and Dean Straw's latest HFTA program, (both created
>to do terrain analysis) and to investigate how much effort it would
>take to interface with one of them.
>When looking at these programs I realized however that both of them
>are limited to horizontal polarized ((stacks of) Yagi) antennas.
>

I understand that Dan is coming up nd testing new version of his terrain program. I have not seen it yet.
Fine tuning the vertical arrays can use contribution from the terrain (like being on the shore with sand dunes behind), This would greatly enhance the modeling capabilities.

Keep it in the forefront :-)

73 Yuri

2223. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:44:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2536e1$1_2@corp-news.newsgroups.com>
Source record: 111661

nbr wrote:
> Yes I have considered this. However my original post says that I wish
> to be able to run legal limit. No such SGC matching network.

You can probably switch stubs in and out to accomplish the loading.
Start with one band, get it right, and go on to the next.
--
73, Cecil, W5DXP

2224. Re: 1/2-square questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:49:34 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <nikaivsv8h8jk5nloo7l990vk6titqggjb@4ax.com>
Source record: 111520

On Mon, 28 Jul 2003 11:21:12 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>nbr wrote:
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>The center of the "phasing line" on a half-square is a
>>>maximum voltage point but there is nothing to keep that
>>>horizontal wire from radiating. At a TOA of about 65 degrees
>>>the broadside horizontal radiation and vertical radiation of
>>>a half-square are about equal at about -9 dBi.
>>
>> I don't think you're suggesting the horizontal component is cancelled
>> out??? So in truth the 1/2-square may perform DX best at low angle TOA
>> broadside to the two verticals, but may also have high angle lobes
>> from the horizontal wire (effective close-in cloud-warmer)?
>
>Yes, above a TOA of about 65 degrees, the radiation is primarily
>horizontally polarized and there is enough to make some NVIS
>contacts on the lower bands. You get an interesting pattern if
>you feed it 1/3 of the way down the horizontal wire. You get some
>fairly good high angle radiation that can help fill in the nulls
>in the half-square patternm i,e, the coverage doughnut gets bigger.

Interesting, I think this could be what happened during our Field Day
ops. We worked virtually NO DX, but did decent with this antenna to
most parts of the USA. The design of the 1/2-square was "wrong" by
conventional design notes, ie the verticals were too long (approx 45'
and 65' each) and were separated by WAY too much horizontal (about
130'). If we were radiating low vertical TOA, the propagation wasn't
supporting it (or the noise level was too high). However the decent
stateside performance suggests we were warming the clouds. Our QTH was
mid-USA (Missouri) and broadside to the horizontal wire was E/W; we
worked about 40 states.
73
Dan (K0DAN)

2225. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:53:42 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030728125342.27688.00000631@mb-m23.aol.com>
Source record: 111521

>
> Too bad both Saddam and Bin Laden were both monsters created by
>the CIA, that is, the USA government.

As Bill Crosby said: I brought you into this world, I can take you out.
Maybe one lesson Bin Saddams can learn: "Don't push it!"

Bada Bang Bang

2226. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:55:13 UTC
From: Greg Milligan <greg@--NO_SPAM--g1cpu.net>
Message-ID: <3f255574@dnews0.news.legend.net.uk>
Source record: 111522

W5DXP wrote:

> Greg Milligan wrote:
>> Im slightly puzzled by your last statement. Why will twisting it have any
>> affect?
>
> Twisting tends to expose both transmission wires to the same environment.
> For instance, if you ran one wire 0.5" away from sheet metal and the other
> wire 1.5" away from the same metal, you would unbalance your currents
> because of the metal's effect on the closest wire.
> --
> 73, Cecil, W5DXP

Thnaks Dave and Cecil for your explanations, it now seems to make sense to me.

Cheers

Greg G1CPU

2227. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 16:57:42 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f253a0c$1_2@corp-news.newsgroups.com>
Source record: 111662

nbr wrote:
> Why is the horizontal sengment of a 1/2-square
> considered a "phasing line" and not a radiator?

The center of the "phasing line" on a half-square is a
maximum voltage point but there is nothing to keep that
horizontal wire from radiating. At a TOA of about 65 degrees
the broadside horizontal radiation and vertical radiation of
a half-square are about equal at about -9 dBi.
--
73, Cecil, W5DXP

2228. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 17:01:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f253af4_2@corp-news.newsgroups.com>
Source record: 111663

Greg Milligan wrote:
> Im slightly puzzled by your last statement. Why will twisting it have any
> affect?

Twisting tends to expose both transmission wires to the same environment.
For instance, if you ran one wire 0.5" away from sheet metal and the other
wire 1.5" away from the same metal, you would unbalance your currents
because of the metal's effect on the closest wire.
--
73, Cecil, W5DXP

2229. Re: Staples and twin lead

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 17:18:14 UTC
From: David <pdr14@comcast.net>
Message-ID: <kXidnSivKNWjxriiXTWJhQ@comcast.com>
Source record: 111523

The staples won't have any noticeable effect at HF frequencies but I strongly agree with all of those who recommend spacing the feedline away from any surface with standoffs.

David KG2LI

2230. WTD: GPS Active patch antenna 5v

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 17:58:21 UTC
From: "Gareth (G1LVN)" <gareth@mycallsign.freeserve.co.uk>
Message-ID: <bg3oho$r8a$1@news8.svr.pol.co.uk>
Source record: 111524
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

Looking for a GPS magnetic mount antenna with say 10' of lead (SMB connector).
What would be really nice if anyone knows where I can get one with an additional
fitting to take a (second) vhf type antenna. I've found fixed dual antennas of
this type on the web use for vehicle tracking but ideally looking for a mag
mount, and surplus not new.

- for an APRS project.

substitude mycallsign for g1lvn to reply by email.

--
73 de G1LVN
Gateway details at: www.g1lvn.org.uk
(change "mycallsign" to reply by email)
send spam to abuse@theplanet.net

2231. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 18:09:09 UTC
From: richardharrison@webtv.net
Message-ID: <395-3F2566C5-354@storefull-2316.public.lawson.webtv.net>
Source record: 111525

Ian, G3SEK wrote:
"Therefore the Bird does not directly sense RF power."

Problem with that statement is that to the uninitiated it makes the indication suspect. A voltmeter doesn`t measure volts directly. The ordinary voltmeter measures current scaled by a multiplier resistor. Wish you and Walt would knock off the nonsense.

A Bird senses all it has to sense and legitimately converts it to a reasonable indication of watts. The Bird can do so thanks to Ohm`s law, and that`s that.

Best regards, Richard Harrison, KB5WZI

2232. Re: 1/2-square questions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 18:21:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f254da2_2@corp-news.newsgroups.com>
Source record: 111666

nbr wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>The center of the "phasing line" on a half-square is a
>>maximum voltage point but there is nothing to keep that
>>horizontal wire from radiating. At a TOA of about 65 degrees
>>the broadside horizontal radiation and vertical radiation of
>>a half-square are about equal at about -9 dBi.
>
> I don't think you're suggesting the horizontal component is cancelled
> out??? So in truth the 1/2-square may perform DX best at low angle TOA
> broadside to the two verticals, but may also have high angle lobes
> from the horizontal wire (effective close-in cloud-warmer)?

Yes, above a TOA of about 65 degrees, the radiation is primarily
horizontally polarized and there is enough to make some NVIS
contacts on the lower bands. You get an interesting pattern if
you feed it 1/3 of the way down the horizontal wire. You get some
fairly good high angle radiation that can help fill in the nulls
in the half-square patternm i,e, the coverage doughnut gets bigger.
--
73, Cecil, W5DXP

2233. Re: WTD: GPS Active patch antenna 5v

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 18:58:06 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <mgsaivgojpmptprpgeq6n0pd1khbrobrj0@4ax.com>
Source record: 111526

Where did you find the fixed dual antennas?

Dick - W6CCD

On Mon, 28 Jul 2003 17:58:21 -0000, "Gareth \(G1LVN\)"
<gareth@mycallsign.freeserve.co.uk> wrote:

>Looking for a GPS magnetic mount antenna with say 10' of lead (SMB connector).
>What would be really nice if anyone knows where I can get one with an additional
>fitting to take a (second) vhf type antenna. I've found fixed dual antennas of
>this type on the web use for vehicle tracking but ideally looking for a mag
>mount, and surplus not new.
>
>- for an APRS project.
>
>substitude mycallsign for g1lvn to reply by email.

2234. Bob Hope

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:20:55 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307281120.114cfa94@posting.google.com>
Source record: 111529

Isn't it really neat when somebody from the
otherside of the river makes good.
Farewell
Art

2235. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:35:47 UTC
From: richardharrison@webtv.net
Message-ID: <24926-3F257B13-327@storefull-2314.public.lawson.webtv.net>
Source record: 111534

Gary, N4AST wrote:
"So 1000 watts is 31.6% of full scale. I thought all Ham wattmeters did that. Of course it is highly dependent on the Z the wattmeter sees."

The Bird has more than one scale on the same meter face. It`s possible to scale them any way the designer wants. With the complications of special circuits, the scale could be made linear. I for one wouldn`t want it.

31.6 is the sq. rt. of 1000, approximately. Power is proportional to the sq.of volts or amps. So, if you want to represent watts as a function of transmission line volts and, or transmission line amps, you can print the scale of a linear meter so that it advances as the sq. rt. of the current. That is, current increases to 141.4% of its previous value, and the watts indication doubles. That`s because 1.414X the volts multiplied by 1.414X the amps equals 2X the watts.

In the Bird, the impedance is always supposed to be 50 ohms. That Zo enforces a lock on the volts to amps ratio the Bird must work wiith. So, all you need to know is the volts or amps in the incident wave and you can calculate its power. Same for the reflected wave. The Bird very effectively separates the incident wave from the reflected wave by setting their samples exactly equal. In the forward wave the incident volts and amps are exactly in-phase. In the reflected wave, they are exactly out-of-phase. So, when set to measure power in the forward direction, the two equal samples, voltage and current, add. The equal reflected wave samples exactly cancel. Reverse the arrow on the Bird. That reverses the polarity of the current sample. Now the forward (incident) wave samples cancel, and the reverse (reflected) wave samples add.

Zo only permits wave propagation in which volts and amps are exactly in-phase or 180-degrees out-of-phase. The arithmetic is simple and Zo is the friend of the Bird wattmeter.

Best regards, Richard Harrison, KB5WZI

2236. Re: GPS Active patch antenna 5v

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:36:53 UTC
From: "Gareth (G1LVN)" <gareth@mycallsign.freeserve.co.uk>
Message-ID: <bg3uagvtu1@news8.svr.pol.co.uk>
Source record: 111531
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

"Gareth (G1LVN)" <gareth@mycallsign.freeserve.co.uk> wrote in message
news:bg3oho$r8a$1@news8.svr.pol.co.uk...
> Looking for a GPS magnetic mount antenna with say 10' of lead (SMB connector).
> What would be really nice if anyone knows where I can get one with an
additional
> fitting to take a (second) vhf type antenna. I've found fixed dual antennas of
> this type on the web use for vehicle tracking but ideally looking for a mag
> mount, and surplus not new.
>
> - for an APRS project.
>
> .
>

to all the people who emailed me (including those with duff return emails???)
wanting to know where the surface mount VHF/GPS antennas are, go here:
http://www.mobilemark.com/GPS_Tracking_antennas.html (SM-150/1575)

I am still looking for a similar dual band antenna that is Magnetic mounted, if
anyone can help.

substitude mycallsign for g1lvn to reply by email

--
73 de G1LVN
Gateway details at: www.g1lvn.org.uk
(change "mycallsign" to reply by email)
send spam to abuse@theplanet.net

2237. Re: Design needed for VHF anteena. ~122.00 mhz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:37:57 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F257B95.74E038B1@cwis.net>
Source record: 111530

Joe,
You have several options depending on the construction
of your aircraft and how much 'trouble' you want to go to.
A simple 1/4 wave element mounted to a metal structural
member of the aircraft should beat the rubber-duck to
within an inch of it's life (only added weight would be the
antenna element and feed line, no 'plate').
The 'best' place to mount an antenna on an aircraft is
also the least convenient, usually. Guess that depends on
where the motor is (motors = RF noise makers). The center
of the aircraft is probably the 'best' mounting place since
it would give you a more or less omnidirectional radiation
pattern. Directional radiation patterns are NOT desirable
on an aircraft (com or nav)!
Good luck, and let us know what happens...
'Doc

2238. Re: 4NEC2 features wanted

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:42:22 UTC
From: 4nec2@gmx.net
Message-ID: <ee90361b.0307281142.24c2f14d@posting.google.com>
Source record: 111532

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307250729.6c0c8443@posting.google.com>...

> Could you tell me if you have the ability to make an impedance value
> a variable which could be helpfull when designing loops?

I do not exactly understand what you mean. When refering to the
antenna input imedance value(s). These are output values and depend on
the structure which is computed/optimized.
When refering to lumped loads, wire- or other distributed loading,
these can be configured as variables to optimize.

> Also, how many variables do you have available

Whit the latest version (5.3.3) this number is not limited. In
'real-life' however when using a very larege amount of variables to
optimization process will ttake a long time....

> together with max number of pulses used ?

Mininec is using pulses. Nec-2 is uses segments. However they have
almost the same meaning. For none windows-XP systems you can use a max
of 11.000 segments when using windows-XP, you are by default limited
to 5000 segments. However I can deliver exe's with more segments on
request for free.

Arie.

2239. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:44:27 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F257D1B.F031486E@cwis.net>
Source record: 111533

Greg,
Aside from the electrical affects of twisting the
twin lead you also have the benefit of making it less
affected by wind. It 'flops' around less than if it
wasn't twisted. Ever noticed how the 'tape' advertising
thingys are really affected by wind if they are ~not~
twisted?
'Doc

2240. Re: Bob Hope

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:50:57 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <B8fVa.1997$It4.1306@rwcrnsc51.ops.asp.att.net>
Source record: 111535

THANKS FOR THE MEMORIES

Art Unwin KB9MZ wrote:

> Isn't it really neat when somebody from the
> otherside of the river makes good.
> Farewell
> Art

2241. test

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:56:18 UTC
From: Marvin Rosen <puns@att.net>
Message-ID: <CdfVa.77994$0v4.5162272@bgtnsc04-news.ops.worldnet.att.net>
Source record: 111536

[No readable article body recovered]

2242. Re: Bob Hope

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:56:51 UTC
From: "Alan P. Biddle" <APBIDDLE@ATT.NET>
Message-ID: <3rvaivocvut7bil5u6lo1bhm82bvgi9vqk@4ax.com>
Source record: 111537

I have this whimsical picture in my mind of Bob and Bing doing the patty cake routine on St. Peter, and then soft shoeing through the Pearly Gates.

Thanks for the memories!

Alan

2243. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 19:58:27 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <oiUQ3SCjBYJ$EAbT@ifwtech.co.uk>
Source record: 111538

Richard Harrison wrote:
>Ian, G3SEK wrote:
>"Therefore the Bird does not directly sense RF power."
>
>Problem with that statement is that to the uninitiated it makes the
>indication suspect. A voltmeter doesn`t measure volts directly. The
>ordinary voltmeter measures current scaled by a multiplier resistor.
>Wish you and Walt would knock off the nonsense.
>
I wish you would credit "the uninitiated" (as you disdainfully call
them) with the intelligence to understand things when they're explained
to them.

>A Bird senses all it has to sense and legitimately converts it to a
>reasonable indication of watts. The Bird can do so thanks to Ohm`s law,
>and that`s that.

No, that's just a half-truth. "The uninitiated" deserve better.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2244. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 20:32:40 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307281232.6d0c90b8@posting.google.com>
Source record: 111539

Roy Lewallen <w7el@eznec.com> wrote in message news:<vi7v8nipog4ub9@corp.supernews.com>...
> I've been out of town since this was posted. There are a couple of
> details I'd like to check in some texts before responding, so I'll
> postpone my response until after I return home. In the meantime, I see
> that Ian and Tom have made contributions, both to their usual high
> standards. Both these gentlemen know what they're talking about, and I'm
> glad to have them help out.
>
> Roy Lewallen, W7EL
>

I look forward to your response Roy.

Slick

2245. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 20:33:59 UTC
From: richardharrison@webtv.net
Message-ID: <24926-3F2588B7-334@storefull-2314.public.lawson.webtv.net>
Source record: 111540

Cecil, W5DXP wrote:
"Are there any locations up and down the line and/or any value of load that will cause the Bird wattmeter not to read 100 watts forward power?"

Cecil has eliminated a re-reflection with his circulator at the generator.

Therefore, the Bird, being insensitive to power traveling in the opposite direction to that sensed, should read 100 watts forward power at any location in the line.

There must be enough transmission line to enforce Zo. The width of the Bird case is likely insufficient line length.

Another caveat is that the Bird elements were designed to balance using a 50-ohm load on the line, but were intended and have proved workable on mismatched lines.

Another frequent question is, "How about a large reactance termination?" Not to worry, again, given sufficient line. Terman and other authorities report that this reactance only displaces SWR patterns on a line. That is logical considering lengths of transmission lines as reactances themselves. So as Cecil would likely be quick to point out, adding a reactance is tantamount to adding a length of transmission line, and vice versa.

SWR should have little effect on power determination with the Bird wattmeter which is performed as : Forward power minus reflected power, period! With the circulator, disposition of all power is clear. The forward power must contain all load and reflected power which only makes one round-trip.

Best regards, Richard Harrison, KB5WZI

2246. Re: Bob Hope

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 20:49:27 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bg4286$b7p$1@slb4.atl.mindspring.net>
Source record: 111541

"Alan P. Biddle" <APBIDDLE@ATT.NET> wrote in message
news:3rvaivocvut7bil5u6lo1bhm82bvgi9vqk@4ax.com...
> I have this whimsical picture in my mind of Bob and Bing doing the
> patty cake routine on St. Peter, and then soft shoeing through the
> Pearly Gates.
>
> Thanks for the memories!
>
> Alan
>
I saw Bob and company at Tan Son Nhut Airbase, Republic of Vietnam back in the 60s. I didn't get close because I was on duty. But was near enough to hear the roars of joy. What a site. Thousands of GIs wearing everything from class A uniforms to dirty combat boots standing and cheering this American HERO.

This morning I shed a tear. Goodby Bob....yes indeed...thanks for the memories (the only good ones I have of that time).

Dan/W4NTI

2247. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 20:52:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f258e41_2@corp.newsgroups.com>
Source record: 111542

Richard Harrison wrote:
> SWR should have little effect on power determination with the Bird
> wattmeter which is performed as : Forward power minus reflected power,
> period! With the circulator, disposition of all power is clear. The
> forward power must contain all load and reflected power which only makes
> one round-trip.

Yep, and as I said, (baring nonlinearities) the sum of the voltage proportional
to the total voltage and the voltage proportional to the total current will
be constant as long as the 100W from the signal generator remains constant,
no matter what the load or SWR or where the Bird wattmeter is located on
a lossless line. It's easy to prove mathematically.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2248. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 21:06:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f257440$1_2@corp-news.newsgroups.com>
Source record: 111527

Richard Harrison wrote:
> A Bird senses all it has to sense and legitimately converts it to a
> reasonable indication of watts. The Bird can do so thanks to Ohm`s law,
> and that`s that.

Let's approach it a little differently. Assume a signal generator equipped with a circulator load driving a lossless 50 ohm feedline. The load is variable.

100W SGCL----50 ohm lossless coax--------variable load

Are there any locations up and down the line and/or any value of load that will cause the Bird wattmeter not to read 100 watts forward power? In the above example, I can show that the two voltages that get added inside the Bird always yield a constant value of voltage, i.e. and therefore a constant power indication.
--
73, Cecil, W5DXP

2249. Re: WTD: GPS Active patch antenna 5v

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 21:07:35 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <pu3biv8q1g2ek3paaoorfeo9bqjmu43isj@4ax.com>
Source record: 111543
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

On Mon, 28 Jul 2003 17:58:21 -0000, "Gareth \(G1LVN\)"
<gareth@mycallsign.freeserve.co.uk> wrote:

>Looking for a GPS magnetic mount antenna with say 10' of lead (SMB connector).
>What would be really nice if anyone knows where I can get one with an additional
>fitting to take a (second) vhf type antenna. I've found fixed dual antennas of
>this type on the web use for vehicle tracking but ideally looking for a mag
>mount, and surplus not new.
>
>- for an APRS project.
>
>substitude mycallsign for g1lvn to reply by email.

These guys make several multipurpose antennas which incorporate VHF or
UHF along with GPS. Not sure it'll meet your application, or is the
most convenient for the UK, but it's worth a try! GL & 73
dan (k0dan)

http://www.antenex.com/

2250. Re: Bob Hope

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 21:28:18 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030728172818.04959.00000526@mb-m26.aol.com>
Source record: 111544

>
>This morning I shed a tear. Goodby Bob....yes indeed...thanks for the
>memories (the only good ones I have of that time).
>
>Dan/W4NTI
>
>

When anyone is in Washington DC, stop at the Basilica of Immaculate Conception and say a prayer for his soul at the beautiful altar/wing that Hopes have graciously funded. What a performer, artist, humanist and dedicated person. RIP Bob, we will be laughing at your stuff for a long time.

Yuri, K3BU

2251. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 21:43:09 UTC
From: jgboyles@aol.com
Message-ID: <20030728174309.15388.00000610@mb-m13.aol.com>
Source record: 111545

>31.6 is the sq. rt. of 1000, approximately. Power is proportional to the
>sq.of volts or amps. So, if you want to represent watts as a function of
>transmission line volts and, or transmission line amps, you can print
>the scale of a linear meter so that it advances as the sq. rt. of the
>current. That is, current increases to 141.4% of its previous value, and
>the watts indication doubles. That`s because 1.414X the volts multiplied
>by 1.414X the amps equals 2X the watts.
Richard, That is exactly what I was trying to say, one can measure the
power absorbed by a known resistive load by sampling V or I, rectify, scale and
display on a log scale meter, or is it square law? Whichever one it is, it
ain't linear.

73 Gary N4AST

2252. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 22:47:33 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bg4965$8ni$0@208.206.142.78>
Source record: 111546

Nisse wrote:

>
> PL-259 is hardly useable above 50MHz, and totally worthless above approx. 300MHz
> (why PL-259 is the standard for 144MHz rigs is definitively beyond my
> undersanding- for
> commercial 80MHz LMR, BNC or C is standard, depending on power output).

Maybe that's because your understanding isn't in accordance with the rest of the industry. :-)

I retired 10 years ago and for a decade prior to that I maintained a series of UHF repeaters on 456 Mhz - all of which used SO239/PL259 antenna interfaces, all designed and built at the General Electric factory in Lynchburg, Virginia. Evidently they didn't consider the connectors "useless" at that frequency, and after years of dealing with them, neither do I. There was never a single instance where I saw a single problem with them.

2253. Re: Bob Hope

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 22:50:35 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bg49c1$v0g$1@slb1.atl.mindspring.net>
Source record: 111547

Yuri:

As I am sure Red Skelton will probably say, "God Bless".

Bob Hope is someone all of us should emulate! A "real" person.

Peace,

--
Peter K1PO

"Yuri Blanarovich" <k3bu@aol.comnoSaddam> wrote in message
news:20030728172818.04959.00000526@mb-m26.aol.com...
> >
> >This morning I shed a tear. Goodby Bob....yes indeed...thanks for the
> >memories (the only good ones I have of that time).
> >
> >Dan/W4NTI
> >
> >
>
>
> When anyone is in Washington DC, stop at the Basilica of Immaculate
Conception
> and say a prayer for his soul at the beautiful altar/wing that Hopes have
> graciously funded. What a performer, artist, humanist and dedicated
person.
> RIP Bob, we will be laughing at your stuff for a long time.
>
> Yuri, K3BU

2254. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 22:50:38 UTC
From: jgboyles@aol.com
Message-ID: <20030728185038.04786.00000003@mb-m13.aol.com>
Source record: 111548

>
> Aside from the electrical affects of twisting the
>twin lead you also have the benefit of making it less
>affected by wind. It 'flops' around less than if it
>wasn't twisted

Hi Doc, mine is indoors, as many are, so the wind is not a factor.
73 Gary N4AST

2255. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 22:56:31 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bg49n4vjh1@slb1.atl.mindspring.net>
Source record: 111549

Cec:

What are you talking about ? There are no "circulators" in a Bird!

What?

The Bird merely samples V and I at a single point on the line
and it's internal analog computation circuitry computes power
from those two measurements of voltages. B= V - RI the
computed reflected voltange and A = V + RI
the computed incident voltage, what's the big deal?
--
Peter K1PO
Indialantic By-the-Sea, FL.

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f258e41_2@corp.newsgroups.com...
> Richard Harrison wrote:
> > SWR should have little effect on power determination with the Bird
> > wattmeter which is performed as : Forward power minus reflected power,
> > period! With the circulator, disposition of all power is clear. The
> > forward power must contain all load and reflected power which only makes
> > one round-trip.
>
> Yep, and as I said, (baring nonlinearities) the sum of the voltage
proportional
> to the total voltage and the voltage proportional to the total current
will
> be constant as long as the 100W from the signal generator remains
constant,
> no matter what the load or SWR or where the Bird wattmeter is located on
> a lossless line. It's easy to prove mathematically.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2256. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 23:01:09 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bg49vlaie0@208.206.142.67>
Source record: 111550

CW wrote:

> Another thing that you can be sure of. Rarely does it matter.
> "Nisse" <nisse@manqwr.se> wrote in message
> news:3F1FE3BE.3846DBD5@manqwr.se...
> > (the only thing You can be sure of, it is not 50
> > ohm
> > characteristic impedance)...
> >
> >

Exactly. Close impedance matching is one of the most overrated goals in

radio, in my view and after nearly 50 years of experience.
The exception (there seems to always be one) being in cases where it's
vital to preserve every last milliwatt or fractional microvolt of RF.

Don't believe it? Just replace your RG8 or whatever with 72 ohm RG9
or almost any other other coax, of almost any impedance. Sure, you can
measure the difference at the far end if you work at it hard enough. But
does it really matter? Almost always the answer is a resounding NO!

And "brief" impedance discontinuities even at frequencies 'way up there

seem about as inconsequential under most conditions.
Once I needed to hook up a small dish sattelite TV system, which
operates above 2 GHZ as I recall, to use for a few weeks in temporary
quarters. The only opening available to the outside was a small drain
slot in
an aluminum window frame. So I simply used a foot of small speaker
twinlead to transition through the slot and resumed outside with the
RG6, on to the dish.
(Of course I was very careful to preserve cable polarity since DC
operating voltage for the LNB at the dish travels on the cable).
As far as I could determine, the system was not affected in any way.
Even the
'signal meter' reading on the TV screen was not discernably lower.

2257. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 23:07:43 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bg4abvash0@208.206.142.67>
Source record: 111551

K9SQG wrote:

> Personally, I've had the best luck with a 100-200 watt iron for soldering the
> shell. The iron, assuming it has a heavy tip, has enough heat capacity to do
> the job quickly. With a soldering gun, even a 150 or 200 watt gun, the tip
> just doesn't have enough thermal capacity to do the job as quickly.

Yoiu've got to get the tip VERY HOT before applying it to the connector for it
to work right, then as has been said already, don't stay too long or you'll
melt the inner conductor of the coax, and get to start the job all over again.

2258. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 23:20:19 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307281520.5738e8d0@posting.google.com>
Source record: 111552

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
>
> Mark,
> Put the whole antenna idea aside

Ok.

The thing could not possibly work, my
> activity is a total illusion.

If you say so.

If anything new comes along, which is
> highly unlikely since all is known,do you really believe it would be
> the likes of me to find it?

If you really believe all is known about antennas, I doubt you will
find it. You'll never get anywhere with that restrictive mindset.

A guy who never went to college, can't
> type or spell and has no credability.

I don't think anyone really cares. I'm sure some would wish you would
use a spell checker though...I didn't go to college either. Why are
they not jumping my ass on a daily basis? It's quite simple really. I
don't randomly grasp at straws trying to explain something that I'm
not really sure how it works. This is what you are doing. If I have
this problem, I don't say anything usually.

Just curious....Why on earth is it so important that you convince us
this antenna works, is the cat's ass, or other assorted descriptions?
If it were me, I would have built the damn thing years ago. I would
KNOW if it worked or not. No guesses, grasping, etc needed. Then all I
would have to do is try to explain how it works, which to the average
ham on the street, isn't probably that important. If it works, it
works. That all many care to know.

No Mike

Who's Mike? Is he that guy that sits by the pay phone at the local
stop and rob?
He's there every day nearly. Usually tries to hit me up for money...

I am just an ordinary
> disciple of the gurus on the net
> sucking up every thing that they say knowing if I differ with them I
> am not in conformance and thus not a part of the team.

I differ with this bunch all the time. I guess I'll never be a part of
the team.
Oh well, another day, another $2.31.

> Back to the real interesting part of radio, SWR, tuners, how far apart
> should my antennas be,can I make a G5RV antenna with wet string and
> away from antennas that are just a joke and back to reality and total
> conformity.

Sounds kind of boring....

> I expect to obtain more friends now and continue with my happy life.

Good luck in the contest. MK

2259. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 23:26:21 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <m6cbiv4klr3frmg13pb6di23us43s9usb5@4ax.com>
Source record: 111554

On Mon, 28 Jul 2003 17:30:21 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>
>The antennas where the horizontal part does *not* radiate significantly
>are the symmetrical T configurations. That is because the current flows
>out onto the two arms of the T in opposite directions, so the
>horizontally polarized radiation very nearly cancels, leaving only the
>vertical.

AHA! The classic vertical with tophat...

2260. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-28 23:37:51 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307281537.5ffa6b2a@posting.google.com>
Source record: 111556

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<Emudnag00PojGrmiXTWJkg@comcast.com>...
> A/B comparison between the dipole broadside to Europe, and TA33 with a
> rotator. People who sell trapless beams make the same claim. Remember, this
> is the JR, with small traps, too short a boom, and element lengths that have
> been fudget to get a very nice 50 Ohm impedance with no matching network of
> any kind. (Or there is enough resistance in the traps). Front to back and
> front to side are also very poor.
>
> I got comments from G and DL stations who all preferred the dipole.
> Receiving, the difference in favor of the dipole was huge (several S units)
> on an HA.

Dang....Kind of depressing results...I would have thought the small
beam would still slightly win the race. I use a A4S here when I
actually use a beam. I got it free, so the price was right. It's
fairly decent actually, but I don't consider it a small beam. It's
full sized for all practical purposes. 18 ft boom, and a 32 ft
reflector. It has "nearly" full size performance on 20m. Also good on
10m with it's better spaced reflector than the smaller A3. The A3 is
not bad though. It's about a 27 ft reflector if I remember right. We
have compared the A4 to the A3 at field day. The A3 wasn't too bad
considering it's slightly smaller size. Both the A4 and the A3 use a
spacing design that gives a 50 ohm feedpoint. You only need a 1:1
balun or a choke. I use the coax choke.. MK

2261. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 00:42:12 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bg4ft9$d00$1@slb6.atl.mindspring.net>
Source record: 111557

Cecil:

[snip]
> Actually, there is a simple circulator in a Bird. That's how
> it separates the forward stuff from the reflected stuff.
> --
> 73, Cecil, W5DXP
>[snip]

Nope!

The "thing" that separates the incident voltage wave from the reflected voltage wave
is called a directional coupler [actually a bridge circuit].

A directional coupler is *NOT* a circulator. One can make a directional coupler from
a circulator but not vice versa.

But, one can make a circulator from *three* or more directional couplers arranged in a circle!

I'll post schematic circuits for "electronic" directional couplers and circulators on
alt.binaries.electronics.schematics if you wish.

--
Peter K1PO
Indialantic By-the-Sea, FL.

2262. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 00:51:18 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307281651.6769fd3@posting.google.com>
Source record: 111558

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
> Mark,
> Put the whole antenna idea aside The thing could not possibly work, my
> activity is a total illusion. If anything new comes along, which is
> highly unlikely since all is known,do you really believe it would be
> the likes of me to find it?

Many useful inventions have come from people that on the surface, you would think are surely dumbasses in their fields due to lack of training. I can think of many right off the top of my head. I don't think Bill Lear had too much school and training, but he seemed to do ok as one example. I think he invented the 8 track, along with a few other aviation related patents. "I think anyway"..
Not to mention cobbling together the jet airplane which is quite common at airports these days. So this "poor dumb ole Art" crap is not going to fly far with me. If you feel the antenna would work, I think you should build it. I would ignore everything everyone says. BUT! I wouldn't presume to flog others for their lack of "vision", just because something you don't even use or seemd to have built in real life is not readily accepted as practical. If you think it's a great idea, use it. The end performance will tell the true story.
As an example, note the "EH" guy. Personally, I think he's on a misguided turd hunt, but at least he's got the nads to actually build the crazy looking things. And this eventually lets others compare them to tell the true story. Unfortunately, his antenna seems to be primarily a feedline hanging device. It supports the feedline, which is the "real" antenna and does the bulk of the radiating. I think a pully or other hanging device would be about as efficient overall. :/
MK

2263. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 01:20:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f25affd$1_2@corp-news.newsgroups.com>
Source record: 111553

Peter Brackett wrote:
> Cec:
> What are you talking about ? There are no "circulators" in a Bird!

No, there's a circulator in the source to keep the forward power
from changing with SWR.

> The Bird merely samples V and I at a single point on the line
> and it's internal analog computation circuitry computes power
> from those two measurements of voltages. B= V - RI the
> computed reflected voltange and A = V + RI
> the computed incident voltage, what's the big deal?

There's no big deal at all, Peter. But did you realize that the
the voltage proportional to the total voltage vectorially added
to the voltage proportional to the total current is a constant
as long as constant forward power and constant reflected power
is maintained no matter what phase exists between the forward
and reflected waves? Mull that one over for a bit.
--
73, Cecil, W5DXP

2264. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 01:27:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ltibiv0cqc6g8i3r3n6797gi8j37mo8mf1@4ax.com>
Source record: 111559

On 28 Jul 2003 17:51:18 -0700, nm5k@wt.net (Mark Keith) wrote:

> If you think it's a great
>idea, use it. The end performance will tell the true story.
>As an example, note the "EH" guy. Personally, I think he's on a
>misguided turd hunt, but at least he's got the nads to actually build
>the crazy looking things.

Hi Mark,

This kinda sounds like the plot to "Parsival," the world's longest
Opera by Wagner.

I would expand further, but me and my buddies are out the door to
escape the heat at the mall's cineplex to see Tï¿½.
"I'll be back...."

73's
Richard Clark, KB7QHC

2265. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 01:36:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f25b3a9_2@corp-news.newsgroups.com>
Source record: 111555

Peter Brackett wrote:
> What are you talking about ? There are no "circulators" in a Bird!

Actually, there is a simple circulator in a Bird. That's how
it separates the forward stuff from the reflected stuff.
--
73, Cecil, W5DXP

2266. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 01:39:56 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <NWadnVkencTvTbiiXTWJhA@comcast.com>
Source record: 111560

Mark,

I bought the Hygain TH3Mk4, which is about the size of the A3. It is a WHOLE lot better than the Junior. I think this guy is looking for stuff that is smaller yet (than the 33JR).

Another indicator is that if the antenna won't take full power, it has lossy traps. I finally burned out a trap on the 33JR by running a KW into it. The comparison to the dipole was done before I burned out the trap - somebody once asked me...

I don't know how much power you are running, but your A3 and a linear would give you more ERP than any antenna improvement you could make. I had spent about 1/2 hour trying to work Ducie Island barefoot. Finally gave up and turned on the linear; the guy came back to me on my second call!

Tam/WB2TT

2267. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 01:40:04 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f25d191$1_7@corp.newsgroups.com>
Source record: 111561

Peter Brackett wrote:
> A directional coupler is *NOT* a circulator.

From the IEEE Dictionary: "directional coupler - a two port circulator"

Heh, heh, just kidding. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2268. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 01:44:43 UTC
From: tdonaly@aol.com
Message-ID: <20030728214443.20113.00000901@mb-m29.aol.com>
Source record: 111562

>
>On 28 Jul 2003 17:51:18 -0700, nm5k@wt.net (Mark Keith) wrote:
>
>> If you think it's a great
>>idea, use it. The end performance will tell the true story.
>>As an example, note the "EH" guy. Personally, I think he's on a
>>misguided turd hunt, but at least he's got the nads to actually build
>>the crazy looking things.
>
>Hi Mark,
>
>This kinda sounds like the plot to "Parsival," the world's longest
>Opera by Wagner.
>
>I would expand further, but me and my buddies are out the door to
>escape the heat at the mall's cineplex to see Tï¿½.
> "I'll be back...."
>
>73's
>Richard Clark, KB7QHC
>

"Parsival" a misguided turd hunt? That's a good way
to put it, though crude. You're going to get emails from
the music appreciation community, Richard.
73,
Tom Donaly, KA6RUH

2269. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 01:46:09 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <YhCdna-pL416TLiiU-KYgg@comcast.com>
Source record: 111563

You left out the step where he connects it to the goos.

Tam/WB2TT
"Dave Platt" <dplatt@radagast.org> wrote in message
news:vi6po7f5di4m1d@corp.supernews.com...
> In article <3F21DB84.E30C092@cwis.net>, 'Doc <w5lz@cwis.net> wrote:
>
> >> Can anyone help me "homebrew" a goos FM Pirate radio antenna?
> >> Help! Please!
> >
> >
> >Step One:
> > Find an unused pirate (preferably FM).
> >
> >Step Two:
> > Make feedline connections to pirate.
>
> Direct connection to coax. Do not use ladder line. Do not use a balun.
>
> History indicates quite strongly that most pirates were unbalanced.
>
>
> --
> Dave Platt <dplatt@radagast.org> AE6EO
> Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
> I do _not_ wish to receive unsolicited commercial email, and I will
> boycott any company which has the gall to send me such ads!

2270. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 02:04:23 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <RCkVa.10563$5b7.5926@lakeread01>
Source record: 111564

This isn't tough. You have the makings of a fine 160-10 meter antenna.

Step 1 - add wire to run the vertical leg back up toward the top to make it a total of 135 feet long. (linear loading)

Step 2 - feed it at the top center with 450 ohm ladder line (no radials or ground plane needed now) Run the ladder line away at an angle to be equidistant from the legs of the antenna and put a twist in the line about once every two feet.

Step 3 - run the ladder line back to a 1:1 current balun as close to the shack as you can (Centaur had some nice big ones)

Step 4 - coax to the tuner in the shack. You may not even need the tuner on 160.

Step 5 - enjoy. I do.

--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64

2271. Re: BPL pollution ☐ file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 02:31:57 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bg4mat$v44$0@208.206.142.73>
Source record: 111565
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

Brian Kelly wrote:

> peter@strg-alt-entf.org (Peter Lemken) wrote in message
news:<bg03i6$j9ehk$5@ID-31.news.uni-berlin.de>...
> > In rec.radio.amateur.dx Rob Kemp <robkemp90210@hotmail.com> wrote:
> >
> > > BPL pollution ? please file reply comments by August 6 (the FCC site
> > > tends to go down close to deadlines so try and post in plenty of
> > > time).
> >
> > You have already lost the battle.
> >
> > What can you say against an argument that includes "Homeland Security"?
> >
> > "Further, the addition of BPL facilities-based technologies will, as
> > correctly recognized by the Commission, enhance homeland security by
> > "creating new facilities to provide redundancy."
> >
> > Has anyone done a grep for 'terror' throughout these documents?
> >
> > And the fact that BPL has been abandoned for economic reasons in Germany
> > will probably make the US-guys feel that they can do a lot better than us
> > stupid Krauts. After all, we lost the war.
>
> Both of 'em actually.
>
> > Bye bye ham radio in the US.
>
> Don't put that in the bank. I've seen some analyses of BPL economics,
> beyond dismal. Breakeven point for recovering the initial investments
> is projected to be ten years out. How do you suppose Wall Street will
> react to that when that black cat gets out of the bag? Power utility
> mangements have to be among the worst of all possible types to
> shepherd anything hi-tech comms, they're still wrapped around steam
> engines.
>

Yeah but..... Remember Iridium?? Not 'zactly a gallopin' bizzness plan but
they got the spectrum and the $$$ backing to toss up something like $22bil
worth of hardware into the sky before reality struck. All very "high tech" and thus highly
desirable to the
regulators who get stars in their eyes and froth at the mouth at the very mention of the
name Carl
Stevenson...And if Bill Gates

and a couple other Guru level geeks climb on board this train's REALLY rollin'......

I sure wouldn't ignore the threat of BPL just because it stinks from almost every viewpoint except that it's
highly desireable as a high tech solution to
a percieved-but-not-necessarily-existant problem. Commisar Powell really
thinks it's THE solution to getting everyone in the world wired.....That alone is trumps tons of logic.

Dick

2272. Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 02:44:22 UTC
From: DOUGLAS SNOWDEN <SNOWDEN@peoplepc.com>
Message-ID: <vibnui28tvh453@corp.supernews.com>
Source record: 111566

I see a couple of sellers (AES and Texas Towers) have them but I cannot seem to find them anywhere on the web. Are these dealers selling stock that they have ?

Doug N4IJ

2273. Is Universal Towers Still in Business

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 02:45:36 UTC
From: DOUGLAS SNOWDEN <SNOWDEN@peoplepc.com>
Message-ID: <vibnuiru8l9i54@corp.supernews.com>
Source record: 111567

I see Texas Towers and AES sell them but cannot find them on the web

Doug N4IJ

2274. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 05:19:27 UTC
From: "Ryan, KC8PMX" <kc8pmx@diamondcs.net>
Message-ID: <bg5un2$kilmh$3@ID-189073.news.uni-berlin.de>
Source record: 111573
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

Don't know if anyone has considered this, but if the BPL lines are going to radiate intereference, would it not stand to reason that the lines would be (not by choice) accepting outside RFI sources???

Just a thought on the issue,

--
Ryan, KC8PMX
FF1-FF2-MFR-(pending NREMT-B!)
--. --- -.. ... .- -. --. . .-.. ... .- .-. . ..-. .. .-. . ..-.
.. --. .... - . .-. ...
"Scott Unit 69" <scott_unit_69@yahoo.moc> wrote in message
news:3F20639E.610EFE55@yahoo.moc...
> > > For anyone that wants to save their radio waves from an RF intrusion
> > > of the greedy type, read on.
> > >
> > > This is much more important then the CW issue.
> > > This is a real problem in the making for ALL RADIO USERS!!!
> >
> > Talk about irony... if BPL goes through, there's a good chance that only
CW
> > will be able to punch through it... : |
>
>
> Just make sure to key your elements on their carrier frequencies.

2275. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 06:14:08 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bg53bl$g9n$1@slb4.atl.mindspring.net>
Source record: 111568

Cecil:

[snip]
> From the IEEE Dictionary: "directional coupler - a two port circulator"
>
> Heh, heh, just kidding. :-)
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

:-)

Heh, heh... Actually the closest thing to a "two port circulator" is an
"ideal
transformer" it has the same scattering matrix as a two port circulator.

BTW... here's an interesting rhetorical question that is often posed
in texts on the scattering matrix.

How many different kinds of three port circulators are there?

--
Peter K1PO
Indialantic By-the-Sea, FL.

2276. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 06:21:11 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ol1civ03atqhgs914c604b8n891b16kauv@4ax.com>
Source record: 111569

On 29 Jul 2003 01:44:43 GMT, tdonaly@aol.com (Tdonaly) wrote:

>>
>>On 28 Jul 2003 17:51:18 -0700, nm5k@wt.net (Mark Keith) wrote:
>>
>>> If you think it's a great
>>>idea, use it. The end performance will tell the true story.
>>>As an example, note the "EH" guy. Personally, I think he's on a
>>>misguided turd hunt, but at least he's got the nads to actually build
>>>the crazy looking things.
>>
>>Hi Mark,
>>
>>This kinda sounds like the plot to "Parsival," the world's longest
>>Opera by Wagner.
>>
>>I would expand further, but me and my buddies are out the door to
>>escape the heat at the mall's cineplex to see Tï¿½.
>> "I'll be back...."
>>
>>73's
>>Richard Clark, KB7QHC
>>
>
>"Parsival" a misguided turd hunt? That's a good way
>to put it, though crude. You're going to get emails from
>the music appreciation community, Richard.
>73,
>Tom Donaly, KA6RUH

Hi Tom,

Well I have little to fear of that from this group.

I just saw Gilbert and Sullivan's "The Gondoliers" last Saturday night, visited the new Opera house the week before (they were setting up for "Parsival") and have been to more than a few Opera fund drives in the past year (full dress dinners). Then there were several Balls, lectures (National Geographic), the Bavarian Symphony (front row, third balcony - nie wieder!), "42nd Street" and as the King of Siam would say: "et cetera, et cetera, et cetera." Hardly describes my calendar for the year.

Back when I was in the film society, we had a hook-up program with the Opera's Ring Cycle and showed Fritz Lang's "Die Nibelungen." To most who even recognize either, that wouldn't be so remarkable until you

realize that this was a silent movie. There were quite a number of "silent" Operas done in the 20's.

Well, Tï¿½ was a hoot (and kept us cool to boot). But #@!$8.50 is getting too steep for a shorter sequel. The story is rather derivative from Tï¿½ (the liquid metal pursuer, even if a girl, is getting a bit thin). There seems to be a new logic in showing movies (matches some of the posting tactics I've seen here), if the plot is wobbly, turn up the volume.

73's
Richard Clark, KB7QHC, past President of the Seattle Film Society

2277. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 07:46:06 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307282346.2b3d9298@posting.google.com>
Source record: 111570

nbr <nobodyreally@hotmail.com> wrote in message
news:<occaivouorj2aimsctulr840bu5igp4l4m@4ax.com>...
> On Sun, 27 Jul 2003 19:19:26 -0500, nbr <nobodyreally@hotmail.com>
> wrote:
>
> >I've put up an inverted-L, which consists of approx. 135' horizontal
> >leg, and approx. 70' vertical leg. I can shorten the overall length of
> >the antenna, but cannot lengthen it. There are about 4 ground rods
> >within about 10' of the base ofthe vertical element, plus about 25
> >square feet of chickenn wire to serve as a ground plane. I can feed
> >the antenna right at ground level, or can arrange to feed it up to
> >6-10' above ground. There is about 120' of buried coax to the shack,
> >which must feed this antenna. I'd like to use this inverted-L on
> >160-10M (will settle for 80-10M).
> >1) How to feed the antenna and be able to run legal limit, all bands?
> >Current or voltage balun? Won't a balun disspiate power and decrease
> >efficiency? WIll a balun at ground level increase ground losses?
> >2) How is the inverted-L said to be a vertically polarized antenna,
> >when a major portion of its radiating element is horizontal?
> >3) For Field Day we added another vertical leg to this antenna to make
> >it into a half-square, and had decent results on 40M/20M. How is the
> >half-square described as "two verticals in phase", when again, there
> >is a major part of the antenna (the so-called "phasing element") which
> >is horizontal?
> >Thanks and 73
> >Dan (K0DAN)
> >NOSPAM-dt0124@arrl.org
>
> Thanks for the recent comments on my previous post. They have been
> interesting and informative.
>
> The "antenna voodoo" is still bothering me about the theory of some of
> these antennas (e.g. inverted-L, half-square, etc.). I understand that
> the horizontal leg of the "L" is considered an "inductor at the top of
> the vertical" element, but why not the reverse?

Myself, I tend to consider it capacitance rather than inductance. IE:
one leg of a top hat.

Why is this not a
> "bent horizontal" with segments which radiate both in the horizontal
> and vertical planes?

In a way it is, but the vertical radiation overshadows the horizontal
when using a 1/4 wave long inv L. Maximum current is at the base if

you are feeding it at the base. The thing with your antenna is it's longer than a 1/4 wave on even 160 meters. So you will have more radiation from the horizontal wire than you would a shorter antenna. But on some bands, this may not be a bad thing. To run on 160m with power, it's fairly simple. Use a big variable cap in series at the base to tune out the reactance. The match should be usable. And the antenna will work well for mid range use. Better close in than the 1/4 wave L. The max current point is well up the vertical part from the base, and ground losses are reduced. But it might not be as simple on the other bands. You almost need a tuner at the base. A simple L network should do the job. It would be much simpler for all band use if you had a 135 ft center fed dipole fed with ladder line to a tuner in the shack. The overall performance on most bands would be better. If your run of coax to the antenna were real short, and you used good fat coax, you could tune the L with a good tuner at the shack and have a usable signal. But I think you said you had 120 ft. Thats a bit long for very high SWR use. And being it's buried, the expected likely common mode currents that could be usefully radiated, will be wasted heating earthworms...:/ MK

2278. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 13:20:58 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <_wuVa.26264$Mc.2046097@newsread1.prod.itd.earthlink.net>
Source record: 111571

Richard Clark wrote:
> Hi Tom,
>
> Well I have little to fear of that from this group.
>
> I just saw Gilbert and Sullivan's "The Gondoliers" last Saturday
> night, visited the new Opera house the week before (they were setting
> up for "Parsival") and have been to more than a few Opera fund drives
> in the past year (full dress dinners). Then there were several Balls,
> lectures (National Geographic), the Bavarian Symphony (front row,
> third balcony - nie wieder!), "42nd Street" and as the King of Siam
> would say: "et cetera, et cetera, et cetera." Hardly describes my
> calendar for the year.
>
> Back when I was in the film society, we had a hook-up program with the
> Opera's Ring Cycle and showed Fritz Lang's "Die Nibelungen." To most
> who even recognize either, that wouldn't be so remarkable until you
> realize that this was a silent movie. There were quite a number of
> "silent" Operas done in the 20's.
>
> Well, T[illegible] was a hoot (and kept us cool to boot). But #@!$8.50 is
> getting too steep for a shorter sequel. The story is rather
> derivative from T[illegible] (the liquid metal pursuer, even if a girl, is
> getting a bit thin). There seems to be a new logic in showing movies
> (matches some of the posting tactics I've seen here), if the plot is
> wobbly, turn up the volume.
>
> 73's
> Richard Clark, KB7QHC, past President of the Seattle Film Society
>
Hi Richard,
If I'm permitted to add a little trivia, Jean and I were in St. Petersburg earlier this month, where we saw the Russian Kirov Ballet performing "Gisele' in the Kirov theatre. We also saw the house where Tchaikovsky lived during his later composing days.

Walt, W2DU

2279. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 13:33:38 UTC
From: kb8yio <donna280@wideopenwest.com>
Message-ID: <xd6cnSQdmuIu6ruiU-KYuQ@wideopenwest.com>
Source record: 111572

a few yeas ago there was a ham that made 2 element beams i think he called
them dx dogz,, it was 5 foot long on the boom. covered 10 thru 20 meters
with a tuner.i got one its great.. and never had any problems with it...
i have since lost contact with him...
"Javier Henderson" <javier@KJSL.COM> wrote in message
news:867k64uhje.fsf@skylane.kjsl.com...
> What is the smallest commercially made beam that covers 20 through 10?
>
> 73,
> -jav w6vms

2280. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 14:01:49 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <a8vcivcgs81nnsbjhvoffbnrte2cmf9l2t@4ax.com>
Source record: 111574

Mark:

Thanks for your explanation (which even I was able to comprehend).
When I get into these antenna mysteries, the thing for me to remember
is to focus on where the likely voltage and current points are on the
element(s), and from there I have a better chance of prediciting the
characteristics of the antenna at a given frequency. Otherwise it's
pure voodoo. (I need to tattoo a couple graphs on my hand.)

As to this particular project, I've received several interesting
suggestions, some modifying the shape/size, some adding a tuner at the
base. I'm probably gonna try both. I have a line on an extra tuner,
which I'm gonna try to weatherproof and install (single band) at the
base of the antenna. From there, maybe do some wire pruning.

Again, thanks for your comments.

73
Dan (k0dan)

On 29 Jul 2003 00:46:06 -0700, nm5k@wt.net (Mark Keith) wrote:

>nbr <nobodyreally@hotmail.com> wrote in message
news:<occaivouorj2aimsctulr840bu5igp4l4m@4ax.com>...
>> On Sun, 27 Jul 2003 19:19:26 -0500, nbr <nobodyreally@hotmail.com>
>> wrote:
>>
>> >I've put up an inverted-L, which consists of approx. 135' horizontal
>> >leg, and approx. 70' vertical leg. I can shorten the overall length of
>> >the antenna, but cannot lengthen it. There are about 4 ground rods
>> >within about 10' of the base ofthe vertical element, plus about 25
>> >square feet of chickenn wire to serve as a ground plane. I can feed
>> >the antenna right at ground level, or can arrange to feed it up to
>> >6-10' above ground. There is about 120' of buried coax to the shack,
>> >which must feed this antenna. I'd like to use this inverted-L on
>> >160-10M (will settle for 80-10M).
>> >1) How to feed the antenna and be able to run legal limit, all bands?
>> >Current or voltage balun? Won't a balun disspiate power and decrease
>> >efficiency? WIll a balun at ground level increase ground losses?
>> >2) How is the inverted-L said to be a vertically polarized antenna,
>> >when a major portion of its radiating element is horizontal?
>> >3) For Field Day we added another vertical leg to this antenna to make
>> >it into a half-square, and had decent results on 40M/20M. How is the
>> >half-square described as "two verticals in phase", when again, there
>> >is a major part of the antenna (the so-called "phasing element") which
>> >is horizontal?

>> >Thanks and 73
>> >Dan (K0DAN)
>> >NOSPAM-dt0124@arrl.org
>>
>> Thanks for the recent comments on my previous post. They have been
>> interesting and informative.
>>
>> The "antenna voodoo" is still bothering me about the theory of some of
>> these antennas (e.g. inverted-L, half-square, etc.). I understand that
>> the horizontal leg of the "L" is considered an "inductor at the top of
>> the vertical" element, but why not the reverse?
>
>Myself, I tend to consider it capacitance rather than inductance. IE:
>one leg of a top hat.
>
>Why is this not a
>> "bent horizontal" with segments which radiate both in the horizontal
>> and vertical planes?
>
>In a way it is, but the vertical radiation overshadows the horizontal
>when using a 1/4 wave long inv L. Maximum current is at the base if
>you are feeding it at the base. The thing with your antenna is it's
>longer than a 1/4 wave on even 160 meters. So you will have more
>radiation from the horizontal wire than you would a shorter antenna.
>But on some bands, this may not be a bad thing. To run on 160m with
>power, it's fairly simple. Use a big variable cap in series at the
>base to tune out the reactance. The match should be usable. And the
>antenna will work well for mid range use. Better close in than the 1/4
>wave L. The max current point is well up the vertical part from the
>base, and ground losses are reduced. But it might not be as simple on
>the other bands. You almost need a tuner at the base. A simple L
>network should do the job. It would be much simpler for all band use
>if you had a 135 ft center fed dipole fed with ladder line to a tuner
>in the shack. The overall performance on most bands would be better.
>If your run of coax to the antenna were real short, and you used good
>fat coax, you could tune the L with a good tuner at the shack and have
>a usable signal. But I think you said you had 120 ft. Thats a bit long
>for very high SWR use. And being it's buried, the expected likely
>common mode currents that could be usefully radiated, will be wasted
>heating earthworms...:/ MK

2281. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 15:12:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f268fef$1_8@corp.newsgroups.com>
Source record: 111575

nbr wrote:
> When I get into these antenna mysteries, the thing for me to remember
> is to focus on where the likely voltage and current points are on the
> element(s), and from there I have a better chance of prediciting the
> characteristics of the antenna at a given frequency. Otherwise it's
> pure voodoo. (I need to tattoo a couple graphs on my hand.)

You could probably learn a lot by using a modeling program like EZNEC,
which is available in a free demo version at http://www.eznec.com
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2282. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 15:35:08 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307290735.477d80a7@posting.google.com>
Source record: 111576

Mark,
A couple of correction before I completely move away from my antenna
Yes I did not got to University, nor did I have a normal schooling in
my childhood since the London was undergoing changes forced upon it by
a man named Hitler
However I do believe that I have gained an education of sorts since I
managed to
meet all academic requirements as a P.E. I came to the States because
of offers that I received (expenses paid)My family sold up after three
months and followed me when it was realised that I ccould not last for
ever on fast food.
Since I workrd for G.E. as a Senior engineer upto retirement I now
lead a comfortable life. The patents that I wrote up on antennas
reflectes my inexperience with the subject but the present write up
should be more readable
when it is finally accepted by the P.T.O. As far as actually making my
antennas
it would be foolhardy not to, including double checking with computor
analysis together with academic review from first principles. All of
the above was done as a hobby to suit myself only as a 'lifeline'
activity after a serious illness. Enough said... my present project is
a 'micky' mouse tuner.
Best Regards
Art

havenm5k@wt.net (Mark Keith) wrote in message
news:<25eb70d7.0307281651.6769fd3@posting.google.com>...
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
> > Mark,
> > Put the whole antenna idea aside The thing could not possibly work, my
> > activity is a total illusion. If anything new comes along, which is
> > highly unlikely since all is known,do you really believe it would be
> > the likes of me to find it?
>
> Many useful inventions have come from people that on the surface, you
> would think are surely dumbasses in their fields due to lack of
> training. I can think of many right off the top of my head. I don't
> think Bill Lear had too much school and training, but he seemed to do
> ok as one example. I think he invented the 8 track, along with a few
> other aviation related patents. "I think anyway"..
> Not to mention cobbling together the jet airplane which is quite
> common at airports these days. So this "poor dumb ole Art" crap is not
> going to fly far with me. If you feel the antenna would work, I think
> you should build it. I would ignore everything everyone says. BUT! I

> wouldn't presume to flog others for their lack of "vision", just
> because something you don't even use or seemd to have built in real
> life is not readily accepted as practical. If you think it's a great
> idea, use it. The end performance will tell the true story.
> As an example, note the "EH" guy. Personally, I think he's on a
> misguided turd hunt, but at least he's got the nads to actually build
> the crazy looking things. And this eventually lets others compare them
> to tell the true story. Unfortunately, his antenna seems to be
> primarily a feedline hanging device. It supports the feedline, which
> is the "real" antenna and does the bulk of the radiating. I think a
> pully or other hanging device would be about as efficient overall. :/
> MK

2283. Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 15:50:27 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307290750.345d3abf@posting.google.com>
Source record: 111577

Seems like a lot of hams with limited resources are still compelled
to operate on many bands with just a long wire and a tuner.
The wire is inexpensive but the tuners are not. Thus my present
project.
I was given a Palomar enginnering balun with 5 female connenection
which by selection can match a antenna in steps from 5 ohms to over
450 ohms
in a series of steps. I am presently rigging it up so that all
steps can be switched thru remotely by a single motor. The switching
arrangement
is the main challenge since inexpensive means simple.
Now I have not measured losses of the balun before hand because the
switching
challenge is what is driving me.
Anybody have any thoughts about what I should expect from this
balun other than knowing that it is not a tuner as is generally known
since
it does not have the ability to obtain the priceless 1:1 condition
that so many desire?
Regards
Art

2284. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 16:08:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hr6divkq19mmeil78bib83cl7po6itduf6@4ax.com>
Source record: 111578

On Tue, 29 Jul 2003 13:20:58 GMT, "Walter Maxwell" <w2du@iag.net>
wrote:

>Hi Richard,
>If I'm permitted to add a little trivia, Jean and I were in St. Petersburg
>earlier this month, where we saw the Russian Kirov Ballet performing
>"Gisele' in the Kirov theatre. We also saw the house where Tchaikovsky lived
>during his later composing days.
>
>Walt, W2DU

Hi Walt,

Wish I had been there along with you.

73's
Richard Clark, KB7QHC

2285. Problem with my MFJ-989 and 1N34E

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 16:14:32 UTC
From: Francis Pinson <F6BLP@wanadoo.fr>
Message-ID: <bg66h6aog1@news-reader5.wanadoo.fr>
Source record: 111579

I have a problem with my MFJ-986

The two 1N34E of the control power and the system of TOS meter have qrt ....two time. I don't know the reason but it is not about too big power or some thing like that....Not in use or in qso. I think it is with statics (when there is a storm, or snow..or ??) I have also put 2X1N4148 and also go qrt...

I have put two 1N4001 but all the measures of power or swr are wrong... I cannot tune the god power. But they have no qrt for the moment !!

Is there anybody who have the same problem ?? And what kind of pin can I put in place of the 1N34E ?? to find again the same characteristic of the MFJ 986 at the beginning ?? and be much powerful than the 1N34E ??

Thanks for your help and excuse me for bad english. I hope that you can understand me !

Best 73

Frank **F6BLP**

2286. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 16:25:10 UTC
From: jder8745@aol.com
Message-ID: <20030729122510.06926.00000920@mb-m06.aol.com>
Source record: 111580

That's not really important at HF frequencies and negligible at 2 meters.

Jack

2287. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 16:28:38 UTC
From: jder8745@aol.com
Message-ID: <20030729122838.06926.00000921@mb-m06.aol.com>
Source record: 111581

No it doesn't need to be matched to the line!

They often aren't.

Jack K9CUN

2288. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 16:38:12 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <kh8div88qbeoscc0r054buvr2lptdurnuo@4ax.com>
Source record: 111582

On Tue, 29 Jul 2003 10:12:16 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>nbr wrote:
>> When I get into these antenna mysteries, the thing for me to remember
>> is to focus on where the likely voltage and current points are on the
>> element(s), and from there I have a better chance of prediciting the
>> characteristics of the antenna at a given frequency. Otherwise it's
>> pure voodoo. (I need to tattoo a couple graphs on my hand.)
>
>You could probably learn a lot by using a modeling program like EZNEC,
>which is available in a free demo version at http://www.eznec.com

You know, I've been meaning to do exactly that. A few years ago tried
a free demo (might have been early version of EZNEC?) and was scared
away from it because I found it extremely difficult to input the
antenna data....a simple dipole in free space was no big deal, but the
oddball antennas I like to experiment with (goofy lengths, bends and
angles,(in real world environment...near tower, metal barn etc.!) were
practically impossible to input.Garbage in, garbage out. Will give it
another try.
Tnx & 73
Dan (K0DAN)

2289. Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 17:07:37 UTC
From: Alfred Lorona <w6wqc@dslextreme.com>
Message-ID: <bg69l2$kohm3$1@ID-49117.news.uni-berlin.de>
Source record: 111583

For us inner city people who would like to operate the 160 meter cw contest, a 160 meter dipole is out of the question. Even an 80 meter wire is not possible.

Modeling a 14 gauge copper 68 foot dipole on 2 Mhz at 35 feet over real ground shows a feedpoint impedance of 7-j2700 ohms. This translates to a 3.11 dB total loss in a 50 foot long low-loss open wire feedline. If the 2700 ohm reactance can be eliminated, the total line loss becomes a more much acceptable .25 dB. This can be accomplished with a stub but that is good at only one frequency.

If the antenna copper loss is excluded in the simulation, Z is 2.8-j2700 ohms and the feedline loss is still less than 1 dB after reactance cancellation.

Use two parallel feedlines. Clip a 60 foot line onto the dipole. Connect a 30 microhenry high Q variable or roller coil at the station end and adjust it for +j2700 ohms at the antenna end. This acts as a variable stub. Voila! the reactance is cancelled out.

Notwithstanding the lowered radiating efficiency of a short dipole or the match loss introduced by the antenna tuner, at least the line loss is minimized to an acceptable level.

2290. Re: Problem with my MFJ-989 and 1N34E

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 17:08:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f26ab3f_2@corp.newsgroups.com>
Source record: 111584

Francis Pinson wrote:
> Is there anybody who have the same problem ?? And what kind of pin can I put
> in place of the 1N34E ?? to find again the same characteristic of the MFJ
> 986 at the beginning ?? and be much powerful than the 1N34E ??

Sounds like the 1N34 reverse voltage spec may be being violated. Maybe
paralleling the 1N34 with a power Zener diode would help? The Zener
voltage should be a little less than the 1N34's reverse voltage rating.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2291. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 17:16:43 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307290916.6cd16341@posting.google.com>
Source record: 111585

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030728125342.27688.00000631@mb-m23.aol.com>...
> >
> > Too bad both Saddam and Bin Laden were both monsters created by
> >the CIA, that is, the USA government.
>
> As Bill Crosby said: I brought you into this world, I can take you out.
> Maybe one lesson Bin Saddams can learn: "Don't push it!"
>

In CIA parlance, it's called "blowback". It's a nasty world, but
if you create monsters, don't expect them to behave as you wish all
the time.

Slick

2292. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 17:46:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vidcnnsornq4b6@corp.supernews.com>
Source record: 111586

I see that most of your questions about inverted L antennas have been answered.

The questions you asked (quoted below) illustrate the danger of trying to oversimplify antenna operation. For example, the problem with the "inductor at the top of the vertical" is simply that the horizontal leg isn't just an "inductor at the top of the vertical". If you consider it one, you end up with dilemmas like you've encountered. Likewise, dividing wires into two separate and distinct classes of "phasing lines" and "radiators" gives you no room for wires which do both simultaneously (let alone deal with "phasing lines" whose phase shift doesn't equal the electrical length of the line, which often happens).

You'll have to develop a more basic understanding of antenna operation, and avoid trying to pigeonhole antenna characteristics into a convenient handful of categories, if you're ever to have antennas make sense and cease being "voodoo". The EZNEC demo is a way many people have found to help learn what's going on. If you do download the demo, be sure to go through the "Test Drive" tutorial to get started. If you don't find EZNEC to be your cup of tea, there are now a number of free antenna analysis programs available, and you'll probably find one that's to your liking.

Roy Lewallen, W7EL

nbr wrote:
>
> Thanks for the recent comments on my previous post. They have been
> interesting and informative.
>
> The "antenna voodoo" is still bothering me about the theory of some of
> these antennas (e.g. inverted-L, half-square, etc.). I understand that
> the horizontal leg of the "L" is considered an "inductor at the top of
> the vertical" element, but why not the reverse? Why is this not a
> "bent horizontal" with segments which radiate both in the horizontal
> and vertical planes? Why is the horizontal sengment of a 1/2-square
> considered a "phasing line" and not a radiator?
>
> 73
> Dan (K0DAN)

2293. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 18:19:39 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bg6drrhnu0@208.207.71.159>
Source record: 111587

You're going to a lot of unnecessary trouble and expense for receiving
only.
The ham radio transmitting loops are way larger and heavier than your
needs
require, and more difficult and troublesome to tune.
Do a google search on recieving loops and go from there.

Dick

Hatfield wrote:

> Please consider this a newbie question. Am an SWL, not a HAM, and am
> considering an MFJ loop as the primary indoor SWL antenna, along with
> an active antenna as a less potent secondary, the two connected via an
> antenna switch.
>
> So lets say I read in a schedule that a certain frequency in the 49
> meter band right now should have an interesting broadcast station on
> the air, so I set my receiver digital readout to that freq, then
> what's the procedure to tune the loop to that same exact frequency,
> having no transmiter?
>
> Thanks for any help!

2294. Re: Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 18:22:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <videqb5o5iga7@corp.supernews.com>
Source record: 111588

There are a couple of interesting things this analysis reveals.

The first is that wire loss is reducing the antenna efficiency to 2.8/7 = 40%, or a loss of just about 4 dB. So making it out of a larger diameter wire, like the shield of a piece of coax (with the coax intact so that the shield stays full size), or a number of parallel wires, would be a useful improvement if physically practical.

Another thing is the importance of the loading inductor or stub Q. If the overall Q is, say, 100, then the inductor/stub will introduce 27 ohms of additional loss resistance. This would reduce the antenna gain (due to efficiency reduction) by nearly another 7 dB (assuming an initial 7 ohm feedpoint impedance). If the overall Q is 400, it'll introduce 6.75 ohms of resistance, for about 3 dB extra loss. So it pays to make the stub/inductor Q as high as possible. Some antenna manufacturers would have us believe that stubs are lossless, or at least low loss. They're not -- it's not hard at all to make an inductor whose Q is considerably better than a stub. Open wire stub loss can be determined by modeling as wires, with and without wire loss. Of course, if the stub is made from twinlead or window line, its loss will increase considerably when wet.

Roy Lewallen, W7EL

Alfred Lorona wrote:
> For us inner city people who would like to operate the 160 meter cw contest,
> a 160 meter dipole is out of the question. Even an 80 meter wire is not
> possible.
>
> Modeling a 14 gauge copper 68 foot dipole on 2 Mhz at 35 feet over real
> ground shows a feedpoint impedance of 7-j2700 ohms. This translates to a
> 3.11 dB total loss in a 50 foot long low-loss open wire feedline. If the
> 2700 ohm reactance can be eliminated, the total line loss becomes a more
> much acceptable .25 dB. This can be accomplished with a stub but that is
> good at only one frequency.
>
> If the antenna copper loss is excluded in the simulation, Z is 2.8-j2700
> ohms and the feedline loss is still less than 1 dB after reactance
> cancellation.
>
> Use two parallel feedlines. Clip a 60 foot line onto the dipole. Connect a
> 30 microhenry high Q variable or roller coil at the station end and adjust
> it for +j2700 ohms at the antenna end. This acts as a variable stub. Voila!
> the reactance is cancelled out.
>

> Notwithstanding the lowered radiating efficiency of a short dipole or the
> match loss introduced by the antenna tuner, at least the line loss is
> minimized to an acceptable level.
>
>
>
>

2295. Re: Problem with my MFJ-989 and 1N34E

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 18:30:54 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <y3zVa.7433$Oz4.1759@rwcrnsc54>
Source record: 111589

The 1N34s are basically Germanium devices with low forward voltages,
typically less than 0.3 volts. The 1N4148 and 1N4001 are silicon devices
with forward voltages typically to 0.7 volts.

You should be tracing the cause of the over voltage or overcurrent on
the 1N34s. Something else is wrong in the tuner/VSWR meter. Possibly a
shorted capacitor or shorted resistor in the VSWR sense circuit.

Deacon Dave, W1MCE

Francis Pinson wrote:

> I have a problem with my MFJ-986
>
> The two 1N34E of the control power and the system of TOS meter have qrt
> ....two time. I don't know the reason but it is not about too big power or
> some thing like that....Not in use or in qso. I think it is with statics
> (when there is a storm, or snow..or ??) I have also put 2X1N4148 and also
> go qrt...
>
> I have put two 1N4001 but all the measures of power or swr are wrong... I
> cannot tune the god power. But they have no qrt for the moment !!
>
> Is there anybody who have the same problem ?? And what kind of pin can I put
> in place of the 1N34E ?? to find again the same characteristic of the MFJ
> 986 at the beginning ?? and be much powerful than the 1N34E ??
>
> Thanks for your help and excuse me for bad english. I hope that you can
> understand me !
>
> Best 73
>
> Frank **F6BLP**
>
>

2296. Re: New way of attaching PL-259s

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 19:05:06 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bg6gh2$n20$0@208.207.71.174>
Source record: 111590

"Dick Carroll;" wrote:

>
> Once I needed to hook up a small dish sattelite TV system, which
> operates above 2 GHZ as I recall,

I should have noted that the signal traveling on the coax is somewhat lower
than 2 GHz since it is downconverted at the dish to a "block" band of
frequencies
that the set-top receiver tunes. I'm not sure what the block-down band is
for the
small-dish systems, some of the the earlier large dish C band systems used a

band around 800 MHz. But the point remains.

2297. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 19:28:14 UTC
From: tdonaly@aol.com
Message-ID: <20030729152814.04786.00000048@mb-m13.aol.com>
Source record: 111591

>
>Richard Clark wrote:
>> Hi Tom,
>>
>> Well I have little to fear of that from this group.
>>
>> I just saw Gilbert and Sullivan's "The Gondoliers" last Saturday
>> night, visited the new Opera house the week before (they were setting
>> up for "Parsival") and have been to more than a few Opera fund drives
>> in the past year (full dress dinners). Then there were several Balls,
>> lectures (National Geographic), the Bavarian Symphony (front row,
>> third balcony - nie wieder!), "42nd Street" and as the King of Siam
>> would say: "et cetera, et cetera, et cetera." Hardly describes my
>> calendar for the year.
>>
>> Back when I was in the film society, we had a hook-up program with the
>> Opera's Ring Cycle and showed Fritz Lang's "Die Nibelungen." To most
>> who even recognize either, that wouldn't be so remarkable until you
>> realize that this was a silent movie. There were quite a number of
>> "silent" Operas done in the 20's.
>>
>> Well, Tï¿½ was a hoot (and kept us cool to boot). But #@!$8.50 is
>> getting too steep for a shorter sequel. The story is rather
>> derivative from Tï¿½ (the liquid metal pursuer, even if a girl, is
>> getting a bit thin). There seems to be a new logic in showing movies
>> (matches some of the posting tactics I've seen here), if the plot is
>> wobbly, turn up the volume.
>>
>> 73's
>> Richard Clark, KB7QHC, past President of the Seattle Film Society
>>
>Hi Richard,
>If I'm permitted to add a little trivia, Jean and I were in St. Petersburg
>earlier this month, where we saw the Russian Kirov Ballet performing
>"Gisele' in the Kirov theatre. We also saw the house where Tchaikovsky lived
>during his later composing days.
>
>Walt, W2DU
>
>

You guys sure know how to lead the good life. I've been reduced, lately, to
sitting around the house reading leather-bound classics.
73,

Tom Donaly, KA6RUH

2298. Re: Problem with my MFJ-989 and 1N34E

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 19:30:21 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F26CB4D.B155F9C8@cwis.net>
Source record: 111592

Frank,
Write or email MFJ, they will be happy to
'trouble shoot' your tuner for you.
'Doc

2299. FS *HF ANTENNAS*

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 20:25:00 UTC
From: Alfred Gosselin <a.gosselin@comcast.net>
Message-ID: <wKAVa.8354$cF.1296@rwcrnsc53>
Source record: 111593

Getting ready to downsize QTH and the antenna farm has to go. The following antennas are looking for a new home. I am in the Hartford, CT area and prefer to deal on a pickup or meet within a reasonable distance basis. I will entertain any and all reasonable offers. These antennas have provided me with countless hours of enjoyment and I'll guarantee that they have a few more left.

1. Hy-gain 5 el "Long John" 10 meter monobander. Works Great

2. Alliance HD-73 Heavy duty Rotator

3. Hy-Gain 5 el 6 meter monobander

4. Cushcraft Vertical ATV-4

5. Classic Swan TB-2A (2 el tribander)

6. Classic Swan 4010V (trap vertical)

7. Hy-Gain 3 el 6 meter monobander

Tnx,

Fred (KA1KE)
fredgosselin@comcast.net

2300. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 20:35:16 UTC
From: dplatt@radagast.org
Message-ID: <vidmk426a8a225@corp.supernews.com>
Source record: 111594
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave,rec.radio.cb

In article <bg5un2$kilmh$3@ID-189073.news.uni-berlin.de>,
Ryan, KC8PMX <kc8pmx@diamondcs.net> wrote:

>Don't know if anyone has considered this, but if the BPL lines are going to
>radiate intereference, would it not stand to reason that the lines would be
>(not by choice) accepting outside RFI sources???

Correct... and there have been some very pithy statements concerning
this issue submitted to the FCC.

A few I've seen (from the ARRL and others):

- The FCC recently turned down the request for an amateur very-low-
frequency band, on the basis of concerns voiced by the power
companies. The power companies asserted that their existing
power-line-control equipment (which uses VLF signals on the lines)
would not be able to tolerate even the level of EMI induced by an
amateur transmitter running just a few watts of power, on
frequencies where neither the amateur antennas or the power lines
are likely to be acting as efficient radiators/acceptors.

Now, BPL is being proposed... and its proponents are asserting (or
assuming) that BPL can operate effectively even in the presence of
much higher HF interference levels, generated by amateur
transmitters running at legal-maximum power, on frequencies where
the antennas and power lines will be much more efficient.

As the ARRL comment put it, "You can't have it both ways."

- Voltage levels induced by amateur-radio and other licensed
transmitters will likely be high enough to saturate the RF front
end circuitry, and the digitzers, used in BPL modems built to
typical consumer-electronics standards. This could very easily
result in loss of BPL connectivity over a fairly significant area
around each licensed transmitter station, whenever the transmitter
keyed up.

- Getting the BPL signals through, or around, the existing low-pass
filtration created by powerline transformers will require
installing high-pass bypass circuitry. This circuitry will
necessarily couple RF noise on the lines just as efficiently as BPL
signals, and will allow RF noise (e.g. triac switching noise, motor
commutator noise, etc.) to travel on the lines quite a bit further
than it does today.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2301. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 20:52:22 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <a8BVa.26680$Mc.2077238@newsread1.prod.itd.earthlink.net>
Source record: 111596

"Tdonaly" <tdonaly@aol.com> wrote in message
news:20030729152814.04786.00000048@mb-m13.aol.com...
> >
> >Richard Clark wrote:
> >> Hi Tom,
> >>
> >> Well I have little to fear of that from this group.
> >>
> >> I just saw Gilbert and Sullivan's "The Gondoliers" last Saturday
> >> night, visited the new Opera house the week before (they were setting
> >> up for "Parsival") and have been to more than a few Opera fund drives
> >> in the past year (full dress dinners). Then there were several Balls,
> >> lectures (National Geographic), the Bavarian Symphony (front row,
> >> third balcony - nie wieder!), "42nd Street" and as the King of Siam
> >> would say: "et cetera, et cetera, et cetera." Hardly describes my
> >> calendar for the year.
> >>
> >> Back when I was in the film society, we had a hook-up program with the
> >> Opera's Ring Cycle and showed Fritz Lang's "Die Nibelungen." To most
> >> who even recognize either, that wouldn't be so remarkable until you
> >> realize that this was a silent movie. There were quite a number of
> >> "silent" Operas done in the 20's.
> >>
> >> Well, T2 was a hoot (and kept us cool to boot). But #@!$8.50 is
> >> getting too steep for a shorter sequel. The story is rather
> >> derivative from T2 (the liquid metal pursuer, even if a girl, is
> >> getting a bit thin). There seems to be a new logic in showing movies
> >> (matches some of the posting tactics I've seen here), if the plot is
> >> wobbly, turn up the volume.
> >>
> >> 73's
> >> Richard Clark, KB7QHC, past President of the Seattle Film Society
> >>
> >Hi Richard,
> >If I'm permitted to add a little trivia, Jean and I were in St.
Petersburg
> >earlier this month, where we saw the Russian Kirov Ballet performing
> >"Gisele' in the Kirov theatre. We also saw the house where Tchaikovsky
lived
> >during his later composing days.
> >
> >Walt, W2DU
> >

> >
>
> You guys sure know how to lead the good life. I've been reduced, lately,
to
> sitting around the house reading leather-bound classics.
> 73,
> Tom Donaly, KA6RUH
>
Hi Tom,

You've just given me the opening to rub it in a little. We took a three-week
N European Cruise from Dover to LeHavre, Oslo, Copenhagen, Rostock, Gdansk,
Tallinn, St. Petersburg, Helsinki, Stockholm and back to London. One of the
best cruises we've had.

Had a lot of fun with the GPS. It still worked while in Eastern Longitudes.
I got Ian's phone number from Roy, but any time I was available to call him
was an inappropriate time to call him, so I missed him. Roy emailed Reg to
have him email me his address, and I sent him two emails asking for it, but
he never answered. Was hoping to be able to meet them both while in England,
but better luck next time. I hope you're drooling, Tom.

Walt, W2DU

2302. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 20:54:41 UTC
From: Greg Milligan <greg@--NO_SPAM--g1cpu.net>
Message-ID: <3f26df15@dnews0.news.legend.net.uk>
Source record: 111595

'Doc wrote:

>
>
> Greg,
> Aside from the electrical affects of twisting the
> twin lead you also have the benefit of making it less
> affected by wind. It 'flops' around less than if it
> wasn't twisted. Ever noticed how the 'tape' advertising
> thingys are really affected by wind if they are ~not~
> twisted?
> 'Doc

Thanks Doc. This is is all very useful information I will bear this all in mind when I am making up my next antenna. That's one good thing about this hobby there is always something new to learn.

Cheers

Greg G1CPU

2303. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 21:13:11 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <HrBVa.26705$Mc.2077921@newsread1.prod.itd.earthlink.net>
Source record: 111597

Traffie HexBeam - model HX5 covers all five bands in that range.

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:867k64uhje.fsf@skylane.kjsl.com...
> What is the smallest commercially made beam that covers 20 through 10?
>
> 73,
> -jav w6vms

2304. Re: Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 21:29:26 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307291329.1aa42eeb@posting.google.com>
Source record: 111598

Some comments in addition to Roy's...

First, if you're cancelling out the reactance by _paralleling_ +j2700 ohms, then the net impedance will be very high, NOT 7 ohms. My calculator says (7-j2700)||(0+j2700) is (1041428+j2700). You'll be wanting to put that +j2700 in series to see 7 ohms net. It's likely to upset any balance you were trying to maintain...

Next, if you feed a very low impedance such as 7 ohms with a line much less than a quarter wave long, you'll be better off to use a line with large conductors, even if it's low impdance. In fact, it might well be to your advantage to use 25-ohm coax, or balanced line made from wide, flat wires. That's because in such a short line, there will high currents everywhere along the line. Open-wire line with small conductors will have MORE loss than coax with larger conductors in this case.

Finally, I agree strongly with Roy about the loss in the tuned stub. Let's look at some numbers. I believe that Reg has a program that will tell you what to really expect at the antenna end of that "tuned stub". In any event, a 60-foot line will be close to 1/8 wave long, and cause a very significant impedance transformation. Looks like the 60 feet of 300-ohm tuned-stub line, if it has only 0.1dB matched-line-loss, will present a terrible 285+j2700 ohms at the antenna end, if you put a pure +j278 ohms at the "shack" end of it. (If you use different net electrical length and/or frequency than I did, expect small variations in the numbers.) Note how absolutely AWFUL that makes the antenna! If you can drop the stub line's macthed-line-loss to 0.01dB (good luck!), you still end up with 28 ohms in series with your desired +j2700 at the antenna end. That's still ten times the antenna's feedpoint radiation resistance.

I'd say you'll be much better off to put a fixed loading coil in the antenna (probably half-way out in each leg), and just use the best line you can to bring the feedpoint back to the shack, and tune it there, assuming you don't want to have a remote controlled antenna tuner.

Cheers,
Tom

"Alfred Lorona" <w6wqc@dslextreme.com> wrote in message
news:<bg69l2$kohm3$1@ID-49117.news.uni-berlin.de>...
> For us inner city people who would like to operate the 160 meter cw contest,
> a 160 meter dipole is out of the question. Even an 80 meter wire is not
> possible.

>
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> 3.11 dB total loss in a 50 foot long low-loss open wire feedline. If the
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>
> Use two parallel feedlines. Clip a 60 foot line onto the dipole. Connect a
> 30 microhenry high Q variable or roller coil at the station end and adjust
> it for +j2700 ohms at the antenna end. This acts as a variable stub. Voila!
> the reactance is cancelled out.
>
> Notwithstanding the lowered radiating efficiency of a short dipole or the
> match loss introduced by the antenna tuner, at least the line loss is
> minimized to an acceptable level.

2305. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 21:55:31 UTC
From: jgboyles@aol.com
Message-ID: <20030729175531.04786.00000053@mb-m13.aol.com>
Source record: 111599

>As to this particular project, I've received several interesting
>suggestions, some modifying the shape/size, some adding a tuner at the
>base. I'm probably gonna try both. I have a line on an extra tuner,
>which I'm gonna try to weatherproof and install (single band)

Dan, I homebrewed a remote controlled tuner that would work with your antenna, and you could change bands without ever leaving the shack. It uses a motor driven roller inductor and variable capacitor in an "L" network. I also have a relay switching scheme to reconfigure the "L" network. With this tuner at the base of a vertical or inv. L you can match a wide range of impedances. The L and C in this tuner are rated at legal limit.
Obviously the only thing standing in the way of you using something like this is obtaining the parts and building it. The inductor is surplus, about 30 uH. MFJ sells one that they use in their 1 kw tuner, around $65. The capacitor is a Ten Tec 500pf variable cap. kit, around $45. The drive motors came out of a kids battery operated car, 12vdc around .5 to 1 revs/sec that can be changed with the supply voltage. The hard part is coupling the motors to the L and C. The control cable is 100' of 8 cond.#20 shielded industrial control cable, about $45. Forward and reversing was done with relay logic.
This was not a weekend project, but it wasn't that bad either. If you want some more details, email.

73 Gary N4AST

2306. Re: Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 21:57:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f26eece_7@corp.newsgroups.com>
Source record: 111600

Tom Bruhns wrote:
> Some comments in addition to Roy's...
>
> First, if you're cancelling out the reactance by _paralleling_ +j2700
> ohms, then the net impedance will be very high, NOT 7 ohms. My
> calculator says (7-j2700)||(0+j2700) is (1041428+j2700). You'll be
> wanting to put that +j2700 in series to see 7 ohms net. It's likely
> to upset any balance you were trying to maintain...

Could a parallel reactance change the series impedance to 50-jX
and then +jX series reactance be added?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2307. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 22:15:50 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bg6rm5$v2v$1@slb3.atl.mindspring.net>
Source record: 111601

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:NWadnVkencTvTbiiXTWJhA@comcast.com...
> Mark,
>
> I bought the Hygain TH3Mk4, which is about the size of the A3. It is a
WHOLE
> lot better than the Junior. I think this guy is looking for stuff that is
> smaller yet (than the 33JR).
>
> Another indicator is that if the antenna won't take full power, it has
lossy
> traps. I finally burned out a trap on the 33JR by running a KW into it.
The
> comparison to the dipole was done before I burned out the trap - somebody
> once asked me...
>
> I don't know how much power you are running, but your A3 and a linear
would
> give you more ERP than any antenna improvement you could make. I had spent
> about 1/2 hour trying to work Ducie Island barefoot. Finally gave up and
> turned on the linear; the guy came back to me on my second call!
>
> Tam/WB2TT
>
>
Yeah....those EIMAC antennas really do work.

Dan/W4NTI

2308. Re: 50 Ohms "Real Resistive" impedance a Misnomer?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 22:24:39 UTC
From: tdonaly@aol.com
Message-ID: <20030729182439.24383.00000644@mb-m16.aol.com>
Source record: 111602

>
>Hi Tom,
>
>You've just given me the opening to rub it in a little. We took a three-week
>N European Cruise from Dover to LeHavre, Oslo, Copenhagen, Rostock, Gdansk,
>Tallinn, St. Petersburg, Helsinki, Stockholm and back to London. One of the
>best cruises we've had.
>
>Had a lot of fun with the GPS. It still worked while in Eastern Longitudes.
>I got Ian's phone number from Roy, but any time I was available to call him
>was an inappropriate time to call him, so I missed him. Roy emailed Reg to
>have him email me his address, and I sent him two emails asking for it, but
>he never answered. Was hoping to be able to meet them both while in England,
>but better luck next time. I hope you're drooling, Tom.
>
>Walt, W2DU
>

I certainly am, Walt.
73,
Tom Donaly, KA6RUH

2309. Re: Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 23:26:29 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <FK-cnYx_Et02n7qiXTWJjw@comcast.com>
Source record: 111603

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f26eece_7@corp.newsgroups.com...
>
> Could a parallel reactance change the series impedance to 50-jX
> and then +jX series reactance be added?
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
Kind of what I was thinking, but I thought of putting some reactance in
SERIES to make the real part of the PARALLEL impedance around 50 ohms. Then
tune with more parallel reactance. There might be a problem with the Q
getting too high, though.

Tam/WB2TT

2310. Re: Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 23:37:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vie1911hn3oka1@corp.supernews.com>
Source record: 111604

By golly, you've discovered the L network!

Roy Lewallen, W7EL

W5DXP wrote:
> Tom Bruhns wrote:
>
>> Some comments in addition to Roy's...
>>
>> First, if you're cancelling out the reactance by _paralleling_ +j2700
>> ohms, then the net impedance will be very high, NOT 7 ohms. My
>> calculator says (7-j2700)||(0+j2700) is (1041428+j2700). You'll be
>> wanting to put that +j2700 in series to see 7 ohms net. It's likely
>> to upset any balance you were trying to maintain...
>
>
> Could a parallel reactance change the series impedance to 50-jX
> and then +jX series reactance be added?

2311. Re: Will my G5RV work in a this V shape

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-29 23:41:26 UTC
From: Jim Leder <jleder@cinci.rr.com>
Message-ID: <bc1eivgn3hqo4i86tqtgv1cqa249uu0mmf@4ax.com>
Source record: 111605

I've had my G5RV up in a vee for the past 3 years, and it works well enough. The center is about 35 feet and the ends about 10 feet up. The twin lead part runs straight down the trunk of the tree the center is on. Never noticed any problems, but of course I have nothing to compare it to.

2312. Re: Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 00:35:32 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <VvqcndFK7a5Ej7qiXTWJhg@comcast.com>
Source record: 111606

I couldn't find it either, but www.glenmartin.com has Al towers.

Tam/WB2TT
"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:vibnui28tvh453@corp.supernews.com...
> I see a couple of sellers (AES and Texas Towers) have them but I cannot
seem
> to find them anywhere on the web. Are these dealers selling stock that
they
> have ?
>
> Doug N4IJ
>
>
>

2313. Re: SWL tuning an MFJ loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 00:37:05 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <RqEVa.8904$cF.3044@rwcrnsc53>
Source record: 111607

To answer your question, to tune the antenna to the band you are listening to, just play with the knobs until the reception is as good a you can get it. It is no more critical than that. Dick is right. The mfj loop, while it will work just fine, is a lot heavier and more expensive than you need. Home made loops will perform at least as well and, since they don't have to handle several hundred watts of power, can be made of lighter, more economical materials. Try this link. This is only one of many.
http://www2.hard-core-dx.com/nordicdx/antenna/hidden/carploop.html
"Dick Carroll;" <dixie@townsqr.com> wrote in message
news:bg6drrhnu0@208.207.71.159...
> You're going to a lot of unnecessary trouble and expense for receiving
> only.
> The ham radio transmitting loops are way larger and heavier than your
> needs
> require, and more difficult and troublesome to tune.
> Do a google search on recieving loops and go from there.
>
> Dick
>
>
> Hatfield wrote:
>
> > Please consider this a newbie question. Am an SWL, not a HAM, and am
> > considering an MFJ loop as the primary indoor SWL antenna, along with
> > an active antenna as a less potent secondary, the two connected via an
> > antenna switch.
> >
> > So lets say I read in a schedule that a certain frequency in the 49
> > meter band right now should have an interesting broadcast station on
> > the air, so I set my receiver digital readout to that freq, then
> > what's the procedure to tune the loop to that same exact frequency,
> > having no transmiter?
> >
> > Thanks for any help!
>

2314. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 00:57:41 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <9KEVa.8930$cF.2319@rwcrnsc53>
Source record: 111608
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

One of the technologies we have ignored in the BPL discussion is the use of coherent detection in the BPL circuitry. It provides very high common mode rejection. For example, high rejection to amateur and commercial HF/VHF transmissions, and high signal to noise integrity on the desired frequencies.

Coherent detection can very easily pull a signal out from under the noise level. For example, I have used systems where the signal can be 20 dB below the noise and still be recovered.

It may just be possible that interference TO the BPL system will not be severe, but interference FROM the BPL system ... well that has been discussed.

Deacon Dave, W1MCE
+ + +

Dave Platt wrote:

> In article <bg5un2$kilmh$3@ID-189073.news.uni-berlin.de>,
> Ryan, KC8PMX <kc8pmx@diamondcs.net> wrote:
>
>
>>Don't know if anyone has considered this, but if the BPL lines are going to
>>radiate intereference, would it not stand to reason that the lines would be
>>(not by choice) accepting outside RFI sources???
>
>
> Correct... and there have been some very pithy statements concerning
> this issue submitted to the FCC.
>
[SNIPPED}

2315. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 01:23:07 UTC
From: dplatt@radagast.org
Message-ID: <vie7fri744n43e@corp.supernews.com>
Source record: 111609
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

In article <9KEVa.8930$cF.2319@rwcrnsc53>,
Dave Shrader <david.shrader@comcast.net> wrote:

>One of the technologies we have ignored in the BPL discussion is the use
>of coherent detection in the BPL circuitry. It provides very high common
>mode rejection. For example, high rejection to amateur and commercial
>HF/VHF transmissions, and high signal to noise integrity on the desired
>frequencies.

My understanding is that the BPL systems being proposed, use various spread-spectrum techniques - I believe they're based on discrete-multitone / orthogonal frequency division multiplexing modulations, similar to what's used for most ADSL systems these days. There won't be a single carrier frequency... there will be dozens or hundreds in use in any given transmission.

That's how they can get a lot of bandwidth over the wires, provide some resistance to narrow-band interference, and still manage to keep the radiated energy in any given band-slice to within the FCC emissions limits.

>Coherent detection can very easily pull a signal out from under the
>noise level. For example, I have used systems where the signal can be 20
>dB below the noise and still be recovered.

That works nicely with narrowband signals, and at low data rates.

Doesn't seem to me that it will work at all well with wideband multi-carrier systems such as DMT, operating at high data rates.

Also, achieving high common-mode rejection is nice, but since power lines are a long way from being electrically-balanced at HF/VHF frequencies, there's going to be a whole howling lot of differential-mode signal on the lines any time a licensed transmitter keys up in the neighborhood.

Also, getting good common-mode rejection (for coherent detection or otherwise) requires that you have adequate dynamic range and resolution in your front-end electronics... if the interference saturates the receiver chain at any point _before_ the common-mode portion of the signal is eliminated, you're screwed. That's one of the problems one commenter discussed on the FCC page.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior

I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2316. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 02:10:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f272a1c_1@corp.newsgroups.com>
Source record: 111610
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

Dave Shrader wrote:
> Coherent detection can very easily pull a signal out from under the
> noise level. For example, I have used systems where the signal can be 20
> dB below the noise and still be recovered.

Let's bring back coherent CW.
--
73, Cecil http://www.qsl.net/w5dxp

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2317. Re: Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 02:10:43 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f272a43$1_1@corp.newsgroups.com>
Source record: 111611

Roy Lewallen wrote:
> By golly, you've discovered the L network!

Can I patent the idea?
--
73, Cecil http://www.qsl.net/w5dxp

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2318. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 02:36:41 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <8bGVa.10846$5b7.4351@lakeread01>
Source record: 111612

No brainer. The 2 element Quagi Mini Beam from TGM in Canada. Great antenna. Check out the solid 5 rating on eHam.

--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64

"Javier Henderson" <javier@KJSL.COM> wrote in message news:867k64uhje.fsf@skylane.kjsl.com...
> What is the smallest commercially made beam that covers 20 through 10?
>
> 73,
> -jav w6vms

2319. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 02:43:38 UTC
From: Ed Cregger <ecregger@hotmail.com>
Message-ID: <N7GVa.99$GN6.36@fe01.atl2.webusenet.com>
Source record: 111613

Is this the updated Mini Quad of Mini Products fame? That was a really good antenna for its size.

Ed, NM2K

"Craig Buck" <k4ia@cox.net> wrote in message
news:8bGVa.10846$5b7.4351@lakeread01...
> No brainer. The 2 element Quagi Mini Beam from TGM in Canada. Great
> antenna. Check out the solid 5 rating on eHam.
>
> --
> Radio K4ia
> Craig "Buck"
> Fredericksburg, VA USA
> FISTS 6702 cc 788 Diamond 64
>
> "Javier Henderson" <javier@KJSL.COM> wrote in message
> news:867k64uhje.fsf@skylane.kjsl.com...
> > What is the smallest commercially made beam that covers 20 through 10?
> >
> > 73,
> > -jav w6vms
>
>

2320. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 02:48:22 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <viechp8ufd4kd2@corp.supernews.com>
Source record: 111614
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

It's decades too late for coherent thought.

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f272a1c_1@corp.newsgroups.com...
> Dave Shrader wrote:
> > Coherent detection can very easily pull a signal out from under the
> > noise level. For example, I have used systems where the signal can be 20
> > dB below the noise and still be recovered.
>
> Let's bring back coherent CW.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2321. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 03:59:02 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <aoHVa.76443$3o3.5243544@bgtnsc05-news.ops.worldnet.att.net>
Source record: 111615

Art, are you sure you have a balun? Your description sounds like a tapped r-f transformer.

A balun, of course, is completely different from a transformer in that it is a "transmission line transformer" which is made of short transmission line sections instead of "windings."

If a balun is made with line sections of Zo, then the load must be an appropriate multiple of Zo and purely resistive for the balun to function properly.

Usually it is best to let a balun do the current steering and keep the outer braid of the coax "clean" and do the impedance matching elsewhere, as in a tuner.

Just a thought . . .

--
73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
news:85ed38d.0307290750.345d3abf@posting.google.com...
> Seems like a lot of hams with limited resources are still compelled
> to operate on many bands with just a long wire and a tuner.
> The wire is inexpensive but the tuners are not. Thus my present
> project.
> I was given a Palomar enginnering balun with 5 female connenection
> which by selection can match a antenna in steps from 5 ohms to over
> 450 ohms
> in a series of steps. I am presently rigging it up so that all
> steps can be switched thru remotely by a single motor. The switching
> arrangement
> is the main challenge since inexpensive means simple.
> Now I have not measured losses of the balun before hand because the
> switching
> challenge is what is driving me.
> Anybody have any thoughts about what I should expect from this
> balun other than knowing that it is not a tuner as is generally known
> since
> it does not have the ability to obtain the priceless 1:1 condition
> that so many desire?
> Regards

> Art

2322. Re: BPL pollution - file reply comments by August 6

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 04:25:43 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <bNHVa.9728$cF.4409@rwcrnsc53>
Source record: 111616
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.policy,rec.radio.shortwave

Hey, I am coherent.

CW
KC7NOD

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f272a1c_1@corp.newsgroups.com...
> Dave Shrader wrote:
> > Coherent detection can very easily pull a signal out from under the
> > noise level. For example, I have used systems where the signal can be 20
> > dB below the noise and still be recovered.
>
> Let's bring back coherent CW.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2323. Re: Resonant antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 05:06:22 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307292106.51368d11@posting.google.com>
Source record: 111617

jder8745@aol.com (JDer8745) wrote in message
news:<20030729122838.06926.00000921@mb-m06.aol.com>...
> No it doesn't need to be matched to the line!
>
> They often aren't.
>
> Jack K9CUN

Well, doesn't have to be, but if you are using coax , it should be to reduce feedline losses. Would be a concern the higher in freq you go. I'd never run a severe mismatch on VHF or higher unless the line was a low loss ladder line. But I rarely use ladder line on VHF... I do run mismatches on HF at times, usually on the warc bands using my 80/40/20 parallel dipoles fed with the tuner, but I am taking a hit with some feedline loss. Good ladder line is low enough loss, even with a large mismatch, you don't really have to be matched. 85% of the antennas I use are coax fed, so it's more important to me than it might be to others using ladder lines. MK

2324. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 05:13:03 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0307292113.2bd4597e@posting.google.com>
Source record: 111618

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307290750.345d3abf@posting.google.com>...
> Seems like a lot of hams with limited resources are still compelled
> to operate on many bands with just a long wire and a tuner.
> The wire is inexpensive but the tuners are not. Thus my present
> project.
> I was given a Palomar enginnering balun with 5 female connenection
> which by selection can match a antenna in steps from 5 ohms to over
> 450 ohms
> in a series of steps. I am presently rigging it up so that all
> steps can be switched thru remotely by a single motor. The switching
> arrangement

I'd rather wind a coil, "oatmeal tube carton"? and find a good
variable cap, and make a simple L network to feed a random wire. I'd
rather not use an apple to do a job that an orange should rightfully
have. :/ MK

2325. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 06:15:30 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <xcM24YDCK2J$EAbO@ifwtech.co.uk>
Source record: 111469

JGBOYLES wrote:
>>As to this particular project, I've received several interesting
>>suggestions, some modifying the shape/size, some adding a tuner at the
>>base. I'm probably gonna try both. I have a line on an extra tuner,
>>which I'm gonna try to weatherproof and install (single band)
>
>Dan, I homebrewed a remote controlled tuner that would work with your antenna,
>and you could change bands without ever leaving the shack. It uses a motor
>driven roller inductor and variable capacitor in an "L" network. I also have a
>relay switching scheme to reconfigure the "L" network. With this tuner at the
>base of a vertical or inv. L you can match a wide range of impedances. The L
>and C in this tuner are rated at legal limit.
> Obviously the only thing standing in the way of you using something like this
>is obtaining the parts and building it. The inductor is surplus, about 30 uH.
>MFJ sells one that they use in their 1 kw tuner, around $65. The capacitor is
>a Ten Tec 500pf variable cap. kit, around $45. The drive motors came out of a
>kids battery operated car, 12vdc around .5 to 1 revs/sec that can be changed
>with the supply voltage. The hard part is coupling the motors to the L and C.
>The control cable is 100' of 8 cond.#20 shielded industrial control cable,
>about $45. Forward and reversing was done with relay logic.
> This was not a weekend project, but it wasn't that bad either. If you want
>some more details, email.

A few more thoughts, in case they're useful to Dan or anyone else:

* It's sometimes possible to make an automatic two-band network. For
example, the same 33ft end-fed vertical can be matched as both a
half-wave on 20m *and* a quarter-wave on 40m, with one network and no
switching. The same goes for a 66-footer (vertical or inverted L) on
40/20, or a 130-footer on 160/80.

* Remember that the remote network doesn't have to give a perfect match.
If the SWR on the coax is below about 3, the extra losses won't be
significant (except in extreme cases) and you can always do the final
"flattening" to 50R in the shack.

* Instead of remote rotary switches, consider latching vacuum relays
which don't require power to hold them closed. There are surplus vac
relays at very reasonable prices at:
http://www.mgs4u.com/#president

* You can reduce the number of control lines by sending cunning
combinations of positive and negative DC, AC out from the control box,
and using steering/blocking/rectifying diodes at the remote end.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2326. Re: Variable stub

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 07:40:39 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307292340.64353164@posting.google.com>
Source record: 111470

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f26eece_7@corp.newsgroups.com>...
> Tom Bruhns wrote:
> > Some comments in addition to Roy's...
> >
> > First, if you're cancelling out the reactance by _paralleling_ +j2700
> > ohms, then the net impedance will be very high, NOT 7 ohms. My
> > calculator says (7-j2700)||(0+j2700) is (1041428+j2700). You'll be
> > wanting to put that +j2700 in series to see 7 ohms net. It's likely
> > to upset any balance you were trying to maintain...
>
> Could a parallel reactance change the series impedance to 50-jX
> and then +jX series reactance be added?

Yes, or as Tam suggests. For your network, +j1967 in parallel will
get you about 50+j7241, and small series capacitance will tune that
reactance out. But before you try it, put in a practical loss number
for the shunt inductance; it will change things significantly.
Re-adjusting for a coil Q of 100 instead of infinite changes the
series capacitance from 12pF to about 30pF (at 1.8MHz). Also, tuning
will be quite sharp and it may not be easy to find the proper match if
you have only an SWR bridge. Then the sharply-tuned network is at the
antenna, and not easily accessible.

I'd suggest comparison of this problem with what you get with loading
coils in the antenna elements, about half-way out.

Cheers,
Tom

2327. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 08:31:27 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vif0j286gedq07@corp.supernews.com>
Source record: 111471

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vhrnmu43m03lad@corp.supernews.com>...
>
>>Here's the problem with that transformer concept again. A field is not a
>>voltage. So you can't measure it with a voltmeter. You can convert the
>>fields to voltages and currents by use of a transducer -- an antenna --
>>then you can measure the voltage and current from the antenna with
>>ordinary meters.
>>
>
>
> I agree with you that the field is first converted by the antenna
> before it can be measured.
>
> But by definition, the E field is definitely related to voltage
> potential.

Well, yes, speed (meters per second) is related to distance. Force (Newtons) is related to work (Newton-meters). But speed isn't distance, and force isn't work. The mass of the Earth is related to its orbital velocity, and mass certainly isn't velocity. Worse yet, the impedance of free space isn't a measure of the same thing as the characteristic impedance of a transmission line. What I'm trying to illustrate is that because two things are related doesn't make them the same thing, or necessarily even close to the same thing.
>
> Hugh Skillings' Fund. of Electric Waves: "Voltage from point 1 to
> point 2 is the line integral of the electric field along any path from
> point 1 to point 2. This is the amount by which point 1 is at a
> higher potential than point 2."

Yes, that relates voltage and electric field. Don't overlook the bit about the path, though.

> Say PD = E^2/Z0 = H^2 * Z0. If you say the Power Density =
> V^2/(R*m^2), and the R=Zo, then these will cancel, giving you E =
> V/meter, which are the correct units. So here we are equating the
> impedance of free space will a resistive impedance or load.

No, all you're doing is showing that they have the same dimensions. It just doesn't seem to be sinking in that having the same dimensions doesn't make two quantities the same thing. I've tried with the example of torque and work, but that doesn't seem to be having any effect. Maybe someone else can present some other examples, and maybe, just maybe,

with enough examples the concept will sink in.

> Roy, what do you think 1uV/meter really means in terms of how you
> measure it? I mean, under what conditions must you have to measure
> this 1uV/meter?

As I mentioned before, it's usually measured with a short probe.

But electric field is actually defined in terms of the force on a charge. You'll find an explanation in any basic physics text, as well as many places on the Web. In Weidner and Sells, _Elementary Classical Physics_, Vol. 2, the authors define electric field E as F/q, or the force that would be exerted on a (sufficiently small) charge at the point at which the field is being measured. They explain that the units of electric field are newtons per coulomb which, it turns out, has the same dimensions as volts per meter. So to your argument that electric field is "related" to voltage, it's equally related to distance, force, and charge. You can, in fact, find a bundle of other equivalent products and quotients of units that are equivalent.
>
> I'm starting to think that what this really means, is that an
> exploring particle with a unit positive charge, when placed in a
> electric field of 1uV/meter, will experience a change of voltage
> potential of +1uV when it is moved directly towards an isotropic
> radiator ("the potential of a point in space is the work required to
> move to that point a unit positive charge, starting an infinite
> distance away...potential increases as one positive charge is moved
> closer to another positive charge" - Skilling).

Here we are again. Potential and voltage have the same dimensions, but aren't necessarily equal. And as far as I can tell, "voltage potential" is meaningless. To quote from Holt, _Electromagnetic Fields and Waves_, "When the electromagnetic fields are static, as we shall see, the voltage drop along a path equals the potential drop between the end points of the path. Furthermore, these quantities [voltage and electric potential] are also equal in *idealized* electric circuit diagrams, and they are approximately equal in physical circuits, provided voltmeter leads do not encircle appreciable time-changing magnetic flux." Pay particular attention to the last qualification. When a time-changing magnetic field is present, the voltage drop between two points depends on the path taken, while the potential drop is simply the difference in potential between the two points. So the voltage between two points in an electromagnetic field can be just about anything you'd like it to be.
>
>>Good thing, too. Otherwise we'd all get electrocuted by the Earth's 100
>>volt/meter field. (And that's on a day with no storm nearby.)
>>
>
>
> But that's a static field, so we don't have to worry about
> touching metallic objects that aren't grounded.

>
Sorry, I don't see how that's relevant. If field and voltage were the
same, we'd be in trouble, static or not.
>
>
>>> Perhaps the far-field measurements would require too sensitive a
>>>field-strength meter? Or maybe it's just more convenient to measure
>>>up close.
>>
>>No, it's far field measurements that are more common. One problem with
>>making near field measurements is that the near field varies all over
>>the map with the type of antenna and the exact spot where you're making
>>the measurement. And it's of no importance at all to anything very far
>>away at all. I've only seen near field probing done to locate the source
>>of a problem emission. Compliance measurements are usually done with
>>far-field techniques, in or at least at the fringes of the far field.
>>The "within the near field" measurements I'm referring to are HF
>>measurements done at distances that aren't firmly in the far field. (The
>>far field boundary depends on the nature of the radiating structure, and
>>is nebulous anyway.) The FCC addresses this issue for Part 15 somewhat
>>in section 15.31(f).
>
> I was going to ask you to define "far-field", and i thought maybe
> people defined this as a number of wave-legnths away, but if it's
> nebulous like a lot of RF topics, then i would certainly understand.

Actually, "far field" is often defined as a distance of 2L^2/lambda,
where L is the length of the antenna and lambda the wavelength, although
the authors generally admit to its being quite arbitrary (cf. Kraus,
Antennas). In Jordan and Balmain's _Electromagnetic Waves and
Radiating Systems_, they explain that the far field approximation is
valid at distances large compared to a wavelength and to the largest
dimension of the source. This is a somewhat conservative definition.
True far field wave characteristics occur only at an infinite distance
from a source, and how close you can come and still have the
characteristics be close enough to true far field depends on the
application as well as the antenna. So there's no strict definition. For
a lot of antennas and applications, field characteristics are close
enough to being far field at a distance of well under a wavelength. For
others, many wavelengths are required. Ian posted a good summary of
salient far field characteristics several days ago.

RF isn't any more nebulous than any other aspect of engineering.
Engineering is a practical discipline, so compromises and trade-offs are
universally necessary. Because we deal with real, physical objects and
are stuck with real measurements, the absolute precision of mathematics
and the pure sciences is never attainable. This is as true for using an
I-beam as it is for RF design. But the principles of RF are at least as
well known as the properties of I-beams. In fact, a good argument could
be made that RF is better known.

Roy Lewallen, W7EL

2328. tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 08:34:35 UTC
From: Ketalar <f5lcinospam@xanadu.fr>
Message-ID: <oprs37fxyh0kfuhq@news.wanadoo.fr>
Source record: 111472

Subject to restrictions and poor location, I can't install any antenna.
My window has an aluminium frame.
I considered to use it as a loop, but it is inherently shorted.
How would you feed that ?
Freq : FM BC band.
Window : abt 0.90 * 1.60 (metres)
Thanks by advance.

2329. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 08:36:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vif0sskgushoa6@corp.supernews.com>
Source record: 111473

Ian White, G3SEK wrote:
>
> A few more thoughts, in case they're useful to Dan or anyone else:
>
> * It's sometimes possible to make an automatic two-band network. For
> example, the same 33ft end-fed vertical can be matched as both a
> half-wave on 20m *and* a quarter-wave on 40m, with one network and no
> switching. The same goes for a 66-footer (vertical or inverted L) on
> 40/20, or a 130-footer on 160/80.
> . . .

Wes Hayward, W7ZOI, published either a QST article or a Technical Correspondence piece about doing this, many (10? 15?) years ago. A search of the QST CDs should turn it up. If I recall correctly, he concluded that either a two-band solution could always be found, or that he wasn't able to find a combination that he couldn't find a two-band solution for.

Just by observing this newsgroup, though, it seems like very few hams are any longer interested in matching an antenna to a feedline, preferring to buy ladder line and a tuner instead.

Roy Lewallen, W7EL

2330. My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 10:25:17 UTC
From: gil <gilpi@mindspring.com>
Message-ID: <bg86dh$mq3$1@slb4.atl.mindspring.net>
Source record: 111474

My antenna setup is nothing but a random wire going from a tree/ tuner/ rig in the basement about 60-70 feet total, I know it could be better but its all I can get away with for the moment. The ground is a rod thru the bottom of the sump where is always wet and I feel is good for RF, I hook the end of that to the back of the random wire tuner.
My concern is...the wire coming from window to tuner/rig is about 15 feet and due to placement I cant shorten it much more,
Should I use a coax from window to rig?
Or just leave it alone?
BTW I use low power about 30-40 watts CW and the setup seems to work fairly well on most bands..just concerned about loss and RF inside the shack.
Any input appreciated, and thanks for reading

gil

2331. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 12:07:39 UTC
From: "Alexander S. Wood" <alec_wood@dont.spam.me.ntlworld.com>
Message-ID: <9zOVa.1043$Kx1.11785@newsfep4-glfd.server.ntli.net>
Source record: 111475

I suppose you could gamma match it.

--
Alec Wood M1BNK
Teesside UK

Interested in Ham Radio....have a look at www.ukradioamateur.org

"Ketalar" <f5lcinospam@xanadu.fr> wrote in message
news:oprs37fxyh0kfuhq@news.wanadoo.fr...
> Subject to restrictions and poor location, I can't install any antenna.
> My window has an aluminium frame.
> I considered to use it as a loop, but it is inherently shorted.
> How would you feed that ?
> Freq : FM BC band.
> Window : abt 0.90 * 1.60 (metres)
> Thanks by advance.

2332. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 12:13:54 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <6EOVa.125659$lo.10689497@newsread2.prod.itd.earthlink.net>
Source record: 111476

Same setup I and many others used decades ago. One thing you might consider doing is to move the tuner to the wall where the antenna enters (sounds like you're in a basement?). You could adjust the tuner anywhere within earshot of the rig by using a noise bridge and listening to the noise while adjusting the tuner. The Palomar Tuner Tuner is made for just this type of operation. They can be had on the used market for about $60, or you can build your own. Don't use coax to connect between the tuner output and the antenna lead. You'll be effectively inserting a large capacitance to ground.

K8AC

"gil" <gilpi@mindspring.com> wrote in message
news:bg86dh$mq3$1@slb4.atl.mindspring.net...
> My antenna setup is nothing but a random wire going from a tree/ tuner/
rig
> in the basement about 60-70 feet total, I know it could be better but its
> all I can get away with for the moment. The ground is a rod thru the
bottom
> of the sump where is always wet and I feel is good for RF, I hook the end
of
> that to the back of the random wire tuner.
> My concern is...the wire coming from window to tuner/rig is about 15 feet
> and due to placement I cant shorten it much more,
> Should I use a coax from window to rig?
> Or just leave it alone?
> BTW I use low power about 30-40 watts CW and the setup seems to work
fairly
> well on most bands..just concerned about loss and RF inside the shack.
> Any input appreciated, and thanks for reading
>
> gil
>
>
>
>

2333. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 12:40:41 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F27BCC9.2A483E52@cwis.net>
Source record: 111477

Gil,
If it's working okay, and it seems to be from what you've said, then I probably wouldn't bother to change the way you're feeding your antenna. There are probably several things that you could do to improve your system, but 15 feet of coax isn't going to make a lot of difference. But, the nice thing about it is that you could make the change and see for your self if there's any big differences (which will depend on the particular frequency). As for the RF exposure, at 40 watts, it just won't make any difference at all.
'Doc

2334. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 12:50:50 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F27BF2A.28ECD4AD@cwis.net>
Source record: 111478

Ketalar,
Assuming that the antenna would be for receiving only,
just connect a single wire between the receiver and the
window frame. Don't worry about 'matching'. And a second
wire from the radio's ground connection to ground. Will
there be an improvement in reception? Beats me! But it
shouldn't be difficult to find out...
'Doc

2335. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 13:09:01 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0307300509.1588dd64@posting.google.com>
Source record: 111479

Yes George, I mispoke, you are correct
It says in very large letters on it " TRANSFORMER"
Since transformers are touted as being efficient
I was wondering how it would compare with
the normal tuner. Half of the challenge for me
was to come up with an inexpensive switching
system where the input was stationary while the rest
were switched thru and then repeated for the next
input e.t.c. With that being solved I look forward
to finishing and then playing with it
Regards
Art

"George, W5YR" <w5yr@att.net> wrote in message
news:<aoHVa.76443$3o3.5243544@bgtnsc05-news.ops.worldnet.att.net>...
> Art, are you sure you have a balun? Your description sounds like a tapped
> r-f transformer.
>
> A balun, of course, is completely different from a transformer in that it is
> a "transmission line transformer" which is made of short transmission line
> sections instead of "windings."
>
> If a balun is made with line sections of Zo, then the load must be an
> appropriate multiple of Zo and purely resistive for the balun to function
> properly.
>
> Usually it is best to let a balun do the current steering and keep the outer
> braid of the coax "clean" and do the impedance matching elsewhere, as in a
> tuner.
>
> Just a thought . . .
>
> --
> 73/72, George
> Amateur Radio W5YR - the Yellow Rose of Texas
> Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
> "In the 57th year and it just keeps getting better!"
> <mailto:w5yr@att.net>
>
>
>
>
>
> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message

> news:85ed38d.0307290750.345d3abf@posting.google.com...
> > Seems like a lot of hams with limited resources are still compelled
> > to operate on many bands with just a long wire and a tuner.
> > The wire is inexpensive but the tuners are not. Thus my present
> > project.
> > I was given a Palomar enginnering balun with 5 female connenection
> > which by selection can match a antenna in steps from 5 ohms to over
> > 450 ohms
> > in a series of steps. I am presently rigging it up so that all
> > steps can be switched thru remotely by a single motor. The switching
> > arrangement
> > is the main challenge since inexpensive means simple.
> > Now I have not measured losses of the balun before hand because the
> > switching
> > challenge is what is driving me.
> > Anybody have any thoughts about what I should expect from this
> > balun other than knowing that it is not a tuner as is generally known
> > since
> > it does not have the ability to obtain the priceless 1:1 condition
> > that so many desire?
> > Regards
> > Art

2336. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 14:22:27 UTC
From: jgboyles@aol.com
Message-ID: <20030730102227.28334.00001042@mb-m24.aol.com>
Source record: 111480

>* You can reduce the number of control lines by sending cunning
>combinations of positive and negative DC, AC out from the control box,
>and using steering/blocking/rectifying diodes at the remote end.

A few years back, I reduced the number of control lines to zero with a wireless link. I used a tx/rx made for use as a garage door opener or some such remote control application. These were extremely simple devices that operate somewhere above 300 mhz. I boosted the effective range to over 30 meters by using a little 4 element quad on the rx. The transmitted signal was time division multiplex like used in any multi channel remote control. The tuner drive motors and electronics were powered by a 12 vdc gel cell that I kept charged by a rather large solar cell. You could also put your control signals on your coax, but I have never tried it.
Also used the garage door tx/rx in a remote reading field strength meter.
73 Gary N4AST

2337. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 15:57:43 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <4nmfiv8086n9u0uv59vs8d13ahs4l56a4o@4ax.com>
Source record: 111481

On Wed, 30 Jul 2003 07:15:30 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

Excellent suggestions, Ian...I sure like the K.I.S.S. method! Gonna
try the dual band approach with a tuner and mybe try some stubs. (I
also liked the homebrew remote tuner using the kids' car
motors....perhaps one day when my projects to-do list drops to the
single digits!)
73
dan (k0dan)
>
>A few more thoughts, in case they're useful to Dan or anyone else:
>
>* It's sometimes possible to make an automatic two-band network. For
>example, the same 33ft end-fed vertical can be matched as both a
>half-wave on 20m *and* a quarter-wave on 40m, with one network and no
>switching. The same goes for a 66-footer (vertical or inverted L) on
>40/20, or a 130-footer on 160/80.
>
>* Remember that the remote network doesn't have to give a perfect match.
>If the SWR on the coax is below about 3, the extra losses won't be
>significant (except in extreme cases) and you can always do the final
>"flattening" to 50R in the shack.
>
>* Instead of remote rotary switches, consider latching vacuum relays
>which don't require power to hold them closed. There are surplus vac
>relays at very reasonable prices at:
>http://www.mgs4u.com/#president
>
>* You can reduce the number of control lines by sending cunning
>combinations of positive and negative DC, AC out from the control box,
>and using steering/blocking/rectifying diodes at the remote end.

2338. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 16:35:51 UTC
From: ketalar <ketalarnospam@xanadu.fr>
Message-ID: <oprs4tp1uub8v01a@news.wanadoo.fr>
Source record: 111482

Already tried : poor.

Le Wed, 30 Jul 2003 07:50:50 -0500, 'Doc <w5lz@cwis.net> a ï¿œcrit:

>
>
> Ketalar,
> Assuming that the antenna would be for receiving only,
> just connect a single wire between the receiver and the window frame. Don't worry about 'matching'. And a second
> wire from the radio's ground connection to ground. Will
> there be an improvement in reception? Beats me! But it
> shouldn't be difficult to find out...
> 'Doc
>

--
<< A personne, sauf ï¿œ ceux qui y prendront plaisir >> (Franz Schubert, 1797-1828)

2339. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 16:38:09 UTC
From: ketalar <ketalarnospam@xanadu.fr>
Message-ID: <oprs4ttvdcb8v01a@news.wanadoo.fr>
Source record: 111483

TNX fer the answer. That's what I was looking for, but I'm not an expert abt Gamma-matching : how should I proceed ?

Le Wed, 30 Jul 2003 13:07:39 +0100, Alexander S. Wood <alec_wood@dont.spam.me.ntlworld.com> a ï¿œcrit:

> I suppose you could gamma match it.
>

--
<< A personne, sauf ï¿œ ceux qui y prendront plaisir >> (Franz Schubert, 1797-1828)

2340. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 16:55:24 UTC
From: gmz79@aol.comnospam
Message-ID: <20030730125524.20076.00000740@mb-m29.aol.com>
Source record: 111484

>Subject to restrictions and poor location, I can't install any antenna.
>My window has an aluminium frame.
>I considered to use it as a loop, but it is inherently shorted.
>How would you feed that ?
>Freq : FM BC band.
>Window : abt 0.90 * 1.60 (metres)
>Thanks by adv

.....
Try connecting your leads (both) to various points on the window,you might get lucky. I was able to achieve resonance with the windscreen
frame on a Sunbeam Tiger I restored. Luckily the spacing of the mounting studs were close to the right tap points.
Works better the the usual 1/4 wave whip!
KC*VIF
Greg Z
to thine own sound be true

2341. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 17:19:22 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307300919.1d906b5@posting.google.com>
Source record: 111485

Roy Lewallen <w7el@eznec.com> wrote in message news:<vif0j286gedq07@corp.supernews.com>...
...
> No, all you're doing is showing that they have the same dimensions. It
> just doesn't seem to be sinking in that having the same dimensions
> doesn't make two quantities the same thing. I've tried with the example
> of torque and work, but that doesn't seem to be having any effect. Maybe
> someone else can present some other examples, and maybe, just maybe,
> with enough examples the concept will sink in.

I'd think the best examples come from dynamic systems, because the EM
wave is dynamic. In fact, you can define mechanical impedances, too.
You can have a long row of masses connected by springs, for example,
and spring force may be analogous to current, and mass displacement to
voltage. In a sound wave, the mass is the mass of the air (or other)
molecules, and the springs are the intermolecular forces (or elastic
collisions in air, if you will). Generally to propagate a wave,
you'll find you have two "state variables" whose states are
interrelated by differential equations, and the (a) solution to those
equations results in the description of the wave. The propagating
medium often has very low loss, and is propagating much higher power
levels than it's dissipating. So the (uV/meter)^2/377 has the units
of power, but that's not a power that's dissipated as it would be in a
377 ohm resistor...it's the power (at that frequency, or in that band)
per square meter passing that point in freespace.

The same is true, for example, of power going down a transmission
line, though the transmission line is much more dissipative than
freespace (unless it's made with superconductors). It's also true of
power transmitted by a driveshaft in a car: the torque you apply to
the input end twists the shaft, and that twist propagates down the
shaft. Yes, you can have reflections at the far end because of
impedance mismatches too.

I think a related concept is the difference between static (potential)
and dynamic energy. Both have units of energy, but they are rather
different things.

...

> Here we are again. Potential and voltage have the same dimensions, but
> aren't necessarily equal. And as far as I can tell, "voltage potential"
> is meaningless. To quote from Holt, _Electromagnetic Fields and Waves_,
> "When the electromagnetic fields are static, as we shall see, the
> voltage drop along a path equals the potential drop between the end
> points of the path. Furthermore, these quantities [voltage and electric
> potential] are also equal in *idealized* electric circuit diagrams, and

> they are approximately equal in physical circuits, provided voltmeter
> leads do not encircle appreciable time-changing magnetic flux." Pay
> particular attention to the last qualification. When a time-changing
> magnetic field is present, the voltage drop between two points depends
> on the path taken, while the potential drop is simply the difference in
> potential between the two points. So the voltage between two points in
> an electromagnetic field can be just about anything you'd like it to be.

It took me a long time to properly internalize that. It's not just time-varying magnetic fields that cause trouble, either. A temperature gradient along the voltmeter leads can cause an EMF also, for example. A reminder: Kirchoff's voltage law is NOT that the sum of voltage drops around a closed loop is zero, but rather that the sum of voltage drops equals the sum of the EMFs in the loop. One such EMF is because of any time-varying magnetic field enclosed by the loop (and therefore may be different if you move the leads), but others are chemical and thermal (actually two distinct thermal types). Both EMF (electromotive force) and voltage drop have the units of "volts", but they are not the same thing. I do like the statement in terms of a closed loop much better than thinking about it between two points, because Faraday's law says only that there is an EMF in any closed loop enclosing a time-varying magnetic field, and that EMF is proportional to the rate of change of the magnetic field. It does not say that the EMF is uniformly distributed, nor that it is in any one place, only that it exists. And Kirchoff's voltage law gives us a way to apply that EMF (and any other EMFs which may also be in the same loop because of other things happening) and understand why we see voltage drops around the loop. Ohm's law tells us a lot about how the drops will be distributed, according to the resistances in each portion of the path. Faraday's law applies whether there is a conductor in the loop or not. If there is a conductor the whole way around, the EMF will drive a current in it--and that current will create a magnetic field to oppose the one creating the EMF.

Cheers,
Tom

2342. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 18:05:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vig27n2sr4sl20@corp.supernews.com>
Source record: 111486

I'm surprised no one has suggested a coupling loop. Small loops are often fed via a smaller loop placed inside the main loop, typically off center. The impedance match can be effected by adjusting the size and number of turns of the smaller loop. I believe one of Reg's programs helps with the design of these.

Roy Lewallen, W7EL

2343. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 18:25:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3F280DAD.2020208@eznec.com>
Source record: 111487

Tom Bruhns pointed out in an email that the statement quoted below isn't a very good example. Because the mass of the Sun is so much greater than that of the Earth, the Earth's orbital velocity isn't significantly affected by the mass of the Earth.

So I'll restate that as follows:

The distance between the Earth and the Sun and the orbital velocity of the Earth are related, but distance and velocity aren't the same thing.

Or,

The mass of the Sun and the orbital velocity of the Earth are related, but the two aren't the same thing.

You get the drift.

Thanks, Tom, for pointing this out.

Roy Lewallen, W7EL

Roy Lewallen wrote:
>. . .
> The mass of the Earth is related to its orbital
> velocity, and mass certainly isn't velocity. . .

2344. WTB-COBRA 66 LTD

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 18:49:56 UTC
From: wc3590@aol.com
Message-ID: <20030730144956.07566.00000607@mb-m14.aol.com>
Source record: 111488

I'M LOOKING TO BUY A COBRA 66 LTD CB RADIO

EMAIL ME IF YOU CAN HELP ME OUT

THANKS IN ADVANCE

2345. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 18:59:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2816a5_3@corp.newsgroups.com>
Source record: 111489

Art Unwin KB9MZ wrote:
> Since transformers are touted as being efficient
> I was wondering how it would compare with
> the normal tuner.

Who touts transformers as being efficient? And efficient
compared to what?
--
73, Cecil http://www.qsl.net/w5dxp

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2346. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 19:03:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f281797$1_3@corp.newsgroups.com>
Source record: 111490

JGBOYLES wrote:
> A few years back, I reduced the number of control lines to zero with a wireless
> link.

When I was at Texas A&M, I did a Mother's Day experiment where I had six
switches, seven wires, and six lamps. Each switch would light a different
individual lamp. I could disconnect the wires one by one and still light
the correct lamps. When it got down to lighting the lamps over one wire,
you would be surprised at how many engineering students couldn't figure
out how it was done. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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2347. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 19:29:10 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <ur+BVEBGyBK$EAy3@ifwtech.co.uk>
Source record: 111491

Roy Lewallen wrote:
>Ian White, G3SEK wrote:
>> A few more thoughts, in case they're useful to Dan or anyone else:
>> * It's sometimes possible to make an automatic two-band network. For
>>example, the same 33ft end-fed vertical can be matched as both a
>>half-wave on 20m *and* a quarter-wave on 40m, with one network and no
>>switching. The same goes for a 66-footer (vertical or inverted L) on
>>40/20, or a 130-footer on 160/80.
>> . . .
>
>Wes Hayward, W7ZOI, published either a QST article or a Technical
>Correspondence piece about doing this, many (10? 15?) years ago. A
>search of the QST CDs should turn it up.

Yes, that's the one.

I possibly have a photocopy somewhere, but don't recall seeing these extra details, which Roy may have hard directly from Wes:

> If I recall correctly, he concluded that either a two-band solution
>could always be found, or that he wasn't able to find a combination
>that he couldn't find a two-band solution for.
>

>Just by observing this newsgroup, though, it seems like very few hams
>are any longer interested in matching an antenna to a feedline,
>preferring to buy ladder line and a tuner instead.

If anybody's interested in this "two bands, one coax, no switches" solution, I'll try to put a PDF together over the weekend (it isn't a good subject for ASCII art). It also struck me that this may be a good subject for an Excel spreadsheet, or one of Reg's programs.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2348. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 19:41:09 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <pbVVa.20803$Ho3.4017@sccrnsc03>
Source record: 111492

Define 'Efficient' before you engage in this discussion.

"When I was a youngster, back in the olden golden days, transformer efficiencies exceeded 98%, but that was for 60 Cycle [olden days language] power distribution systems."

<H U G E G R I N >

Deacon Dave, W1MCE
+ + +

W5DXP wrote:

> Art Unwin KB9MZ wrote:
>
>> Since transformers are touted as being efficient
>> I was wondering how it would compare with
>> the normal tuner.
>
>
> Who touts transformers as being efficient? And efficient
> compared to what?

2349. Which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 19:56:23 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <HpVVa.110960$R92.82106@news2.central.cox.net>
Source record: 111493

I'm planning on putting up a 130' inverted V antenna at my new QTH. I will be operating QRP with my Yaesu FT-817 and LDG Z-11 autotuner. The top of the V will be about 40' in the air and the ends about 12' in the air. I will be using 16 ga wire for the antenna. I plan to operate SSB/CW/PSK31 mostly on 20 meters with some nighttime activity on SSB/CW 160 & 80 meters.

My question is this:

Should I feed it with 300 ohm HD twinlead, 450 ohm ladder line with or without a Bal-Un or rg58 coax with or without a Balun?

Sorry if this is a dumb question but I wanted to pick the brains of the experts. My thinking is to have the antenna
fed directly from rg58 coax (no Balun) and let the tuner do the work.

Feedline radiation causing RFI/TVI is not a real concern at 5w, right? The '817 seems to be an acceptionaly clean transmitter - my TS200X and TS530S cause RFI in telephones and PC speakers even when turned down to 5 watts - my FT-817 causes no TVI/RFI at all!

72's de Ken KG0WX

2350. Re: Small beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 21:57:40 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <zbXVa.11003$5b7.5650@lakeread01>
Source record: 111494

I believe it is but the old one was during my QRT time so I am not familiar with it.

--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64

2351. Re: Which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 22:05:15 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <FiXVa.11004$5b7.6757@lakeread01>
Source record: 111495

That antenna models with a 40:1 SWR on 20 meters. I think you better use ladderline or the losses in coax will be outta sight.

I like ladder line to a 1:1 balun to a short piece of coax to the antenna tuner. Should work 80-10 nicely.

--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64
"Ken Bessler" <kg0wx@yahoo.com> wrote in message
news:HpVVa.110960$R92.82106@news2.central.cox.net...
> I'm planning on putting up a 130' inverted V antenna at my new QTH. I will
> be operating QRP with my Yaesu FT-817 and LDG Z-11 autotuner. The top of
the
> V will be about 40' in the air and the ends about 12' in the air. I will
be
> using 16 ga wire for the antenna. I plan to operate SSB/CW/PSK31 mostly on
> 20 meters with some nighttime activity on SSB/CW 160 & 80 meters.
>
> My question is this:
>
> Should I feed it with 300 ohm HD twinlead, 450 ohm ladder line with or
> without a Bal-Un or rg58 coax with or without a Balun?
>
> Sorry if this is a dumb question but I wanted to pick the brains of the
> experts. My thinking is to have the antenna
> fed directly from rg58 coax (no Balun) and let the tuner do the work.
>
> Feedline radiation causing RFI/TVI is not a real concern at 5w, right? The
> '817 seems to be an acceptionaly clean transmitter - my TS200X and TS530S
> cause RFI in telephones and PC speakers even when turned down to 5 watts -
> my FT-817 causes no TVI/RFI at all!
>
> 72's de Ken KG0WX
>
>

2352. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 22:14:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f28447d$1_7@corp.newsgroups.com>
Source record: 111496

Dave Shrader wrote:
> Define 'Efficient' before you engage in this discussion.

OK, let's say as efficient as a transmission line transformer
over an entire range of frequencies. I don't think you will
find a normal transformer that is as efficient as a transmission
line transformer over the entire HF frequency range. But I could
be wrong.
--
73, Cecil http://www.qsl.net/w5dxp

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2353. Re: Which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 22:18:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f28456b_7@corp.newsgroups.com>
Source record: 111497

Ken Bessler wrote:
> Should I feed it with 300 ohm HD twinlead, 450 ohm ladder line with or
> without a Bal-Un or rg58 coax with or without a Balun?

If you want to approach the limits of efficiency, feed it with open-wire line, usually around a Z0 of 600 ohms. Feedline length will be important. IMO, use a 1:1 balun/choke at the tuner output.
--
73, Cecil http://www.qsl.net/w5dxp

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2354. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 22:46:18 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307301446.791bc1d1@posting.google.com>
Source record: 111498

Roy Lewallen <w7el@eznec.com> wrote in message news:<vif0j286gedq07@corp.supernews.com>...
> >
> > But by definition, the E field is definitely related to voltage
> > potential.
>
> Well, yes, speed (meters per second) is related to distance. Force
> (Newtons) is related to work (Newton-meters). But speed isn't distance,
> and force isn't work. The mass of the Earth is related to its orbital
> velocity, and mass certainly isn't velocity. Worse yet, the impedance of
> free space isn't a measure of the same thing as the characteristic
> impedance of a transmission line. What I'm trying to illustrate is that
> because two things are related doesn't make them the same thing, or
> necessarily even close to the same thing.

I never said that the E field IS a voltage, only that they are
related, and that you can measure the strength of the E field by
measuring voltages, which is what you really do with a field strength
meter anyways.

>
> > Say PD = E^2/Z0 = H^2 * Z0. If you say the Power Density =
> > V^2/(R*m^2), and the R=Zo, then these will cancel, giving you E =
> > V/meter, which are the correct units. So here we are equating the
> > impedance of free space will a resistive impedance or load.
>
> No, all you're doing is showing that they have the same dimensions. It
> just doesn't seem to be sinking in that having the same dimensions
> doesn't make two quantities the same thing. I've tried with the example
> of torque and work, but that doesn't seem to be having any effect. Maybe
> someone else can present some other examples, and maybe, just maybe,
> with enough examples the concept will sink in.
>

Are you saying that Newton*Meters are different depending on the
situation? I don't think so. A Newton is a Newton. A meter should
always be a meter. And an Ohm should always be an Ohm.

I'm not saying that the impedance of free space is relating
voltage to current, because there is no current flow in free space.
But why do they use the same units (Ohms) to describe the relation of
the E field to the H field?

Hugh Skilling - "Intrinsic impedance is somewhat analogous to the
characteristic impedance of a transmission line. It has the
dimensions of Ohms, for the E is Volts/Meter and H is Amperes/meter."

Perhaps I'm asking the wrong NG.

> But electric field is actually defined in terms of the force on a
> charge. You'll find an explanation in any basic physics text, as well as
> many places on the Web. In Weidner and Sells, _Elementary Classical
> Physics_, Vol. 2, the authors define electric field E as F/q, or the
> force that would be exerted on a (sufficiently small) charge at the
> point at which the field is being measured. They explain that the units
> of electric field are newtons per coulomb which, it turns out, has the
> same dimensions as volts per meter. So to your argument that electric
> field is "related" to voltage, it's equally related to distance, force,
> and charge. You can, in fact, find a bundle of other equivalent products
> and quotients of units that are equivalent.

The E field is certainly related to all these things. If you could somehow accurately measure the repelling force on a unit positive charge, that a static positive charge exerts upon it, then you would know what the E field is in Newtons/Coulomb, which would also be the Volts/meter.

If you could also measure the voltage potential of this unit positive charge in the same positive field, at two different points that are 1 meter apart (normal to the gradient of the E field), then you should get the same answer as above.

This second situation is what i'm asking about when i say where would the 1uV be measured. But in the real world, it would seem that most field strength meters have amplifiers (LNAs) either before or after rectification by Schottky diodes.

A field strength meter seems to relate the received power with the field strength, but not actually measuring the uV/meter directly. Certainly they must calibrate these instruments with a known amount of power into an antenna of known characteristics, in an anechoic chamber, at a fixed distance away, etc.

>
> Here we are again. Potential and voltage have the same dimensions, but
> aren't necessarily equal. And as far as I can tell, "voltage potential"
> is meaningless. To quote from Holt, _Electromagnetic Fields and Waves_,
> "When the electromagnetic fields are static, as we shall see, the
> voltage drop along a path equals the potential drop between the end
> points of the path. Furthermore, these quantities [voltage and electric
> potential] are also equal in *idealized* electric circuit diagrams, and
> they are approximately equal in physical circuits, provided voltmeter
> leads do not encircle appreciable time-changing magnetic flux." Pay
> particular attention to the last qualification. When a time-changing
> magnetic field is present, the voltage drop between two points depends
> on the path taken, while the potential drop is simply the difference in
> potential between the two points. So the voltage between two points in
> an electromagnetic field can be just about anything you'd like it to be.

I was simplifying the situation with the static E field case, but
the change of 1uV for every meter moved normal to the gradient of the
field can also apply to the AC situation, except that the +/- 1uV
would apply the RMS values.

>
> RF isn't any more nebulous than any other aspect of engineering.
> Engineering is a practical discipline, so compromises and trade-offs are
> universally necessary. Because we deal with real, physical objects and
> are stuck with real measurements, the absolute precision of mathematics
> and the pure sciences is never attainable. This is as true for using an
> I-beam as it is for RF design. But the principles of RF are at least as
> well known as the properties of I-beams. In fact, a good argument could
> be made that RF is better known.
>
> Roy Lewallen, W7EL

You wrote: "(The far field boundary depends on the nature of the
radiating structure, and is nebulous anyway.)"

So i used the word "nebulous" after you did.

You're talking to a B.S. in Mechanical, so i know a bit about
I-beams, but i've done only RF since college, so I'm more of a EE now.

Among the Top Ten blunders of my life: not doing Electrical.

Slick

2355. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 23:05:43 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307301505.df79f5b@posting.google.com>
Source record: 111499

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0307300919.1d906b5@posting.google.com>...
>
> I'd think the best examples come from dynamic systems, because the EM
> wave is dynamic. In fact, you can define mechanical impedances, too.
> You can have a long row of masses connected by springs, for example,
> and spring force may be analogous to current, and mass displacement to
> voltage.

Consider a mass on the end of a spring compared to an L-C tank
circuit.

The mechanical equivalent of inductive impedance would be simply
the mass. That is, the resistance to the change of current compared
to the inertia of a massive body.

The spring force would be analogous to the voltage charge in a
capacitor, not the current.

The velocity of the mass is analogous to the current in the tank
circuit.

The displacement of the mass is analogous to the total stored
charge in the capacitor. I.E., max displacement corresponds to max
charge storage in the cap, with the corresponding max voltage and max
force from the spring (fully stretched or compressed).

Slick

2356. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-30 23:44:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vigm26krbtjj53@corp.supernews.com>
Source record: 111500

I think I've done about as much as I can here, and the time spent is getting out of proportion to the communication achieved. It's time for someone else to take a crack at it, or for it to be taken to another newsgroup.

Roy Lewallen, W7EL

2357. Re: INVERTED-L QUESTIONS

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 00:48:09 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <sjpgivgshhighldlc4pofom4fn49e9tc09@4ax.com>
Source record: 111501

>
>If anybody's interested in this "two bands, one coax, no switches"
>solution, I'll try to put a PDF together over the weekend (it isn't a
>good subject for ASCII art). It also struck me that this may be a good
>subject for an Excel spreadsheet, or one of Reg's programs.

Ian, count me in. While "all band" operation is always desirable, when
you get right down to it 160/80 or 80/40 are the gaps I'm really
trying to fill. And while many of the other solutions proposed are
innovative and tempting to perform, the "keep it simple" approach has
very strong appeal.
Tnx & 73
Dan (K0DAN)

2358. Re: Which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 00:57:04 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <ubqcnWAJVu_79LWiU-KYvg@comcast.com>
Source record: 111502

You are really making life hard on yourself. For 20 meters put up a 20 meter dipole, ditch the tuner and feed if with minimum of RG8X coax. Worry about the other bands later. It is short enough, that the whole thing will be up at least 35 feet.

Tam/WB2TT
"Ken Bessler" <kg0wx@yahoo.com> wrote in message
news:HpVVa.110960$R92.82106@news2.central.cox.net...
> I'm planning on putting up a 130' inverted V antenna at my new QTH. I will
> be operating QRP with my Yaesu FT-817 and LDG Z-11 autotuner. The top of
the
> V will be about 40' in the air and the ends about 12' in the air. I will
be
> using 16 ga wire for the antenna. I plan to operate SSB/CW/PSK31 mostly on
> 20 meters with some nighttime activity on SSB/CW 160 & 80 meters.
>
> My question is this:
>
> Should I feed it with 300 ohm HD twinlead, 450 ohm ladder line with or
> without a Bal-Un or rg58 coax with or without a Balun?
>
> Sorry if this is a dumb question but I wanted to pick the brains of the
> experts. My thinking is to have the antenna
> fed directly from rg58 coax (no Balun) and let the tuner do the work.
>
> Feedline radiation causing RFI/TVI is not a real concern at 5w, right? The
> '817 seems to be an acceptionaly clean transmitter - my TS200X and TS530S
> cause RFI in telephones and PC speakers even when turned down to 5 watts -
> my FT-817 causes no TVI/RFI at all!
>
> 72's de Ken KG0WX
>
>

2359. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 01:21:15 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <fa_Va.15385$cF.6547@rwcrnsc53>
Source record: 111503

Cecil, if I go back in time a long way, to the days of transformer design, I recall that core loss increased as an exponential of frequency. The exponential was greater than '1.2' and less than '2.0'.

Now, magnetic materials have changed, since the invention of the wheel, but I still suspect that losses in magnetic materials are exponential, even in new materials.

So, in a transformer I would expect core loss to increase exponentially from 1.8 to 29.7 MHz.

In a balun, well I don't know!

Shortly after the invention of the wheel I came into the ownership of a B&W air wound balun rated at 250 watts continuous that I used for over 35 years. I dumped it as part of the move from Massachusetts to New Hampshire. That was DUMB! But, using air instead of magnetic material certainly minimized losses <grin>.

Back to the Modern Age. How efficient is a transmission line transformer? [TBD %] Can you quantify a suitable number or will it remain a qualitative statement?

Deacon Dave, W1MCE
+ + +

W5DXP wrote:
> Dave Shrader wrote:
>
>> Define 'Efficient' before you engage in this discussion.
>
>
> OK, let's say as efficient as a transmission line transformer
> over an entire range of frequencies. I don't think you will
> find a normal transformer that is as efficient as a transmission
> line transformer over the entire HF frequency range. But I could
> be wrong.

2360. RF Problems

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 01:39:02 UTC
From: David Carrick <k8mam@wideopenwest.com>
Message-ID: <oesgivc7c9l2fh0pojcke5h71o57jnoi35@4ax.com>
Source record: 111504

Using an FT100D with ATAS antenna on a boat. Antenna mounted on bow
rail . Tried copper plate connected with braid to base of antenna
mount for ground. Don't have in hull ground plane.
Problems with RF in audio reported as sounding garbled. Reducing power
level helped some.
Will Line Isolator form Raio Workls be of use? It was suggested.
How about some radials from antenna base laid out along deck?
Is only good solution a copper ground plane in the bilge connected
with coopper foil to the antenna base?
Any advice appreciated. Thanks

2361. Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 02:52:15 UTC
From: DOUGLAS SNOWDEN <snowden@peoplepc.com>
Message-ID: <vij63l3a0ldr9a@corp.supernews.com>
Source record: 111423

It looks to me like most irrigation pipe sellers are out West.
Anyone know where a seller on the East coast is? It would
be nice to find one near me in Richmond VA that has used pipe.

Doug

N4IJ

2362. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 03:09:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f28898c_3@corp.newsgroups.com>
Source record: 111505

Dave Shrader wrote:
> Back to the Modern Age. How efficient is a transmission line
> transformer? [TBD %] Can you quantify a suitable number or will it
> remain a qualitative statement?

Looking at some of the graphs in Jerry Sevick's book, _Transmission_
Line_Transformers_, it looks like about .05 dB maximum loss from 3
to 30 MHz. Note that figure is for perfectly matched resistive loads.

A transmission line transformer carries a high flux density for common
mode but not for differential mode. An ordinary transformer carries
a high flux density for differential mode. That's got to make a
difference.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2363. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 04:05:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n62hiv857jg90avcj9us741lhokvm1sl5u@4ax.com>
Source record: 111506

On Thu, 31 Jul 2003 01:21:15 GMT, Dave Shrader
<david.shrader@comcast.net> wrote:
>Back to the Modern Age. How efficient is a transmission line
>transformer? [TBD %] Can you quantify a suitable number or will it
>remain a qualitative statement?

Hi Dave,

Jerry Sevick offers a multitude of designs, all specified for loss over frequency. One such example illustrated in Fig. 11-6 shows a 50:12.5 Ohm with an insertion loss of around 0.1dB or less over the interval of 100KHz to 30MHz. And this is not the best example of low loss.

73's
Richard Clark, KB7QHC

2364. Very detailed information on BPL, PLC and PLT

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 04:33:35 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0307302033.410a8d0c@posting.google.com>
Source record: 111508
Cross-posted to: rec.radio.amateur.policy,rec.radio.amateur.antenna,rec.radio.shortwave

Ce-mag.com is the world's foremost on-line resource for international developments in regulatory compliance for electronics engineers.

In the latest issue BPL, PLC and PLT covered in very great detail from the regulatory stand point.

http://www.ce-mag.com/archive/03/ARG/hansen1.html

http://www.ce-mag.com/archive/03/ARG/hansen2.html

Brief excerpt (Conclusion)
"PLC technology, in principle, is potentially attractive, if it were to become compatible with existing telecom technologies. PLC technology is still premature in terms of EMI prevention. PLC has little to offer over the competitors and certainly does not justify more EMI.

Standards will evolve relatively slowly. The requirement of the EMC Directive with harmonized norms (to conducted EN 55022) are not met by most PLC systems, regardless of the stricter limits of regulations such as NB 30.

It is unlikely that PLC will experience widespread application under its currently implemented status. With delays in implementation and lackluster client acceptance, even the business case is becoming less attractive."

The article is written from the European viewpoint but very relevant to BPL.

2365. Re: Which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 05:14:43 UTC
From: Ken Bessler <kg0wx@yahoo.com>
Message-ID: <7B1Wa.115044$R92.60284@news2.central.cox.net>
Source record: 111509

"Tarmo Tammaru" <t-tammaru@home.com>
wrote in message news:ubqcnWAJVu_79LWiU-KYvg@comcast.com...
> You are really making life hard on yourself. For 20
> meters put up a 20 meter dipole, ditch the tuner and
> feed if with minimum of RG8X coax. Worry about
> the other bands later. It is short enough, that the whole > thing will be
up at least 35 feet.
>
> Tam/WB2TT

I guess I should have been more specific - I already
have an effective 20 meter antenna and am looking
to add at least 80m and hopefully 160 capability to an
existing area available for setup. I also might like to
go on 40m at 13:30 MDT for a net and work the
WARC bands every now and then.

But, hey - thanks for the input. :-)

72's de Ken KG0WX

2366. Re: Problem with my MFJ-989 and 1N34E

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 06:16:08 UTC
From: Helmut Wabnig <hXXXwabnig@aXXXon.at>
Message-ID: <q0dhivc84fauh908fj3rklsp4ksjc7k3f0@4ax.com>
Source record: 111510

On Tue, 29 Jul 2003 14:30:21 -0500, 'Doc <w5lz@cwis.net> wrote:

>
>
>Frank,
> Write or email MFJ, they will be happy to
>'trouble shoot' your tuner for you.
> 'Doc
With one year response time?

w.
--
On the Internet nobody knows that I am a dog.

2367. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 07:10:46 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307302310.5b9a108a@posting.google.com>
Source record: 111511

Roy Lewallen <w7el@eznec.com> wrote in message news:<vigm26krbtjj53@corp.supernews.com>...
> I think I've done about as much as I can here, and the time spent is
> getting out of proportion to the communication achieved. It's time for
> someone else to take a crack at it, or for it to be taken to another
> newsgroup.
>
> Roy Lewallen, W7EL

Thanks for your input Roy.

Slick

2368. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 08:04:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0307310004.5409e963@posting.google.com>
Source record: 111512

Roy Lewallen <w7el@eznec.com> wrote in message news:<vif0j286gedq07@corp.supernews.com>...
> >
> > But by definition, the E field is definitely related to voltage
> > potential.
>
> Well, yes, speed (meters per second) is related to distance. Force
> (Newtons) is related to work (Newton-meters). But speed isn't distance,
> and force isn't work. The mass of the Earth is related to its orbital
> velocity, and mass certainly isn't velocity. Worse yet, the impedance of
> free space isn't a measure of the same thing as the characteristic
> impedance of a transmission line. What I'm trying to illustrate is that
> because two things are related doesn't make them the same thing, or
> necessarily even close to the same thing.

I never said that the E field IS a voltage, only that they are
related, and that you can measure the strength of the E field by
measuring voltages, which is what you really do with a field strength
meter anyways.

>
> > Say PD = E^2/Z0 = H^2 * Z0. If you say the Power Density =
> > V^2/(R*m^2), and the R=Zo, then these will cancel, giving you E =
> > V/meter, which are the correct units. So here we are equating the
> > impedance of free space will a resistive impedance or load.
>
> No, all you're doing is showing that they have the same dimensions. It
> just doesn't seem to be sinking in that having the same dimensions
> doesn't make two quantities the same thing. I've tried with the example
> of torque and work, but that doesn't seem to be having any effect. Maybe
> someone else can present some other examples, and maybe, just maybe,
> with enough examples the concept will sink in.
>

Are you saying that Newton*Meters are different depending on the
situation? I don't think so. A Newton is a Newton. A meter should
always be a meter. And an Ohm should always be an Ohm.

I'm not saying that the impedance of free space is relating
voltage to current, because there is no current flow in free space.
But why do they use the same units (Ohms) to describe the relation of
the E field to the H field?

Hugh Skilling - "Intrinsic impedance is somewhat analogous to the
characteristic impedance of a transmission line. It has the
dimensions of Ohms, for the E is Volts/Meter and H is Amperes/meter."

Perhaps I'm asking the wrong NG.

> But electric field is actually defined in terms of the force on a
> charge. You'll find an explanation in any basic physics text, as well as
> many places on the Web. In Weidner and Sells, _Elementary Classical
> Physics_, Vol. 2, the authors define electric field E as F/q, or the
> force that would be exerted on a (sufficiently small) charge at the
> point at which the field is being measured. They explain that the units
> of electric field are newtons per coulomb which, it turns out, has the
> same dimensions as volts per meter. So to your argument that electric
> field is "related" to voltage, it's equally related to distance, force,
> and charge. You can, in fact, find a bundle of other equivalent products
> and quotients of units that are equivalent.

The E field is certainly related to all these things. If you could somehow accurately measure the repelling force on a unit positive charge, that a static positive charge exerts upon it, then you would know what the E field is in Newtons/Coulomb, which would also be the Volts/meter.

If you could also measure the voltage potential of this unit positive charge in the same positive field, at two different points that are 1 meter apart (normal to the gradient of the E field), then you should get the same answer as above.

This second situation is what i'm asking about when i say where would the 1uV be measured. But in the real world, it would seem that most field strength meters have amplifiers (LNAs) either before or after rectification by Schottky diodes.

A field strength meter seems to relate the received power with the field strength, but not actually measuring the uV/meter directly. Certainly they must calibrate these instruments with a known amount of power into an antenna of known characteristics, in an anechoic chamber, at a fixed distance away, etc.

>
> Here we are again. Potential and voltage have the same dimensions, but
> aren't necessarily equal. And as far as I can tell, "voltage potential"
> is meaningless. To quote from Holt, _Electromagnetic Fields and Waves_,
> "When the electromagnetic fields are static, as we shall see, the
> voltage drop along a path equals the potential drop between the end
> points of the path. Furthermore, these quantities [voltage and electric
> potential] are also equal in *idealized* electric circuit diagrams, and
> they are approximately equal in physical circuits, provided voltmeter
> leads do not encircle appreciable time-changing magnetic flux." Pay
> particular attention to the last qualification. When a time-changing
> magnetic field is present, the voltage drop between two points depends
> on the path taken, while the potential drop is simply the difference in
> potential between the two points. So the voltage between two points in
> an electromagnetic field can be just about anything you'd like it to be.

I was simplifying the situation with the static E field case, but
the change of 1uV for every meter moved normal to the gradient of the
field can also apply to the AC situation, except that the +/- 1uV
would apply the RMS values.

>
> RF isn't any more nebulous than any other aspect of engineering.
> Engineering is a practical discipline, so compromises and trade-offs are
> universally necessary. Because we deal with real, physical objects and
> are stuck with real measurements, the absolute precision of mathematics
> and the pure sciences is never attainable. This is as true for using an
> I-beam as it is for RF design. But the principles of RF are at least as
> well known as the properties of I-beams. In fact, a good argument could
> be made that RF is better known.
>
> Roy Lewallen, W7EL

You wrote: "(The far field boundary depends on the nature of the
radiating structure, and is nebulous anyway.)"

So i used the word "nebulous" after you did.

You're talking to a B.S. in Mechanical, so i know a bit about
I-beams, but i've done only RF since college, so I'm more of a EE now.

Among the Top Ten blunders of my life: not doing Electrical.

Slick

2369. Opinions please G5 against long wire against windom?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 09:31:38 UTC
From: Chris Bartlett <Bartty@v21mail.co.uk>
Message-ID: <3f290b8d@news.greennet.net>
Source record: 111513

Hi all. My G5RV fell down the other day. The feed point was half way down the garden. for the moment I have put up a long wire (about 40 yards) and am able to operate on all bands using my tuner. The advantage here is that the feed point is near the house.

I had been considering trying a Windom. The measurements I have are 82' and 51' and a feed from a 1 to 1 balun 22' coax to a 4 to 1 balun at the T point. I also have different measurements of 85.1' and 36.4' fed straight to a 4 to 1 balun. The second would probably be the easiest to set up. But would it be the best?

Anyone with experience with home brew Windom's and opinions please.

The Windom would allow me to keep the feed point near to the house.

Thanks,

Chris.

2370. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 10:59:31 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <nE6Wa.28461$YN5.25379@sccrnsc01>
Source record: 111514

Looks like I need an update to my education.

DD, W1MCE

Richard Clark wrote:

> On Thu, 31 Jul 2003 01:21:15 GMT, Dave Shrader
> <david.shrader@comcast.net> wrote:
>
>>Back to the Modern Age. How efficient is a transmission line
>>transformer? [TBD %] Can you quantify a suitable number or will it
>>remain a qualitative statement?
>
>
> Hi Dave,
>
> Jerry Sevick offers a multitude of designs, all specified for loss
> over frequency. One such example illustrated in Fig. 11-6 shows a
> 50:12.5 Ohm with an insertion loss of around 0.1dB or less over the
> interval of 100KHz to 30MHz. And this is not the best example of low
> loss.
>
> 73's
> Richard Clark, KB7QHC

2371. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 11:00:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgassi$af9$1@titan.btinternet.com>
Source record: 111515

For design, frequency-response, insertion-loss of 4:1 impedance ratio,
transmission line HF transformers (voltage Baluns), download program BALUN4
from website below -

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

2372. Re: Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 11:39:07 UTC
From: K4SQR@juno.com
Message-ID: <7c8be5b4.0307310339.62220c62@posting.google.com>
Source record: 111516

Doug;
Universal does not have a web site. They seem to be satisfied with AES
& Texas Towers being their only dealers.
After Hurricane Hugo damaged several towers in the Metro Charlotte, NC
area in 1989, several club members ordered Universal 60' & 70' models
and are very satisfied with their quality.
Good luck,
Jim, K4SQR

"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:<vibnui28tvh453@corp.supernews.com>...
> I see a couple of sellers (AES and Texas Towers) have them but I cannot seem
> to find them anywhere on the web. Are these dealers selling stock that they
> have ?
>
> Doug N4IJ

2373. Re: Which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 15:55:19 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <4veiivodkeidtcfd4fpl0nrjgp4skhvijs@4ax.com>
Source record: 111507

On Wed, 30 Jul 2003 19:56:23 GMT, "Ken Bessler" <kg0wx@yahoo.com>
wrote:

>I'm planning on putting up a 130' inverted V antenna at my new QTH. I will
>be operating QRP with my Yaesu FT-817 and LDG Z-11 autotuner. The top of the
>V will be about 40' in the air and the ends about 12' in the air. I will be
>using 16 ga wire for the antenna. I plan to operate SSB/CW/PSK31 mostly on
>20 meters with some nighttime activity on SSB/CW 160 & 80 meters.
>
>My question is this:
>
>Should I feed it with 300 ohm HD twinlead, 450 ohm ladder line with or
>without a Bal-Un or rg58 coax with or without a Balun?
>
>Sorry if this is a dumb question but I wanted to pick the brains of the
>experts. My thinking is to have the antenna
>fed directly from rg58 coax (no Balun) and let the tuner do the work.
>
>Feedline radiation causing RFI/TVI is not a real concern at 5w, right? The
>'817 seems to be an acceptionaly clean transmitter - my TS200X and TS530S
>cause RFI in telephones and PC speakers even when turned down to 5 watts -
>my FT-817 causes no TVI/RFI at all!
>
>72's de Ken KG0WX
>

One alternative could be a 102' g5rv, which is tuned for 20 meters, to
begin with, and also could do 80 with the tuner. Dunno about 160. MFJ
makes one for $39.

Bob
k5qwg

2374. Re: RF Problems

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 17:41:08 UTC
From: Ed Woodbridge <edwod@cox.net>
Message-ID: <sxcWa.28479$Bp2.23085@fed1read07>
Source record: 111517

Try the SGC website.They have grounding info for boats.

Ed
K6CPF

"David Carrick" <k8mam@wideopenwest.com> wrote in message
news:oesgivc7c9l2fh0pojcke5h71o57jnoi35@4ax.com...
> Using an FT100D with ATAS antenna on a boat. Antenna mounted on bow
> rail . Tried copper plate connected with braid to base of antenna
> mount for ground. Don't have in hull ground plane.
> Problems with RF in audio reported as sounding garbled. Reducing power
> level helped some.
> Will Line Isolator form Raio Workls be of use? It was suggested.
> How about some radials from antenna base laid out along deck?
> Is only good solution a copper ground plane in the bilge connected
> with coopper foil to the antenna base?
> Any advice appreciated. Thanks
>

2375. Re: How was antenna formula for uV/Meter Derived?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 18:12:27 UTC
From: k7itm@aol.com
Message-ID: <3200347.0307311012.2bbe4a34@posting.google.com>
Source record: 111518

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0307310004.5409e963@posting.google.com>...

>
> I never said that the E field IS a voltage, only that they are
> related, and that you can measure the strength of the E field by
> measuring voltages, which is what you really do with a field strength
> meter anyways.

Of course, you can also measure the strength of the magnetic field (of
an EM wave) by measuring a voltage. (Which may be what you are doing
with a field strength meter, rather than sampling the electrical
field, depending on the meter.) And you can measure a temperature
(differential) by measuring a voltage. And you can measure
reduction-oxidation potentials by measuring a voltage. ...

Cheers,
Tom

2376. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 19:23:33 UTC
From: ketalar <ketalarnospam@xanadu.fr>
Message-ID: <oprs6v5jbob8v01a@news.wanadoo.fr>
Source record: 111419

For instance, the distance between the two tap points : which one to start with , supposing I insert a variable capacitor (Sorry, the only antenna work I did was for top band) ??

Le Wed, 30 Jul 2003 18:38:09 +0200, ketalar <ketalarnospam@xanadu.fr> a ï¿œcrit:

> TNX fer the answer. That's what I was looking for, but I'm not an expert abt Gamma-matching : how should I proceed ?
>
> Le Wed, 30 Jul 2003 13:07:39 +0100, Alexander S. Wood <alec_wood@dont.spam.me.ntlworld.com> a ï¿œcrit:
>
>> I suppose you could gamma match it.
>>
>
>
>

--
<< A personne, sauf ï¿œ ceux qui y prendront plaisir >> (Franz Schubert, 1797-1828)

2377. I have an antenna transmission line problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 20:47:16 UTC
From: larry <larya24@hotmail.com>
Message-ID: <offWa.33277$hOa.16245@news02.bloor.is.net.cable.rogers.com>
Source record: 111420

Greetings

Lets see where do I start. I have been licenced since I was 16, in 1964. My ham startion was located in the basement. My first antenna, a random wire, ran from my antenna coupler, an L network, along the basement ceiling out a hole drill in the frame of a basement window, up to, and over, the eavestrough and down the backyard to the cloths line pole. About 75 feet. Worked great on 80, 40, 20 meters.

Since then a pine tree located this on the house side of the pole has grown to all but block my route to that pole.

Lots of time has gone by plus interests, etc, and I am planning a return to hf, perferably cw.

My ham station has now moved from the basement, same house, to my old bedroom facing the back of the house. My bedroom in now at the front side of the house.

The most direct route to the back yard is now via a window. The window has a permanent screen on the outside, it can be removed for changing, repair etc. On the inside is a weather designed up and down sliding glass window.

My question is: is it possible to design something to allow me to pass a transmission line, of any type, through a screen window, without significantly effecting the characteristics of the transmission line and without effecting the integrity of the screen window?

Larry ve3fxq
larya@rogers.com

2378. Re: Opinions please G5 against long wire against windom?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 22:15:52 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bgc4e3$q21$1@slb6.atl.mindspring.net>
Source record: 111421

"Chris Bartlett" <Bartty@v21mail.co.uk> wrote in message
news:3f290b8d@news.greennet.net...
> Hi all. My G5RV fell down the other day. The feed point was half way down
> the garden. for the moment I have put up a long wire (about 40 yards) and
> am able to operate on all bands using my tuner. The advantage here is that
> the feed point is near the house.
>
> I had been considering trying a Windom. The measurements I have are 82'
and
> 51' and a feed from a 1 to 1 balun 22' coax to a 4 to 1 balun at the T
> point. I also have different measurements of 85.1' and 36.4' fed straight
to
> a 4 to 1 balun. The second would probably be the easiest to set up. But
> would it be the best?
>
> Anyone with experience with home brew Windom's and opinions please.
>
> The Windom would allow me to keep the feed point near to the house.
>
> Thanks,
>
> Chris.
>
>

A windom or an OCF (Off center fed) antenna work well. If you put up a
wavelength for the horizontal part you can work it on even harmonic bands.
It will work elsewhere but you may have feedline currents this way.

My first hb windom was 130 foot long with a single wire feedline, 1/3 of
the way from the end. I used a simple homebrew pi-net tuner. Worked great.

At another time I used a OCF dipole, this antenna I used 200 ohm twinlead
(military stuff). Fed at the 1/4 wave point and it did a decent job too.

Unfortunatly I cant compare them to anything, since they were the only
antenna I had up at the time.

So, my advise it put it up. See how it plays, and then tear it down and
try the other one. Thats what makes ham radio so much fun. Enjoy.

Dan/W4NTI

2379. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 22:25:21 UTC
From: richardharrison@webtv.net
Message-ID: <23533-3F299751-5@storefull-2313.public.lawson.webtv.net>
Source record: 111424

Ketalar wrote:
"Which one to start with?"

Kraus says that a rectangle such as a metal window frame can be considered as two 1/4-wave stubs joined together and fed in the middle across the narrow dimension. However, Kraus says the stubs are a poor radiator, but if the stubs are the edges of a large conducting sheet, the current can spread out making the slot a good and efficient radiator. See page 305 of the paperback edition.

You may not need much efficiency for good reception. Folded monopoles work just fine for both transmission and reception. I think something could be worked out as folded monopoles back to back.

Best regards, Richard Harrison, KB5WZI

2380. Re: Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 22:30:13 UTC
From: DOUGLAS SNOWDEN <snowden@peoplepc.com>
Message-ID: <vij63m4n3bsd9b@corp.supernews.com>
Source record: 111422

OK - that is good to know. I didn't want to buy something that
was not supported anymore.

Doug

"Jim" <K4SQR@juno.com> wrote in message
news:7c8be5b4.0307310339.62220c62@posting.google.com...
> Doug;
> Universal does not have a web site. They seem to be satisfied with AES
> & Texas Towers being their only dealers.
> After Hurricane Hugo damaged several towers in the Metro Charlotte, NC
> area in 1989, several club members ordered Universal 60' & 70' models
> and are very satisfied with their quality.
> Good luck,
> Jim, K4SQR
>
> "DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:<vibnui28tvh453@corp.supernews.com>...
> > I see a couple of sellers (AES and Texas Towers) have them but I cannot
seem
> > to find them anywhere on the web. Are these dealers selling stock that
they
> > have ?
> >
> > Doug N4IJ

2381. FS: 4 N-female to PL259 adapters(NEW) $20.00

Newsgroup: rec.radio.amateur.antenna
Date: 2003-07-31 22:58:50 UTC
From: CommCtr1 <nospam@tome.com>
Message-ID: <KahWa.82349$0v4.5488920@bgtnsc04-news.ops.worldnet.att.net>
Source record: 111425
Cross-posted to: alt.ham-radio.vhf-uhf,rec.ham-radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.swap

I have 4 N-female to PL259 adapters. I'm not sure what kind they are, but
they are new.
$20.00 shipped.
email direct if interested

2382. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 00:07:10 UTC
From: NN7K@reno.rmci.net
Message-ID: <f1iWa.889$GN6.866@fe01.atl2.webusenet.com>
Source record: 111426

Given that a 1dB change is NOT SUSPOSED to be noticed (without a meter, in hearing, sight, ect.), anyhow, Just what would be the Noticeable effect of >/ = .1 dB in the real world ? Would , say, 2/10's really kill you, or 1/100th dB extra get you that last DXCC country? As I say, am very cynical when ANYTHING gets into these kinds of numbers! Jim NN7K

KB7QHC wrote:

50:12.5 Ohm with an insertion loss of around 0.1dB or less over the interval of 100KHz to 30MHz.
AND THAT IS NOT THE BEST EXAMPLE OF LOW LOSS!
73's Richard Clark, KB7QHC

2383. Re: I have an antenna transmission line problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 01:26:59 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F29C1E3.84CCCD68@cwis.net>
Source record: 111427

Larry,
Right off hand I would say use a 'bulkhead' connector
through the screen. You might mount the connector on a
piece of plastic/metal/wood on each side of the screen to
keep from tearing it. Sort of a jelly sandwich with the
screen as the jelly (if that makes any sense). Hows that?
'Doc

2384. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 01:30:48 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F29C2C8.D76FAAF7@cwis.net>
Source record: 111428

But with the window open, or shut??
'Doc

2385. Re: I have an antenna transmission line problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 01:48:26 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <DJacnRKSS71sW7SiXTWJhw@comcast.com>
Source record: 111429

Larry, When I once had the shack in a bedroon, I punched a hole into the closet ceiling to get the cables up into the attic. Then out from the attic.

Tam/WB2TT
"larry" <larya24@hotmail.com> wrote in message news:offWa.33277$hOa.16245@news02.bloor.is.net.cable.rogers.com...
> Greetings
>
> Lets see where do I start. I have been licenced since I was 16, in 1964.
> My ham startion was located in the basement. My first antenna, a random
> wire, ran from my antenna coupler, an L network, along the basement ceiling
> out a hole drill in the frame of a basement window, up to, and over, the
> eavestrough and down the backyard to the cloths line pole. About 75 feet.
> Worked great on 80, 40, 20 meters.
>
> Since then a pine tree located this on the house side of the pole has grown
> to all but block my route to that pole.
>
> Lots of time has gone by plus interests, etc, and I am planning a return to
> hf, perferably cw.
>
> My ham station has now moved from the basement, same house, to my old
> bedroom facing the back of the house. My bedroom in now at the front side
> of the house.
>
> The most direct route to the back yard is now via a window. The window has
> a permanent screen on the outside, it can be removed for changing, repair
> etc. On the inside is a weather designed up and down sliding glass window.
>
> My question is: is it possible to design something to allow me to pass a
> transmission line, of any type, through a screen window, without
> significantly effecting the characteristics of the transmission line and
> without effecting the integrity of the screen window?
>
> Larry ve3fxq
> larya@rogers.com
>
>
>

>
>

2386. Re: Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 02:10:48 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <oMadnfjRZK6yUbSiXTWJjQ@comcast.com>
Source record: 111430

www.universltower.com is the web site for a Universal Tower in Henderson KY.
It will not come up. You could always try calling them on the 'phone, or ask
the Texas Towers sales rep what the story is.

Tam/WB2TT
"Jim" <K4SQR@juno.com> wrote in message
news:7c8be5b4.0307310339.62220c62@posting.google.com...
> Doug;
> Universal does not have a web site. They seem to be satisfied with AES
> & Texas Towers being their only dealers.
> After Hurricane Hugo damaged several towers in the Metro Charlotte, NC
> area in 1989, several club members ordered Universal 60' & 70' models
> and are very satisfied with their quality.
> Good luck,
> Jim, K4SQR
>
> "DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:<vibnui28tvh453@corp.supernews.com>...
> > I see a couple of sellers (AES and Texas Towers) have them but I cannot
seem
> > to find them anywhere on the web. Are these dealers selling stock that
they
> > have ?
> >
> > Doug N4IJ

2387. Re: How do I make a cheap but good pirate radio antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 02:19:36 UTC
From: Dave Bushong <dbushong@spamcop.nett>
Message-ID: <Y6kWa.1680$jg.639259@news1.news.adelphia.net>
Source record: 111431

Heathkit used to make a small metal container that held resistive
transmitter dissipative units, surrounded by oil, that would take all
transmitter power, and the SWR was nearly 1:1 on all (HF) bands.

I think that is what you want here.

Dave KZ1O

David Robbins wrote:

> p.s. this one has the added advatage of makeing it a legal pirate station.
>
> "David Robbins" <k1ttt@arrl.net> wrote in message
> news:7BycnYvrrNQhw7-iXTWJjw@crocker.com...
>
>>sure, take a resistor rated to dissipate as much power as your
>
> transmitter,
>
>>encase in metal can, add connector, and away you go.
>>
>>"Dominick(dblacklab)" <dblacklab@netzero.net> wrote in message
>>news:bfsh8a$i5obn$1@ID-202017.news.uni-berlin.de...
>>
>>>Can anyone help me "homebrew" a goos FM Pirate radio antenna?
>>>Help! Please!
>>>
>>>
>>
>>
>
>

--

Please yank that last "t" from my email address.
It's "net", not "nett". You know how to do that,
but the spammers won't.

2388. Re: I have an antenna transmission line problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 02:20:03 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <iP2dnaOsXqTeU7SiXTWJjw@comcast.com>
Source record: 111432

I had the local hardware store replace the metal screen with nylon screening in a similar color. Fiberglas screening would have been equally good. My antenna is fifty feet of (almost invisible) No 30 wire, which fits easily through the screen.

Tom, N3IJ

"larry" <larya24@hotmail.com> wrote in message news:offWa.33277$hOa.16245@news02.bloor.is.net.cable.rogers.com...
> Greetings
>
> Lets see where do I start. I have been licenced since I was 16, in 1964.
> My ham startion was located in the basement. My first antenna, a random
> wire, ran from my antenna coupler, an L network, along the basement ceiling
> out a hole drill in the frame of a basement window, up to, and over, the
> eavestrough and down the backyard to the cloths line pole. About 75 feet.
> Worked great on 80, 40, 20 meters.
>
> Since then a pine tree located this on the house side of the pole has grown
> to all but block my route to that pole.
>
> Lots of time has gone by plus interests, etc, and I am planning a return to
> hf, perferably cw.
>
> My ham station has now moved from the basement, same house, to my old
> bedroom facing the back of the house. My bedroom in now at the front side
> of the house.
>
> The most direct route to the back yard is now via a window. The window has
> a permanent screen on the outside, it can be removed for changing, repair
> etc. On the inside is a weather designed up and down sliding glass window.
>
> My question is: is it possible to design something to allow me to pass a
> transmission line, of any type, through a screen window, without
> significantly effecting the characteristics of the transmission line and
> without effecting the integrity of the screen window?
>
> Larry ve3fxq
> larya@rogers.com
>

>
>
>
>

2389. Re: Test

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 02:21:02 UTC
From: Dave Bushong <dbushong@spamcop.nett>
Message-ID: <i8kWa.1682$jg.639657@news1.news.adelphia.net>
Source record: 111433

Pat Whelton wrote:

> Please ignore.
>
>

I'm sorry, what was that?

2390. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 02:28:45 UTC
From: Dave Bushong <dbushong@spamcop.nett>
Message-ID: <xfkWa.1685$jg.640997@news1.news.adelphia.net>
Source record: 111434

All this time, I thought it was a Byrd wattmeter. I mean, if we are talking details here, then let's get it right. Right?

Dave
KZ1O

p.s. And before you give me s**t about this, look below where he says "70.7 volts". Down to three digits of accuracy, but the spelling is wrong (in fact, a copyright violation) two words later.

Come on, do the Math (and Spelling).

JGBOYLES wrote:

> Hi, I thought I understood this but recent discussions left me wondering.
> A Bird Wattmeter provides a voltage that is proportional to the forward power
> minus the reflected power. This assumes the output impedance is known and
> constant, usually 50+-j0. Assume a Bird has a 0-10vdc meter for indication. I
> don't know what it is, but for discussion.
> Input 100 watts into a 50 ohm load, and you get 70.7 volts, the Bird scales
> this to 1 volt, and you get 10% deflection on your wattmeter, or 100 watts.
> Input 1000 watts and you get 223.6 volts which the Bird scales to 3.16 volts,
> or 316 watts. 316 does not equal 1000, so the scale on the meter has to have
> V**2 relationship to indicate 1000 watts. So 1000 watts is 31.6% of full
> scale. I thought all Ham wattmeters did this. Of course it is highly
> dependent on the Z the wattmeter sees. Wattmeters that actually multiply V and
> I are another subject, it is hard to keep them in line without causing some
> insertion loss, is it not?
> 73 Gary N4AST

--

Please yank that last "t" from my email address.
It's "net", not "nett". You know how to do that,
but the spammers won't.

2391. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 04:58:43 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <7smWa.367564$jp.10452824@twister.southeast.rr.com>
Source record: 111435

I would suggest that anyone that strapped for cash use transmission line segments for impedance matching. That is about as cheap as it gets.

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message news:85ed38d.0307290750.345d3abf@posting.google.com...
> Seems like a lot of hams with limited resources are still compelled
> to operate on many bands with just a long wire and a tuner.
> The wire is inexpensive but the tuners are not. Thus my present
> project.
> I was given a Palomar enginnering balun with 5 female connenection
> which by selection can match a antenna in steps from 5 ohms to over
> 450 ohms
> in a series of steps. I am presently rigging it up so that all
> steps can be switched thru remotely by a single motor. The switching
> arrangement
> is the main challenge since inexpensive means simple.
> Now I have not measured losses of the balun before hand because the
> switching
> challenge is what is driving me.
> Anybody have any thoughts about what I should expect from this
> balun other than knowing that it is not a tuner as is generally known
> since
> it does not have the ability to obtain the priceless 1:1 condition
> that so many desire?
> Regards
> Art

2392. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 05:05:38 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <CymWa.367565$jp.10455857@twister.southeast.rr.com>
Source record: 111436

When I lived in GA most of the feed and seed places carried it. Visit one, I bet if they dont have it they can get it or tell you where.
"DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message news:vij63l3a0ldr9a@corp.supernews.com...
> It looks to me like most irrigation pipe sellers are out West.
> Anyone know where a seller on the East coast is? It would
> be nice to find one near me in Richmond VA that has used pipe.
>
>
> Doug
>
> N4IJ
>
>

2393. Re: I have an antenna transmission line problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 05:08:15 UTC
From: Sarge <sarge43@ev1.net>
Message-ID: <vijte4mlj94j44@corp.supernews.com>
Source record: 111437

why not go through the wall? Put a cable wallplate inside and silicone sealer outside.

2394. Re: How a Bird works

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 05:52:19 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <nenWa.367678$jp.10464222@twister.southeast.rr.com>
Source record: 111438

The output of the element is a function of both voltage and current at the point it is measured. The element sums 2 voltages, one that represents the voltage at the point of test and the other that represents the current. When SWR is 1:1 these 2 voltages are equal so that the voltage output is actually twice that of what is contributed by voltage alone at the point of test when measuring forward power. This is why it would be zero when measuring reverse(the voltage representing the current adds negatively). In the hundred watt example you used the voltage out to the meter would be 141.4v not 70.7v

"JGBOYLES" <jgboyles@aol.com> wrote in message
news:20030727192831.06745.00000672@mb-m06.aol.com...
> Hi, I thought I understood this but recent discussions left me wondering.
> A Bird Wattmeter provides a voltage that is proportional to the forward
power
> minus the reflected power. This assumes the output impedance is known and
> constant, usually 50+-j0. Assume a Bird has a 0-10vdc meter for
indication. I
> don't know what it is, but for discussion.
> Input 100 watts into a 50 ohm load, and you get 70.7 volts, the Bird
scales
> this to 1 volt, and you get 10% deflection on your wattmeter, or 100
watts.
> Input 1000 watts and you get 223.6 volts which the Bird scales to 3.16
volts,
> or 316 watts. 316 does not equal 1000, so the scale on the meter has to
have
> V**2 relationship to indicate 1000 watts. So 1000 watts is 31.6% of full
> scale. I thought all Ham wattmeters did this. Of course it is highly
> dependent on the Z the wattmeter sees. Wattmeters that actually multiply
V and
> I are another subject, it is hard to keep them in line without causing
some
> insertion loss, is it not?
> 73 Gary N4AST

2395. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 06:42:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bovjivcf2pt1ea4vu4boau3u1eladjfplr@4ax.com>
Source record: 111439

On Thu, 31 Jul 2003 17:07:10 -0700, <NN7K@reno.rmci.net> wrote:

>Given that a 1dB change is NOT SUSPOSED to be noticed (without a meter, in
>hearing, sight, ect.), anyhow, Just what would be the Noticeable effect of
>>/ = .1 dB in the real world ? Would , say, 2/10's really kill you, or
>1/100th dB extra get you that last DXCC country? As I say, am very cynical
>when ANYTHING gets into these kinds of numbers! Jim NN7K
>
>KB7QHC wrote:
>----------
> 50:12.5 Ohm with an insertion loss of around 0.1dB or less over the
>interval of 100KHz to 30MHz.
> AND THAT IS NOT THE BEST EXAMPLE OF LOW LOSS!
> 73's Richard Clark, KB7QHC

Hi Jim,

Cynical? This 0.1dB corresponds to about 2% error from perfect where too many think that 5% error is the worst they have to suffer from making a power measurement with their Bird (which actually doesn't do nearly that well in the first place due to these accumulations of error). It doesn't take long for error to accumulate to the 10's of percent where you couldn't convince the bench tech that he has too many places of precision in his pronouncement of measuring 104.5W (when it was in fact closer to somewhere between 85W to 115W).

I can well anticipate the "so what?" rebuttal. "Who needs 5% accuracy?" being another. The general rule of thumb demands that your standard exhibit 3 times the accuracy of the instrument being calibrated (the Bird is already dead on arrival using this 0.1dB loss, if it were not characterized already). With an out of whack Bird, you barely qualify any power measurement to within 15% (and there are more sources of error than the BalUn used to isolate the Bird). Again, I am being generous with the 3 times rule (professionals generally seek 5 times and are more comfortable with 10 times). But this is all really the provence of the professional Metrologist, not the Amateur. For the Bench Tech that confidently made the 104.5W measurement (not knowing it was in fact closer to 60W) would hardly know it through contacts where they barely noticed the less than 1 S-Unit difference.

Returning to this 0.1dB, it also represents a heat burden of 20W (or more, I am being generous) for each 1KW passing through. This is a lot of heat for small packages carelessly regarded as being trivial (after-all, who can see 0.1dB on their S-Meter?). There have been more than single reports of Hams writing here in astonishment of their BalUns exploding. Blame the BalUn seems to be a popular ballad played

to that audience. Others pronounce with hushed tones of reverence remonstrating mankind for drifting from the true path of the air wound BalUn (or choke, what will you) mindless of the same loss, but gratified through ignorance of the greater heat mass.

This 0.1dB in the wrong hands is clearly an example of extravagant dismissal or myopic attention. And speaking of hands, how long would you consider it trivial if you had to hold onto the sucker for 20 seconds?

73's
Richard Clark, KB7QHC

2396. Building AUTO TUNER

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 07:21:14 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <KxoWa.317020$_w.12741753@twister.southeast.rr.com>
Source record: 111440

I would like to build my own auto tunner and need info on software. My plan is to use a car ecu computer for the controller as it already has much of the digital an analog interface I will need, is rugged and cheap at the local scrap yard. Before someone yells "why are you using that for a controller", the point is to use one for something other than its intended purpose. I just thought an automatic antenna tuner would be a good use for one.

2397. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 08:17:00 UTC
From: ketalar <ketalar@xanadu.fr>
Message-ID: <bgd7ls$7c4$1@news-reader3.wanadoo.fr>
Source record: 111441

OK, Igot one S point better with a croc clip to the frame.
Ground was already connected.

2398. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 08:21:46 UTC
From: ketalar <ketalar@xanadu.fr>
Message-ID: <bgd7uq$2h1$1@news-reader4.wanadoo.fr>
Source record: 111442

I'll first try with the outer frame !
In summer I could turn (i.e. open) the window to see if there is an
improvement !

'Doc <w5lz@cwis.net> wrote in news:3F29C2C8.D76FAAF7@cwis.net:

>
>
> But with the window open, or shut??
> 'Doc

2399. HY-Gain 20 meter yagi

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 09:21:41 UTC
From: Mel <k2at@comcast.net>
Message-ID: <fjednZWOnNa3rLeiXTWJkw@comcast.com>
Source record: 111443

Have for sale a Hy-gain 20 Meter 4 Element Yagi Model 204BA in excellent shape with all new stainless steel hardware. The Yagi is down disassembled and ready to go. Asking $200, new the antenna is $540. It is in perfect shape and the SWR is outstanding all across the band. Went to a log periodic and getting rid of my monobanders. Can ship if the buyer is willing to pay shipping charges. Live in Central New Jersey.

2400. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 11:21:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2a4e49$1_2@corp.newsgroups.com>
Source record: 111444

Jimmy wrote:
> I would suggest that anyone that strapped for cash use transmission line
> segments for impedance matching. That is about as cheap as it gets.

Yep, I bought an SGC-500 amp and didn't want to spring for a high power
tuner. So I vary my window-line length to obtain a match.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2401. Re: Building AUTO TUNER

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 11:28:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2a5005$1_2@corp.newsgroups.com>
Source record: 111445

Jimmy wrote:
> I would like to build my own auto tunner and need info on software. My plan
> is to use a car ecu computer for the controller as it already has much of
> the digital an analog interface I will need, is rugged and cheap at the
> local scrap yard.

When I retired from Intel, most ecu controllers ran their programs from
internal ROM which is not reprogrammable. Seems something like a PIC
would be a more logical choice.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2402. Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 12:28:59 UTC
From: Bill <harley80@prodigy.net>
Message-ID: <f2tWa.175$PQ7.56@newssvr16.news.prodigy.com>
Source record: 111447

Has anyone tried the new super broomstick receiving antenna for sale on ebay? I was wondering if it was any good or not.

2403. Re: RF Problems

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 13:12:28 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F2A65FB.18E3252F@gte.net>
Source record: 111448

David Carrick wrote:

> Using an FT100D with ATAS antenna on a boat. Antenna mounted on bow
> rail . Tried copper plate connected with braid to base of antenna
> mount for ground. Don't have in hull ground plane.
> Problems with RF in audio reported as sounding garbled. Reducing power
> level helped some.
> Will Line Isolator form Raio Workls be of use? It was suggested.
> How about some radials from antenna base laid out along deck?
> Is only good solution a copper ground plane in the bilge connected
> with coopper foil to the antenna base?
> Any advice appreciated. Thanks

Are you certain the problem is not insufficient current capacity through the DC cables. I had this exact same problem recently on a boat. Voice peaks distorted- the only problem was that the DC connection had too much resistance.

Dale W4OP

2404. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 14:51:39 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.08.01.14.51.31.979429@mailhot.reversethatanddropthis.com>
Source record: 111449

On Wed, 30 Jul 2003 11:05:42 -0700, Roy Lewallen wrote:

> I'm surprised no one has suggested a coupling loop. Small loops are
> often fed via a smaller loop placed inside the main loop, typically off
> center. The impedance match can be effected by adjusting the size and
> number of turns of the smaller loop. I believe one of Reg's programs
> helps with the design of these.
>
> Roy Lewallen, W7EL

I'm just curious. Roy? What the heck are you talking about? I mean,
I can see you're talking about feeding a magloop, but what does that have
to do with feeding a random wire from a basement?

2405. PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 15:15:26 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.08.01.15.15.20.29245@mailhot.reversethatanddropthis.com>
Source record: 111450

I'm thinking of taking the insulator and center conductor from coax and sliding it in and out of a copper tube, maybe with threaded rod to hold position and facilitate fine adjustment. I'm figuring on copper tape on a hula-hoop as the loop, with the cap mounted directly to the hoop, and copper foil tying the sides of the cap to the loop so I don't have to halve the capacitance with a dual-plunger reimplementation of the butterfly. What kind of capacitance per inch can I expect? Would a 36 inch diameter loop at 5 watts make enough voltage to puncture rg-58? rg-8?
If it'll take a lot of sliding, I'll have to switch to dual-plunger to avoid excessive conductor length and flexing.

I plan to mount it on a backpack, using dowels, or maybe PVC, to elevate it for a foot or so seperation from the metal pack frame - cap at top(another reason to keep the cap light). Will tuning change a lot depending on whether the pack is worn? I really don't want to have to add motorized tuning so I can tune it while worn... weight, don't you know?

One other possible deviation - I'm considering carrying it flat. My width will be unchanged, but it'll lower height by 18" or allow another 18" of elevation, and give me an omnidirectional horizontally-polarized pattern, right?

At 5W, I'm not concerned about heating, and even any RF burns should be manageable, but I want to be as efficient as I can be within the constraints of /PM operation.

If I can successfully build this, I'll try to document it well, and make the design available to others. At the very least, maybe we'll get some cool ideas.

73,

tim

2406. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 15:30:21 UTC
From: "Nic. Santean" <nic@csd.uwo.ca>
Message-ID: <3f2a86d3@shknews01>
Source record: 111451

Why don't you build one by yourself ?

Nic.

"Bill" <harley80@prodigy.net> wrote in message
news:f2tWa.175$PQ7.56@newssvr16.news.prodigy.com...
> Has anyone tried the new super broomstick receiving antenna for sale on
> ebay? I was wondering if it was any good or not.
>
>

2407. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 16:10:59 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308010810.221a2d85@posting.google.com>
Source record: 111452

"Jimmy on reading the postings over time I see a lot of
people asking about the G5RV which is an inexpensive way of
of operating on many bands. I thought that maybe a inexpensive way
of matching such an antenna would be a cheap sort of tuner.
I don't need a tuner, it was just an idea that popped
into my head. Clark raised the subject of excess heat
that I hadn't thought of but I am enjoying the challenge
of putting together suitable mechanisms that would not be
subject to breakdown, that one could place at a antenna feed point.
If it explodes it would be more spectacular than having a
neon light blinking during radio operation !
If one must have 1: 1 SWR at all times then they can spend a $200
amount or more to buy the SGC tuner (I thing that in the name
of the automatic tuner which I believe is limited with respect
to power.)
The mechanism I am making is a star shaped wheel with a slot in
each point.
It has a interconnecting rotary switch that sweep each transformer
connection and when it has rotated once engages the star wheel
so that it rotates a distance equal to the transformer connection
where it stays in place for the next rotary switch rotation.
Making the parts from a plastic sheet used to replace a glass
window pane plus the use of a small hand grinding tool.
Duing this in the garage to escape the heat

Jimmy" <Gfender@carolina.rr.com> wrote in message
news:<7smWa.367564$jp.10452824@twister.southeast.rr.com>...
> I would suggest that anyone that strapped for cash use transmission line
> segments for impedance matching. That is about as cheap as it gets.
>
> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
> news:85ed38d.0307290750.345d3abf@posting.google.com...
> > Seems like a lot of hams with limited resources are still compelled
> > to operate on many bands with just a long wire and a tuner.
> > The wire is inexpensive but the tuners are not. Thus my present
> > project.
> > I was given a Palomar enginnering balun with 5 female connenection
> > which by selection can match a antenna in steps from 5 ohms to over
> > 450 ohms
> > in a series of steps. I am presently rigging it up so that all
> > steps can be switched thru remotely by a single motor. The switching
> > arrangement
> > is the main challenge since inexpensive means simple.
> > Now I have not measured losses of the balun before hand because the

> > switching
> > challenge is what is driving me.
> > Anybody have any thoughts about what I should expect from this
> > balun other than knowing that it is not a tuner as is generally known
> > since
> > it does not have the ability to obtain the priceless 1:1 condition
> > that so many desire?
> > Regards
> > Art

2408. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 16:31:24 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <A5ScnTSFEdh-CLeiXTWJhw@comcast.com>
Source record: 111453

Tim

First off, if the the inside diameter of the tube is about the same as the inner diameter of the coax shield that you took off, then the capacitance per inch would be the same as what is specified in cable charts. For instance, RG58 is something like 29 PF/foot.

I wouldn't bother with fancy threaded rods. Slit the end of the tube, and fasten a small hose clamp down on it to keep things in place.

Lastly, what you describe is how CushCraft seems to build their gamma match, and they take hundreds of watts. They adjust the capacitance by sliding the insulated wire in and out of the tube. This will have limited range; so, to get it in the ballpark you would have to keep cutting pieces off the end. For good measure, melt some insulation on the end of the wire so it is not exposed.

Tam/WB2TT
"Tim Conway" <n9hmg@mailhot.reversethatanddropthis.com> wrote in message news:pan.2003.08.01.15.15.20.29245@mailhot.reversethatanddropthis.com...
> I'm thinking of taking the insulator and center conductor from coax and
> sliding it in and out of a copper tube, maybe with threaded rod to hold
> position and facilitate fine adjustment. I'm figuring on copper tape on a
> hula-hoop as the loop, with the cap mounted directly to the hoop, and
> copper foil tying the sides of the cap to the loop so I don't have to
> halve the capacitance with a dual-plunger reimplementation of the
> butterfly. What kind of capacitance per inch can I expect? Would a 36
> inch diameter loop at 5 watts make enough voltage to puncture rg-58?
> rg-8?
> If it'll take a lot of sliding, I'll have to switch to dual-plunger
> to avoid excessive conductor length and flexing.
>
> I plan to mount it on a backpack, using dowels, or maybe PVC, to elevate
> it for a foot or so seperation from the metal pack frame - cap at
> top(another reason to keep the cap light). Will tuning change a lot
> depending on whether the pack is worn? I really don't want to have to add
> motorized tuning so I can tune it while worn... weight, don't you know?
>
> One other possible deviation - I'm considering carrying it flat. My width
> will be unchanged, but it'll lower height by 18" or allow another 18" of
> elevation, and give me an omnidirectional horizontally-polarized pattern,
> right?
>
> At 5W, I'm not concerned about heating, and even any RF burns should be
> manageable, but I want to be as efficient as I can be within the

> constraints of /PM operation.
>
> If I can successfully build this, I'll try to document it well, and make
> the design available to others. At the very least, maybe we'll get some
> cool ideas.
>
> 73,
>
> tim

2409. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 16:37:06 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <JpydneqvG_CkCreiXTWJkg@comcast.com>
Source record: 111454

Douglas,

I hadn't thought of this, but is that for a mast or boom? I have used Al conduit for masts, but this sounds better for long pieces. Do you know how long a piece you can get?

Tam/WB2TT
"DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message news:vij63l3a0ldr9a@corp.supernews.com...
> It looks to me like most irrigation pipe sellers are out West.
> Anyone know where a seller on the East coast is? It would
> be nice to find one near me in Richmond VA that has used pipe.
>
>
> Doug
>
> N4IJ
>
>

2410. Good antenna for a Denon AM/FM???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 16:42:51 UTC
From: fghgh <sdghj@j.fgh>
Message-ID: <3F2A988B.A954E0FC@j.fgh>
Source record: 111455

I have a Denon 2500 receiver. The small external AM loop
doesn't work well.
Would just connecting about a 100' 12 ga wire to only one of
the terminals and not grounding the other (too inconvenient)
work.
Or are there better external indoor loops out there?

2411. Butternut HF6V For sale or trade

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 17:13:08 UTC
From: MD <morco@bellnet.ca>
Message-ID: <GcxWa.1556$j_5.14679@news20.bellglobal.com>
Source record: 111456

All hardware, with coax matching section. Includes the 12 and 17m add-on kit. Antenna last used during Field Day with no tuning problems whatsoever. Anti-ham condo management forces sale. Would like to trade for any of the following:

Yaesu MD100-AX8 desk mic,
INRAD 6 khz AM filter for Yaesu FT920
HF/6m antenna tuner with random wire capability
W2IHY 2 band EQ

or sell outright for $125 US plus shipping from Ontario
Please reply to my personal e-mail at ve3tmt@yahoo.ca

I also have an MFJ249B analyzer I might trade for ???

2412. Re: Good antenna for a Denon AM/FM???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 17:42:33 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bge8qb$nsks7$1@ID-134747.news.uni-berlin.de>
Source record: 111457

Do a search for "Shielded Loop". Your 100' of
wire would be a improvement over the small loop
that you have, but less than 50% of a quarter wave
for 1100 khz (the middle of the AM broadcast
band). The loop will be directive, and you will
need to be able to adjust its tuning for maximum
efficiency but it will work gang busters for you.
For FM the folded dipole that Radio Shack sells
(420-2385) for less than $5.00 works like
gamgbusters. Put it up as an inverted V and
enjoy.

--
73 es cul

wb3fup
a Salty Bear

"fghgh" <sdghj@j.fgh> wrote in message
news:3F2A988B.A954E0FC@j.fgh...
> I have a Denon 2500 receiver. The small external
AM loop
> doesn't work well.
> Would just connecting about a 100' 12 ga wire to
only one of
> the terminals and not grounding the other (too
inconvenient)
> work.
> Or are there better external indoor loops out
there?
>

2413. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 18:23:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vilc1qcnieqh2a@corp.supernews.com>
Source record: 111459

Oops. The reason it makes no sense is that I screwed up and posted it to the wrong thread. Someone was asking about feeding a metal window frame, and that's what I intended it to refer to.

I apologize for the goof and the confusion it caused.

Roy Lewallen, W7EL

Tim Conway wrote:
> On Wed, 30 Jul 2003 11:05:42 -0700, Roy Lewallen wrote:
>
>
>>I'm surprised no one has suggested a coupling loop. Small loops are
>>often fed via a smaller loop placed inside the main loop, typically off
>>center. The impedance match can be effected by adjusting the size and
>>number of turns of the smaller loop. I believe one of Reg's programs
>>helps with the design of these.
>>
>>Roy Lewallen, W7EL
>
>
> I'm just curious. Roy? What the heck are you talking about? I mean,
> I can see you're talking about feeding a magloop, but what does that have
> to do with feeding a random wire from a basement?

2414. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 18:33:37 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <5oyWa.317855$_w.12798198@twister.southeast.rr.com>
Source record: 111460

Been a while but I think they are at least 20 ft maybe a little more. They make great booms especially if they are filled with foam insulation to keep them from being crushed. They are fairly thin walled.

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message news:JpydneqvG_CkCreiXTWJkg@comcast.com...
> Douglas,
>
> I hadn't thought of this, but is that for a mast or boom? I have used Al
> conduit for masts, but this sounds better for long pieces. Do you know how
> long a piece you can get?
>
> Tam/WB2TT
> "DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
> news:vij63l3a0ldr9a@corp.supernews.com...
> > It looks to me like most irrigation pipe sellers are out West.
> > Anyone know where a seller on the East coast is? It would
> > be nice to find one near me in Richmond VA that has used pipe.
> >
> >
> > Doug
> >
> > N4IJ
> >
> >
>
>

2415. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 20:20:07 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308011220.4d7ac1@posting.google.com>
Source record: 111461

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f2a4e49$1_2@corp.newsgroups.com>...
> Jimmy wrote:
> > I would suggest that anyone that strapped for cash use transmission line
> > segments for impedance matching. That is about as cheap as it gets.
>
> Yep, I bought an SGC-500 amp and didn't want to spring for a high power
> tuner. So I vary my window-line length to obtain a match.

Cecil, the idea that you have is quite unique but I was thinking
of the newby ham. To capture the future hams of tomorrow we must
enable them to get them on the air as quickly and cheaply as
possible and not dissuade them in any way as to how much they
will be paying in the future, and that is where my thoughts lie.
If a newcomer is to put up a G5RV so that he can get on the
air quickly,I thought that buying a RF transformer would be a
quick way of getting on the air and getting the taste for ham radio.
To be honest Cecil no newby is going to struggle with your method
in his early days.
If one could arrange a way to run thru a series of impedance ratio's
with just one knob then we have hooked those who are curious, even
when using the most plainess of wires or the gutter we have fed the
mind, remote control systems can come later. Frankly when you are
hooked by ham radio money ceases to become an issue.
Art

2416. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 20:32:51 UTC
From: Bill <n4wc@arrl.net>
Message-ID: <bgeik9$o0k6r$1@ID-175813.news.uni-berlin.de>
Source record: 111462

I think it all boils down to signal to noise.
If you are trying to communicate with another station and he is putting out
100 watts and is not being copied and then he puts out 110 watts and you can
copy him that is what counts.

Bill N4WC

NN7K@reno.rmci.net wrote:
> Given that a 1dB change is NOT SUSPOSED to be noticed (without a meter, in
> hearing, sight, ect.), anyhow, Just what would be the Noticeable effect of
>
>>/ = .1 dB in the real world ? Would , say, 2/10's really kill you, or
>
> 1/100th dB extra get you that last DXCC country? As I say, am very cynical
> when ANYTHING gets into these kinds of numbers! Jim NN7K
>
>
>
>
> KB7QHC wrote:
> ----------
> 50:12.5 Ohm with an insertion loss of around 0.1dB or less over the
> interval of 100KHz to 30MHz.
> AND THAT IS NOT THE BEST EXAMPLE OF LOW LOSS!
> 73's Richard Clark, KB7QHC
>
>
>

2417. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 21:47:43 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.08.01.21.47.36.539163@mailhot.reversethatanddropthis.com>
Source record: 111463

On Fri, 01 Aug 2003 12:31:24 -0400, Tarmo Tammaru wrote:

> Tim
>
> First off, if the the inside diameter of the tube is about the same as the
> inner diameter of the coax shield that you took off, then the capacitance
> per inch would be the same as what is specified in cable charts. For
> instance, RG58 is something like 29 PF/foot.
>
> I wouldn't bother with fancy threaded rods. Slit the end of the tube, and
> fasten a small hose clamp down on it to keep things in place.
>
> Lastly, what you describe is how CushCraft seems to build their gamma match,
> and they take hundreds of watts. They adjust the capacitance by sliding the
> insulated wire in and out of the tube. This will have limited range; so, to
> get it in the ballpark you would have to keep cutting pieces off the end.
> For good measure, melt some insulation on the end of the wire so it is not
> exposed.
>
> Tam/WB2TT

Thanks, Tam. I wasn't sure if there would be a difference going from
braid to solid.
On the cutting: I'm going for a really broad range of capacitance, which
is another factor for the threaded rods, as they can hold things steady
even if I have the coax nearly all the way out of the tube. I know such a
cap could handle a lot of power, but remember, a magloop runs at a very
low internal impedance, which means really high current AND voltage. I'm
not worried about dialectric melting, just puncture. Most magloop designs
I've seen call for 3kv breakdown voltage for 50 watts. 50 ohm coax
handling 1000W is carrying about 4.5A at 224V, RMS, so what is that, about
320V peak? Let's say they rate it for 100% safety factor at the legal
limit, so a round 1000V? Yeah, I guess you're right, about any coax
should handle my measly 5W, though I don't think voltage scales linearly
with power in a magloop... maybe with the square? That'd put me a bit
under 1000V. Heck, the worst that could happen is that I could lose my
only rig, and maybe get a nice RF burn, right?

So, what about radiation pattern and body tuning?

2418. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 21:56:17 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.08.01.21.56.11.340364@mailhot.reversethatanddropthis.com>
Source record: 111464

On Fri, 01 Aug 2003 11:23:54 -0700, Roy Lewallen wrote:

> Oops. The reason it makes no sense is that I screwed up and posted it to
> the wrong thread. Someone was asking about feeding a metal window frame,
> and that's what I intended it to refer to.
>
> I apologize for the goof and the confusion it caused.

Actually, I wasn't looking for an apology, but for a pointer back to the thread... it sounded interesting.
Now that I know which thread, I must point out - wouldn't trying to run a window frame as a magloop be a big dummy load? I'd think he'd be better off loading it as a capacitative plate. The high currents in a magloop going around that aluminum, and crossing what are probably just butt joints, would dissipate nearly all the power as heat.
Now, hanging a
picture in a frame made of copper pipe and feeding that would be a whole new ball game.

2419. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 22:00:39 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.08.01.22.00.33.22064@mailhot.reversethatanddropthis.com>
Source record: 111465

On Fri, 01 Aug 2003 08:17:00 +0000, ketalar wrote:

> OK, Igot one S point better with a croc clip to the frame. Ground was
> already connected.
Roy brought up a point on another thread by accident. Try using it like a magloop, and set a feed loop inside it. Once you're using it with circular currents, you'd do well to improve the electrical connection between the segments, as most window frames aren't assembled with an eye toward conductance.
Incidentally, you do intend this as a receiver only, right?

2420. Back after a long absence

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 22:18:38 UTC
From: yankneck696@aol.com
Message-ID: <a8791500.0308011418.7e446ccc@posting.google.com>
Source record: 111466

Hey, I am back, although no one will remember me...
I will be active (he he to some people's demise) I was "Goldreged" or KB1DQX.
I was wondering if someone could direct me to Reg's programs.
I am getting back to being an active Ham & Usenet poster.
Any help is greatly appreciated...
Oh, Hi, Cecil... I see you are still stirring the pot...

Ed

2421. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 23:45:32 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <SN6cnfSU0KI-ZreiXTWJjQ@comcast.com>
Source record: 111467

Tim,

The voltage rating on coax is a lot higher than what you would calculate based on max power. I can't find the numbers right now, but seem to recall that RG58 was rated at 750 V or more. The big stuff is good for over 2000V. The reason you don't want the end of the wire exposed is that it could lead to arcing or corona. Probably not at low power, though. Sorry, can't answer your other question.

Tam/WB2TT

2422. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-01 23:48:20 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <4aKdnXsB04_WYbeiU-KYgg@comcast.com>
Source record: 111468

Thanks
Tam

2423. Re: Building AUTO TUNER

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 00:26:06 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <761miv8rvs0cdr5ijf313qbagl6kj7cqbv@4ax.com>
Source record: 111446

On Fri, 01 Aug 2003 07:21:14 GMT, "Jimmy" <Gfender@carolina.rr.com>
wrote:

>I would like to build my own auto tunner and need info on software. My plan
>is to use a car ecu computer for the controller as it already has much of
>the digital an analog interface I will need, is rugged and cheap at the
>local scrap yard. Before someone yells "why are you using that for a
>controller", the point is to use one for something other than its intended
>purpose. I just thought an automatic antenna tuner would be a good use for
>one.
>

There was a series of articles on a software-controlled tuner in qst a
year or two ago.

Bob
k5qwg

2424. Re: Good antenna for a Denon AM/FM???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 01:33:37 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F2B14F1.6B82F857@cwis.net>
Source record: 111369

The random length wire should work okay for you,
and getting a ground isn't that hard at all! Go by
the garden ceter of Wal Marts, pick up a bag of
potting soil. Set the bag under your table where the
radio is and stick the end of a wire comming from the
ground terminal on your radio into the bag. Works
fine till all the moisture in the bag disapears, then
just wet the bag...
'Doc

2425. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 01:41:42 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgf4smkni1@hercules.btinternet.com>
Source record: 111370

"Bill" wrote
> I think it all boils down to signal to noise.
> If you are trying to communicate with another station and he is putting
out
> 100 watts and is not being copied and then he puts out 110 watts and you
can
> copy him that is what counts.
>
==========

Bill, sorry to be so pessimistic.

If, because of bad signal to noise ratio you can't copy him when he's using 100 watts, then, as sure as eggs don't bounce off concrete, there's no hope of any detectable improvement by increasing power to 110 watts or 0.4 dB.

Suppose when he's using 100 watts you can hear only 25% of words (or morse characters). So you can't copy him.

If he doubles power to 200 watts you will still read only 40% of what he says. So you still can't copy.

If he doubles power again to 400 watts you will be able to copy 60% of what he says. You will still be in big trouble.

At 800 watts 80% of words (or characters) will be OK but it's not solid copy. Requests to repeat will be common.

At 1600 watts 99% of words (or characters) will be OK and that's solid enough.

There are many assumptions in the foregoing crude analysis. But as many have experienced it is typical.

Claude E. Shannon's (of Bell Labs) original classical paper on the subject of "Communication in the Presence of Noise", Jan. 1949 can be downloaded (I have just discovered) by doing a Google on the title. Radio and phone engineers had been trying for 40 years to describe in precise mathematical terms the effects of noise and cross-talk in a communication channels. The transistor had just been invented. So had PCM pre-war. But progress in the design of the vast communication digital networks then envisaged and which we now see was being impeded by the lack of understanding of the effects of ever-present random noise.

It was basically a problem in Statistics. But Shannon went off at a tangent back to Geometry where Pythagorus the ancient Greek had begun. He translated the statistical problem into one of calculating the number of small spheres

which can be packed inside a much larger multi-dimensional sphere. The calculating procedure acquired the everlasting name of "Ball Packing". It is not difficult to understand. It was Shannon's dazzling multi-coloured flash of inspiration which did the trick. His name has gone down in history. Think of him the next time your electric light dimmer-switch goes faulty. Following Shannon progress forged ahead. In-words such as signal-to-noise ratios and error-rates became very popular.

A one-dimension sphere is a dot. A 2-dimension sphere is a flat circular disk. A 3-dimension sphere is a ball. Followed by N-dimensions, all of which have a surface area and and a volume involving Pi.

Reg.

2426. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 02:51:31 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f2b28e8_4@news1.prserv.net>
Source record: 111371

From some dealers it is available in 40 foot lengths, at least the smaller diameters <6".

Check the Yellow Pages for Farm Irrigation Supplies.

--
Crazy George
Remove NO and SPAM from return address
"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:JpydneqvG_CkCreiXTWJkg@comcast.com...
> Douglas,
>
> I hadn't thought of this, but is that for a mast or boom? I have used Al
> conduit for masts, but this sounds better for long pieces. Do you know how
> long a piece you can get?
>
> Tam/WB2TT
> "DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
> news:vij63l3a0ldr9a@corp.supernews.com...
> > It looks to me like most irrigation pipe sellers are out West.
> > Anyone know where a seller on the East coast is? It would
> > be nice to find one near me in Richmond VA that has used pipe.
> >
> >
> > Doug
> >
> > N4IJ
> >
> >
>
>

2427. BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 03:06:53 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308011906.2035aa43@posting.google.com>
Source record: 111372

I'd like to build a compact antenna/100W rig patch panel instead
getting involved with big expensive coax switches. Could be done
nicely with BNC connectors & RG-58. Does anybody have a link to a site
which provides freq (160M-440) vs. power handling ratings for BNC
connectors?

Tnx,

w3rv

2428. Re: Back after a long absence

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 03:07:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2b2c0a$1_7@corp.newsgroups.com>
Source record: 111373

Yankneck 696 wrote:
> Oh, Hi, Cecil... I see you are still stirring the pot...

The pot should be shaken, not stirred.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2429. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 04:15:47 UTC
From: Don <europa@bendcable.com>
Message-ID: <3F2B3AF3.19651E24@bendcable.com>
Source record: 111379

Hastings Nebraska is not the east coast, but the site below is reputed
by amateur astronomers to be a good source for aluminum tubing:

http://www.hipco-ne.com/scope.htm

Don

DOUGLAS SNOWDEN wrote:

> It looks to me like most irrigation pipe sellers are out West.
> Anyone know where a seller on the East coast is? It would
> be nice to find one near me in Richmond VA that has used pipe.
>
> Doug
>
> N4IJ

2430. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 04:29:52 UTC
From: ketalar <F5LCI@wanadoo.fr>
Message-ID: <61fmivkqk7p3ejqtm13v0ji0n9ur5m8gpe@4ax.com>
Source record: 111374

- Yes, that's only for receiving.
I need a decent signal for stereo, otherwise t is a bit noisy...
Coming back to the beginning of the discussion, I only wondered what would be the approximate distance between the feedpoints (given the size of the frame), and the capacitor range.
Gamma matching has always been a mystery for me....
Best regards to all,

On Fri, 01 Aug 2003 22:00:39 GMT, "Tim Conway" <n9hmg@mailhot.reversethatanddropthis.com> wrote:

>Incidentally, you do intend this as a receiver only, right?

2431. BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 04:50:25 UTC
From: robkemp90210@hotmail.com
Message-ID: <6114e4af.0308012050.7db84c86@posting.google.com>
Source record: 111375

Quote from the American Public Power Association; "the burden should
be imposed on challengers to BPL to demonstrate interference in a
fact-based, empirical proof. Further, to the extent that interference
is demonstrated, there should be an attempt to accommodate BPL, even
if it means that existing communications providers may have to share
or transfer bandwidth."
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287496

Critical everyone submits a reply comment ASAP.

To file, go here;
http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi
"Proceeding" field, enter "03-104"
"Document Type" select "Reply to comments"

Links for the key filings (pro BPL and anti BPL) are here;
http://www.arrl.org/~ehare/rfi/plc/BPL_NOI_hyperlinks.html

Good reply examples are below;
Notes
You can cut paste - key is the comments you submit represent your
thoughts.
You can also reply to support comments i.e. the ARRL comments have
your support.

Andrew Leeds - response to UPLC
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514288117

Lee McVey - response to Amperion
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287923

Nickolaus E. Leggett - response to NA Shortwave Association
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287539

Cortland Richmond - response to PowerWan
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287407

Lee McVey - response to UPLC
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287392

Cortland Richmond - response to Florida Light and Power
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287386

Arthur Guy - response to ARRL
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287323

Good general comments
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287303

Ashley Lane - response to Ameren
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287129

Nickolaus E. Leggett - response to ARRL
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287007

Cortland Richmond - response to Southern Linc
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286932

Nickolaus E. Leggett - response to National Academy of Science
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286161

Nickolaus E. Leggett - response to Amateur Radio Research and
Development Corp.
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286102

Lawrence Macioski - response to ARRL
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514083272

Robert Read - response to ARRL
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514082900

2432. Re: Good antenna for a Denon AM/FM???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 06:09:02 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <e5lmivc8uoink0ubendb69tchm6inaqo2p@4ax.com>
Source record: 111458

On Fri, 01 Aug 2003 09:42:51 -0700, fghgh <sdghj@j.fgh> wrote:

>I have a Denon 2500 receiver. The small external AM loop
>doesn't work well.
>Would just connecting about a 100' 12 ga wire to only one of
>the terminals and not grounding the other (too inconvenient)
>work.

It wouldn't cost anything to find out. Get a 100' roll of stranded #16 or so wire at RShack, attach one end to your antenna terminal, and unroll the wire. See what happens. I used to get good results with a piece of random length wire on the old AM receivers I started out with.

Bob
k5qwg

>Or are there better external indoor loops out there?

2433. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 07:44:11 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <oNdgsoELv2K$EAh7@ifwtech.co.uk>
Source record: 111382

Reg Edwards wrote:
>Suppose when he's using 100 watts you can hear only 25% of words (or
>morse characters). So you can't copy him.
>
>If he doubles power to 200 watts you will still read only 40% of what
>he says. So you still can't copy.
>
>If he doubles power again to 400 watts you will be able to copy 60% of
>what he says. You will still be in big trouble.
>
>At 800 watts 80% of words (or characters) will be OK but it's not solid
>copy. Requests to repeat will be common.
>
>At 1600 watts 99% of words (or characters) will be OK and that's solid
>enough.
>
>There are many assumptions in the foregoing crude analysis. But as many
>have experienced it is typical.
>

Typical for a machine, but not for a human being. For humans, "copying" very weak speech or Morse is mostly about *understanding* it as language.

In conversational speech, we don't always hear every word. Our minds are remarkably good at filling in gaps by using the broader context of the whole sentence. Even if you don't hear a word clearly, you can hear a word was there and your mind will automatically make a good guess, based on what we did hear before and after. It happens all the time, in conversations both on and off the air, and you don't even notice yourself doing it.

It's more obvious when copying Morse, where we more often fill in individual letters, but sometimes also whole words. We make very clever guesses about what the letter could have been, based on what we did manage to hear.

Often there is a threshold effect. Below that threshold, you can hear quite a lot but it doesn't make sense as language. Just above the threshold, it clicks into context and you can understand a whole stretch... and then maybe we lose it again.

It's also like listening to a language we only "half" know. That doesn't mean we understand a certain percentage of individual words, as a machine might. The way it really works with human beings, we're suddenly delighted to find ourselves understanding whole sentences... and then,

just as suddenly, we lose it again completely.

The exceptions are for certain key items like a callsign, name, QTH or contest exchange. These items come one by one (without context) and must be logged with 100% accuracy, so then it's rather more mechanical like Reg describes. But even for key words like phonetics, there is a threshold between hearing a sound, and that sound resolving itself into a recognisable word.

As any DXer knows, the threshold between "getting it" and "losing it" can indeed be as little as 1dB. The more serious you are about working right down to that threshold, the more that last 1dB matters.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2434. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 08:03:59 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <hMEy82GvB3K$EAw0@ifwtech.co.uk>
Source record: 111383

Brian Kelly wrote:
>I'd like to build a compact antenna/100W rig patch panel instead
>getting involved with big expensive coax switches. Could be done
>nicely with BNC connectors & RG-58. Does anybody have a link to a site
>which provides freq (160M-440) vs. power handling ratings for BNC
>connectors?

I don't know about a website, but it has often been discussed here. Try searching through
http://groups.google.com/advanced_group_search

It all comes down to the RF current through the center connection. This is partly about skin effect and surface conductivity, but equally important - and less predictable - is accurate assembly of the center pins.

If at all possible, use connectors with captive center pins. This removes the biggest source of inaccuracy in amateur assembly.

All the contact pressure in a BNC derives from the rubber washer inside the bayonet ring. A good BNC should need quite a hard twist to make the bayonet click into place... and in old surplus plugs, this springiness does wear out.

Bottom line: BNCs in good condition are fine for 100W at 440MHz, so they're good for that power level at any lower frequency too.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2435. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 09:28:21 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bgg07o$obg8f$1@ID-134747.news.uni-berlin.de>
Source record: 111376

For FM go to Radio Shack. Buy a folded dipole
(420-2385) for less than $5.00. Put it up as an
inverted V so that it is omni directional. Enjoy
your radio.

--
73 es cul

wb3fup
a Salty Bear

"ketalar" <F5LCI@wanadoo.fr> wrote in message
news:61fmivkqk7p3ejqtm13v0ji0n9ur5m8gpe@4ax.com...
> - Yes, that's only for receiving.
> I need a decent signal for stereo, otherwise t
is a bit noisy...
> Coming back to the beginning of the discussion,
I only wondered what
> would be the approximate distance between the
feedpoints (given the
> size of the frame), and the capacitor range.
> Gamma matching has always been a mystery for
me....
> Best regards to all,
>
>
> On Fri, 01 Aug 2003 22:00:39 GMT, "Tim Conway"
> <n9hmg@mailhot.reversethatanddropthis.com>
wrote:
>
> >Incidentally, you do intend this as a receiver
only, right?
>

2436. REQ: TEKK NT-20 Programming info

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 09:53:04 UTC
From: USA <Mail@me.com>
Message-ID: <id2niv0vqi9p434a5rbqhkkek1n1c6quqo@4ax.com>
Source record: 111377

REQ: TEKK NT-20 Programming info
Software if available and information on cables needed to program TEKK
NT-20.

2437. REQ: TEKK NT-20 Programming

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 09:53:18 UTC
From: USA <Mail@me.com>
Message-ID: <3g2niv47c55smutb15jo2mlj6sc87ag6cc@4ax.com>
Source record: 111378

REQ: TEKK NT-20 Programming info
Software if available and information on cables needed to program TEKK
NT-20.

2438. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 11:16:33 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308020316.6f6701ef@posting.google.com>
Source record: 111380

"Jimmy" <Gfender@carolina.rr.com> wrote in message
news:<CymWa.367565$jp.10455857@twister.southeast.rr.com>...
> When I lived in GA most of the feed and seed places carried it. Visit one, I
> bet if they dont have it they can get it or tell you where.
> "DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
> news:vij63l3a0ldr9a@corp.supernews.com...
> > It looks to me like most irrigation pipe sellers are out West.
> > Anyone know where a seller on the East coast is? It would
> > be nice to find one near me in Richmond VA that has used pipe.

I bought a number of 40 ft. lengths of standard 3" and 4" O.D. x ~
0.060" wall aluminum irrigation tubing a *lot* of years ago which I
used to build a half-dozen or so fullsize two element 40M Yagis for
fellow members of my neighborhood dx contesting club. These were big,
heavy antennas with 70 foot long driven elements and I used the 4"
material for the 20 foot booms. Irrigation tubing supply sources were
all over southern New Jersey which is known for it's vegetable farming
and is where I bought mine. I've seen fields full of Al irrigation
tubing in Eastern MD which is a bit closer to Richmond. There are East
coast sources, ya gotta poke around.

I still have one 40 foot length of 4" tubing and one 40 foot length of
3" tubing. I need to get rid of them and I'll be glad to donate both
gratis to any licensed ham who will cart them off and get 'em out of
my life.

> > Doug
> >
> > N4IJ

Brian W3RV
Philadelphia area

2439. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 12:10:14 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <GSNWa.2373$IL.382511@nnrp1.ptd.net>
Source record: 111381

The deadline for Reply Comments was extended to Aug. 20th
by an Order issued by Ed Thomas, Chief of the FCC's OET
yesterday ...

So folks still have a bit of time to prepare and file reply comments.

Carl - wk3c

"Rob Kemp" <robkemp90210@hotmail.com> wrote in message
news:6114e4af.0308012050.7db84c86@posting.google.com...
> Quote from the American Public Power Association; "the burden should
> be imposed on challengers to BPL to demonstrate interference in a
> fact-based, empirical proof. Further, to the extent that interference
> is demonstrated, there should be an attempt to accommodate BPL, even
> if it means that existing communications providers may have to share
> or transfer bandwidth."
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287496
>
> Critical everyone submits a reply comment ASAP.
>
> To file, go here;
> http://gullfoss2.fcc.gov/prod/ecfs/upload_v2.cgi
> "Proceeding" field, enter "03-104"
> "Document Type" select "Reply to comments"
>
> Links for the key filings (pro BPL and anti BPL) are here;
> http://www.arrl.org/~ehare/rfi/plc/BPL_NOI_hyperlinks.html
>
> Good reply examples are below;
> Notes
> You can cut paste - key is the comments you submit represent your
> thoughts.
> You can also reply to support comments i.e. the ARRL comments have
> your support.
>
> Andrew Leeds - response to UPLC
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514288117
>
> Lee McVey - response to Amperion
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287923
>
> Nickolaus E. Leggett - response to NA Shortwave Association

>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287539
>
> Cortland Richmond - response to PowerWan
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287407
>
> Lee McVey - response to UPLC
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287392
>
> Cortland Richmond - response to Florida Light and Power
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287386
>
> Arthur Guy - response to ARRL
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287323
>
> Good general comments
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287303
>
> Ashley Lane - response to Ameren
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287129
>
> Nickolaus E. Leggett - response to ARRL
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514287007
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> Cortland Richmond - response to Southern Linc
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http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286932
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> Nickolaus E. Leggett - response to National Academy of Science
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http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286161
>
> Nickolaus E. Leggett - response to Amateur Radio Research and
> Development Corp.
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514286102
>
> Lawrence Macioski - response to ARRL
>
http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514083272
>
> Robert Read - response to ARRL
>

http://svartifoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514082900

2440. Vee Beam info needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 12:48:48 UTC
From: Sgordon <noshoes2@yahoo.com>
Message-ID: <QqOWa.15274$Vx2.7749441@newssvr28.news.prodigy.com>
Source record: 111384

Considering putting up a Vee Beam for 17 meters. I then ran across a couple websites that show a multiband Vee Beam cut for 15 tuning it for 6-20m. Has anyone built even a mono-band Vee Beam? How did it preform?
If you would cut one for say 40 meters and feed with opern wire, how will it preform on the higherbands? Just really looking for some more info on them.

--
Sincerely,
Scott Gordon
Phone: 1-888-428-6622
Pre-Recorded Call 1-888-295-2806
Yahoo Chat ID scott1gordon
AOL ID scott1gordon
http://best.justsaycash.com/ Just Say Cash
http://best.toxicfreehomes.com/ Is Your Home A Healthy Home?
http://best.smilestarters.com/ FREE e-Greeting Cards
==========

2441. Re: Vee Beam info needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 14:28:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2bcba8_7@corp.newsgroups.com>
Source record: 111385

Sgordon wrote:
> Considering putting up a Vee Beam for 17 meters. I then ran across a couple
> websites that show a multiband Vee Beam cut for 15 tuning it for 6-20m. Has
> anyone built even a mono-band Vee Beam? How did it preform?
> If you would cut one for say 40 meters and feed with opern wire, how will it
> preform on the higherbands? Just really looking for some more info on them.

There's a fair amount of info on V-antennas in the 15th edition of The ARRL
Antenna Book including sloping terminated V's.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2442. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 15:35:03 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bggln9$ot1pm$1@ID-134747.news.uni-berlin.de>
Source record: 111386

And we can look at it going the other way. I can run my FT-817 with its 5 watt signal for a lot less money than my friend Jim can operate his kilowatt. If the band is open The difference between my 5 watt signal and his 1000 watt signal is 2 or three S units at the far end of the circuit. Not enough to be really noticeable. If the band is closed, nobody is talking long distance, the band is closed. Now when conditions are marginal he has a decided advantage. Right now I am happy burning a kilowatt of power purchased from the electric company every 15 hours while he gets about 20 minutes operating time for his station for the same dollars.

--
73 es cul

wb3fup
a Salty Bear

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message news:oNdgsoELv2K$EAh7@ifwtech.co.uk...
> Reg Edwards wrote:
> >Suppose when he's using 100 watts you can hear only 25% of words (or
> >morse characters). So you can't copy him.
> >
> >If he doubles power to 200 watts you will still read only 40% of what
> >he says. So you still can't copy.
> >
> >If he doubles power again to 400 watts you will be able to copy 60% of
> >what he says. You will still be in big trouble.
> >
> >At 800 watts 80% of words (or characters) will be OK but it's not solid
> >copy. Requests to repeat will be common.
> >
> >At 1600 watts 99% of words (or characters) will be OK and that's solid
> >enough.
> >
> >There are many assumptions in the foregoing

crude analysis. But as many
> >have experienced it is typical.
> >
>
> Typical for a machine, but not for a human
being. For humans, "copying"
> very weak speech or Morse is mostly about
understanding it as
> language.
>
> In conversational speech, we don't always hear
every word. Our minds are
> remarkably good at filling in gaps by using the
broader context of the
> whole sentence. Even if you don't hear a word
clearly, you can hear a
> word was there and your mind will automatically
make a good guess, based
> on what we did hear before and after. It happens
all the time, in
> conversations both on and off the air, and you
don't even notice
> yourself doing it.
>
> It's more obvious when copying Morse, where we
more often fill in
> individual letters, but sometimes also whole
words. We make very clever
> guesses about what the letter could have been,
based on what we did
> manage to hear.
>
> Often there is a threshold effect. Below that
threshold, you can hear
> quite a lot but it doesn't make sense as
language. Just above the
> threshold, it clicks into context and you can
understand a whole
> stretch... and then maybe we lose it again.
>
> It's also like listening to a language we only
"half" know. That doesn't
> mean we understand a certain percentage of
individual words, as a
> machine might. The way it really works with
human beings, we're suddenly
> delighted to find ourselves understanding whole
sentences... and then,
> just as suddenly, we lose it again completely.
>

> The exceptions are for certain key items like a
callsign, name, QTH or
> contest exchange. These items come one by one
(without context) and must
> be logged with 100% accuracy, so then it's
rather more mechanical like
> Reg describes. But even for key words like
phonetics, there is a
> threshold between hearing a sound, and that
sound resolving itself into
> a recognisable word.
>
> As any DXer knows, the threshold between
"getting it" and "losing it"
> can indeed be as little as 1dB. The more serious
you are about working
> right down to that threshold, the more that last
1dB matters.
>
>
> --
> 73 from Ian G3SEK 'In Practice'
columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF
DX Book'
> http://www.ifwtech.co.uk/g3sek

2443. FA: Large Air Wound Coil

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 15:51:21 UTC
From: ga_boneyard <nospam_ga_boneyard@hotmail.com>
Message-ID: <hZQWa.3710$qf.2641@lakeread06>
Source record: 111387
Cross-posted to:
alt.ham-radio.marketplace,rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.equipment,rec.radio.swap

Please see:

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3039049934

Thanks for looking..

73,

Larry
KQ4BY

2444. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 15:56:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n9nniv8i06eih1aobmr1rnkfi31j4semac@4ax.com>
Source record: 111388

On Sat, 02 Aug 2003 06:29:52 +0200, ketalar <F5LCI@wanadoo.fr> wrote:

>- Yes, that's only for receiving.
>I need a decent signal for stereo, otherwise t is a bit noisy...
>Coming back to the beginning of the discussion, I only wondered what
>would be the approximate distance between the feedpoints (given the
>size of the frame), and the capacitor range.
>Gamma matching has always been a mystery for me....
>Best regards to all,

Hi OM,

Odd no one has actually answered your question.

However, it pretty much depends on the physical dimensions of the window frame (does the sash present a moving short across it?) before a solid value would work. You also suffer a potential problem of it pointing the wrong way to serve your needs (how would you tune it, if it didn't hear anything?). Also, where you put the Gamma match would also affect how it tuned up.

Another point, if you just made the match a little longer, threw away the capacitor, and screwed it to the wall instead; then it would probably do just as well.

Hint: you may solve your problem more with height (put a simple dipole up higher) than with tuning.

73's
Richard Clark, KB7QHC

2445. Horizontal stack 2 x 5 Elements DELTA LOOP : first pictures are online

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 19:49:18 UTC
From: paypay <qsl.concept@wanadoo.fr>
Message-ID: <bgh4jv$8af$1@news-reader5.wanadoo.fr>
Source record: 111389

Good morning everybody,

I just have published the first pictures on my last realisation. This is an horizontal stack of 2 x 5 Elements DELTA LOOP for 144/146 MHz

You can see them at :

http://perso.wanadoo.fr/oli/delta-loop.htm

Good visit and of course, commentaries are welcome

Oli

2446. Re: Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 20:22:19 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vio7bqffj7h386@corp.supernews.com>
Source record: 111391

Did they move to KY? The firm was based here in Michigan - about 50 miles north of Detroit. They made/make good quality. As I recall, their specifications used a safety-factor of one - but, it was in the fine print. Have two of their crank-over towers used on top of tall building. 73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message news:oMadnfjRZK6yUbSiXTWJjQ@comcast.com...
> www.universltower.com is the web site for a Universal Tower in Henderson KY.
> It will not come up. You could always try calling them on the 'phone, or ask
> the Texas Towers sales rep what the story is.
>
> Tam/WB2TT

2447. Re: Bob Hope

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-02 20:54:17 UTC
From: Dale Martin <nitram@rap.midco.net>
Message-ID: <bgh4oc$ooehc$1@ID-169764.news.uni-berlin.de>
Source record: 111390

A cartoon appeared in the Fort Dodge Messenger I think is most appropriate. Bob Hope is at the pearly gates and St. Peter is leaning over and telling him the Veterans are waiting your on in five minutes! As a former GI myself this man was always there for us during the worst of times. Thank you, God bless you. Keep the guys and gals up there entertained as well as you did for us down here.

-
Dale Martin
NAR 80678 L2
N0JFM

"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
news:bg4286$b7p$1@slb4.atl.mindspring.net...
>
> "Alan P. Biddle" <APBIDDLE@ATT.NET> wrote in message
> news:3rvaivocvut7bil5u6lo1bhm82bvgi9vqk@4ax.com...
> > I have this whimsical picture in my mind of Bob and Bing doing the
> > patty cake routine on St. Peter, and then soft shoeing through the
> > Pearly Gates.
> >
> > Thanks for the memories!
> >
> > Alan
> >
> I saw Bob and company at Tan Son Nhut Airbase, Republic of Vietnam back
in
> the 60s. I didn't get close because I was on duty. But was near enough
to
> hear the roars of joy. What a site. Thousands of GIs wearing everything
> from class A uniforms to dirty combat boots standing and cheering this
> American HERO.
>
> This morning I shed a tear. Goodby Bob....yes indeed...thanks for the
> memories (the only good ones I have of that time).
>
> Dan/W4NTI
>
>

2448. Re: Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 00:19:10 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <b_6dnS0kJvKwyLGiU-KYgw@comcast.com>
Source record: 111392

I think the outfit in KY is somebody else. I found Universal Tower.
www.universaltruss.com is located in Clinton Township, Michigan. As the name
implies, their big thing is trusses. Did not see any info on towers. Address
matches that for Universal Manufacturing in the AES catalog. The AES cat.
says they are shipped FOB Mt. Clemens, but that appears to be the same place
if you look at their map.

Tam/WB2TT
"J. McLaughlin" <JCM@Power-Net.Net> wrote in message
news:vio7bqffj7h386@corp.supernews.com...
> Did they move to KY? The firm was based here in Michigan - about 50
> miles north of Detroit. They made/make good quality. As I recall,
> their specifications used a safety-factor of one - but, it was in the
> fine print. Have two of their crank-over towers used on top of tall
> building. 73 Mac N8TT
>
> --
> J. Mc Laughlin - Michigan USA
> Home: JCM@Power-Net.Net
>
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
> news:oMadnfjRZK6yUbSiXTWJjQ@comcast.com...
> > www.universsltower.com is the web site for a Universal Tower in
> Henderson KY.
> > It will not come up. You could always try calling them on the 'phone,
> or ask
> > the Texas Towers sales rep what the story is.
> >
> > Tam/WB2TT
>
>

2449. Re: Is Universal Towers (auminum towers) Still in Business ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 02:01:57 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308021801.76ee4de9@posting.google.com>
Source record: 111393

"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:<vibnui28tvh453@corp.supernews.com>...
> I see a couple of sellers (AES and Texas Towers) have them but I cannot seem
> to find them anywhere on the web. Are these dealers selling stock that they
> have ?
>
> Doug N4IJ

They advertise off & on in QST. Check the "Index of Advertisers" in
the backs of a few issues.

w3rv

2450. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 02:04:45 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bghqjv$omqud$1@ID-134747.news.uni-berlin.de>
Source record: 111394

Actually only the morse operators will have half a chance of operating if the BPL goes through. They need the least amount of signal to be able to communicate. I am primarily a phone operator. I need to get my comments in. Off to do that now.
--
73 es cul

wb3fup
a Salty Bear

"Keith" <kilowattradio_spam@earthlink.net> wrote in message news:bghofs011vu@enews2.newsguy.com...
> On 1 Aug 2003 21:50:25 -0700, robkemp90210@hotmail.com (Rob Kemp) wrote:
>
> > Critical everyone submits a reply comment ASAP.
>
> You might as well as piss into a hurricane force wind. BPL will happen and ham
> radio will go the way of the dinosaurs. America can't let a few thousand morse
> code fanatics stop modern technology for millions of consumers. If there were 2
> or 3 million active ham radio operators then that might make a difference, but
> for decades the ARRL has done everything to keep people out of the HF bands by
> forcing the stupid morse code requirements down the throats of the average
> consumer that has no interest in morse code.
> The morse code fanatics among ham radio operators dug their own grave and have
> no on else to blame. BPL is progress for America, ham radio is the old
> technology.
>
>
> --
> The Radio Page Ham, Police Scanner, Shortwave and more.
> http://www.kilowatt-radio.org/
> ..it does not require a majority to prevail, but rather an

> irate, tireless minority to set brush fires in
people's
> minds. --Samuel Adams

2451. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 02:13:11 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308021813.205e4274@posting.google.com>
Source record: 111395

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<hMEy82GvB3K$EAw0@ifwtech.co.uk>...
> Brian Kelly wrote:
> >I'd like to build a compact antenna/100W rig patch panel instead
> >getting involved with big expensive coax switches. Could be done
> >nicely with BNC connectors & RG-58. Does anybody have a link to a site
> >which provides freq (160M-440) vs. power handling ratings for BNC
> >connectors?
>
> I don't know about a website, but it has often been discussed here. Try
> searching through
> http://groups.google.com/advanced_group_search

I milked it and came close but nothing really definitive.

> It all comes down to the RF current through the center connection. This
> is partly about skin effect and surface conductivity, but equally
> important - and less predictable - is accurate assembly of the center
> pins.
>
> If at all possible, use connectors with captive center pins. This
> removes the biggest source of inaccuracy in amateur assembly.

Aha: I didn't realize they come in different mechanical designs.

> All the contact pressure in a BNC derives from the rubber washer inside
> the bayonet ring. A good BNC should need quite a hard twist to make the
> bayonet click into place... and in old surplus plugs, this springiness
> does wear out.
>
> Bottom line: BNCs in good condition are fine for 100W at 440MHz, so
> they're good for that power level at any lower frequency too.

If you say they're OK for 100W @ 440Mhz that's good enough for me. I
know where to get new top-quality connectors and I'll take it from
here. Tnx Ian.

Brian w3rv

2452. Antenna Specialists MON-4 VHF Low Band Scanner antenna - Can I trim it for 6 meter use ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 02:33:23 UTC
From: Steve Stone <spfleck@zzcitlinkzz.net>
Message-ID: <Tv_Wa.17780$8w6.5987@news02.roc.ny>
Source record: 111396

I have new in the box Antenna Specialists MON-4 ground plane for scanning 30 - 50 MHz. It seems to be just a hunk of metal, no coils, etc. Any reason why I shouldn't cut it for use with my 6 meter rig? Can't find any details on their web site. It has to be 1970's vintage 1//4 wave ground plane. Got it from my father in law years ago. He was a volunteer fireman

Steve

--

>> Remove "zz" from e-mail address to direct reply. <<

2453. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 03:09:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2c7e02_3@corp.newsgroups.com>
Source record: 111397

WB3FUP (Mike Hall) wrote:
> Actually only the morse operators will have half a
> chance of operating if the BPL goes through. They
> need the least amount of signal to be able to
> communicate.

Actually, PACTOR II gets through when I can't even hear
the CW ID signals.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2454. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 03:30:18 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bghvkc$ov6lv$1@ID-134747.news.uni-berlin.de>
Source record: 111398

But will the BPL give the Pactor something else to grab hold of? I do not know - just asking. My radio station goes into a briefcase and the computer does not have a sound card, or would be able to figure out what to do with it if it had one. It is a R/S TRS 80 Model 100. It can handle packet, I don't know about other digital modes. Into the brief case goes: FT817, Paddles, R/S DSP unit (I know it ain't great, but it helps), MFJ259, Small Tuner, Crappie Dipole, Super Antenna MD-1, R/S Computer, KAM 3, Solar Panel, Coleman Jump Battery. Have Station will travel.

--
73 es cul

wb3fup
a Salty Bear

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message news:3f2c7e02_3@corp.newsgroups.com...
> WB3FUP (Mike Hall) wrote:
> > Actually only the morse operators will have half a
> > chance of operating if the BPL goes through. They
> > need the least amount of signal to be able to
> > communicate.
>
> Actually, PACTOR II gets through when I can't even hear
> the CW ID signals.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2455. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 03:47:45 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <-WadnXqpgPt0GLGiU-KYuQ@comcast.com>
Source record: 111399

BNCs are almost universally used for non microwave test equipment. So, I have used them a lot. My biggest problem has been the shield not making good contact with the body of the connector after a while. By far, I have had the fewest problems with the kind where a sleeve is crimped over the outer insulation to provide strain relief. On the better connectors, this sleeve is about an inch long. You do not want to allow any flexing of the bare shield.

Tam/WB2TT
"Brian Kelly" <kelly@dvol.com> wrote in message
news:d22b54c3.0308011906.2035aa43@posting.google.com...
> I'd like to build a compact antenna/100W rig patch panel instead
> getting involved with big expensive coax switches. Could be done
> nicely with BNC connectors & RG-58. Does anybody have a link to a site
> which provides freq (160M-440) vs. power handling ratings for BNC
> connectors?
>
> Tnx,
>
> w3rv

2456. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 06:13:15 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <%J1Xa.378833$jp.10771494@twister.southeast.rr.com>
Source record: 111400

Saddam is just a power hungry idiot regardless of how he came into power. He could have amassed wealth and power far beyound what he did by playing the "good guy". Iraq is the perfect country to be controlled by a benevolent dictator.

"Dr. Slick" <radio913@aol.com> wrote in message news:1d15af91.0307290916.6cd16341@posting.google.com...
> k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message news:<20030728125342.27688.00000631@mb-m23.aol.com>...
> > >
> > > Too bad both Saddam and Bin Laden were both monsters created by
> > >the CIA, that is, the USA government.
> >
> > As Bill Crosby said: I brought you into this world, I can take you out.
> > Maybe one lesson Bin Saddams can learn: "Don't push it!"
> >
>
> In CIA parlance, it's called "blowback". It's a nasty world, but
> if you create monsters, don't expect them to behave as you wish all
> the time.
>
>
> Slick

2457. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 06:38:49 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <Z52Xa.378834$jp.10773158@twister.southeast.rr.com>
Source record: 111401

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
news:85ed38d.0308011220.4d7ac1@posting.google.com...
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f2a4e49$1_2@corp.newsgroups.com>...
> > Jimmy wrote:
> > > I would suggest that anyone that strapped for cash use transmission
line
> > > segments for impedance matching. That is about as cheap as it gets.
> >
> > Yep, I bought an SGC-500 amp and didn't want to spring for a high power
> > tuner. So I vary my window-line length to obtain a match.
>
> Cecil, the idea that you have is quite unique but I was thinking
> of the newby ham. To capture the future hams of tomorrow we must
> enable them to get them on the air as quickly and cheaply as
> possible and not dissuade them in any way as to how much they
> will be paying in the future, and that is where my thoughts lie.
> If a newcomer is to put up a G5RV so that he can get on the
> air quickly,I thought that buying a RF transformer would be a
> quick way of getting on the air and getting the taste for ham radio.
> To be honest Cecil no newby is going to struggle with your method
> in his early days.
> If one could arrange a way to run thru a series of impedance ratio's
> with just one knob then we have hooked those who are curious, even
> when using the most plainess of wires or the gutter we have fed the
> mind, remote control systems can come later. Frankly when you are
> hooked by ham radio money ceases to become an issue.
> Art

Actually I would think a newbie would be the one most likely to embrace
Cecil's method. Its the guys who have been around a while who want
everything controlled at their armchair(like me). This is not to say that
Cecils method could not be controoled from the shack, Just replace some of
those switches with relays and maybe make some custum impedance feedline for
even a better match that what he shows though you dont really need it. This
sort of setup could even be controlled by a lot of radios that provide for a
means of automatic antenna switching.

2458. Re: Irrigation pipe for antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 06:47:14 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <Sd2Xa.378835$jp.10774199@twister.southeast.rr.com>
Source record: 111402

I remember now that it also came in 30ft lengths but that was too long for what we were using it.

"Jimmy" <Gfender@carolina.rr.com> wrote in message news:5oyWa.317855$_w.12798198@twister.southeast.rr.com...
> Been a while but I think they are at least 20 ft maybe a little more. They
> make great booms especially if they are filled with foam insulation to keep
> them from being crushed. They are fairly thin walled.
>
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
> news:JpydneqvG_CkCreiXTWJkg@comcast.com...
> > Douglas,
> >
> > I hadn't thought of this, but is that for a mast or boom? I have used Al
> > conduit for masts, but this sounds better for long pieces. Do you know how
> > long a piece you can get?
> >
> > Tam/WB2TT
> > "DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
> > news:vij63l3a0ldr9a@corp.supernews.com...
> > > It looks to me like most irrigation pipe sellers are out West.
> > > Anyone know where a seller on the East coast is? It would
> > > be nice to find one near me in Richmond VA that has used pipe.
> > >
> > >
> > > Doug
> > >
> > > N4IJ
> > >
> > >
> >
> >
> >
>

2459. Re: Vee Beam info needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 07:24:59 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308022324.40eab11b@posting.google.com>
Source record: 111403

"Sgordon" <noshoes2@yahoo.com> wrote in message
news:<QqOWa.15274$Vx2.7749441@newssvr28.news.prodigy.com>...
> Considering putting up a Vee Beam for 17 meters. I then ran across a couple
> websites that show a multiband Vee Beam cut for 15 tuning it for 6-20m. Has
> anyone built even a mono-band Vee Beam? How did it preform?
> If you would cut one for say 40 meters and feed with opern wire, how will it
> preform on the higherbands? Just really looking for some more info on them.

Vee beams, being basically half a rhombic, are not really cut to any
one frequency.
The only real consideration as to length, is to the amount of gain you
will get.
That will vary on the length of the wires per wavelength of the
frequency being used at the time. You can use one on any band, if it's
long enough to qualify as a true vee beam, but you would design the
length for the amount of gain you want on the lowest band to be used.
One wave per leg would be the minimum, and that's not much of a vee
beam. Most are multi waves per leg. Feeding with a tuner and open wire
line as you suggest will be fine, and is the usual method used. The
higher the freq, the higher the gain in general. The angle between the
wires needs to be considered though. In general, the longer the
antenna in wavelengths, the smaller the angle between the wires for
optimum results. MK

2460. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 07:32:54 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <8hXlHuBmqLL$EAZB@ifwtech.co.uk>
Source record: 111405

Brian Kelly wrote:
>"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
>news:<hMEy82GvB3K$EAw0@ifwtech.co.uk>...
>>
>> Bottom line: BNCs in good condition are fine for 100W at 440MHz, so
>> they're good for that power level at any lower frequency too.
>
>If you say they're OK for 100W @ 440Mhz that's good enough for me. I
>know where to get new top-quality connectors and I'll take it from
>here. Tnx Ian.

If you're going to spend money, then be sure to buy plugs with a captive pin and pressure-sleeve ("top hat") cable clamp.

They are more expensive than the original MIL type, but much better for hand assembly and much easier to remove and re-use... in other words, they're good long-term value for amateurs.

An example is the Tyco/Greenpar 1-1478401-0. There should be a disassembled picture at www.farnell.com/uk - search for part number 3977754. (The parts aren't laid out in quite the right order, but you'll get the idea.)

Personally I wouldn't use crimp connectors without the correct tools to make the full six-sided crimps in the two different sizes required. Also they cannot be re-used, which makes them poorer value for (most) amateurs.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2461. VHF Antenne Cushcraft 17B2

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 08:17:41 UTC
From: Patrick <on1oe@amsat.org>
Message-ID: <3f2cc533$0$17629$ba620e4c@reader1.news.skynet.be>
Source record: 111404

Te koop aangeboden 2 meter boomer (144-145) Type 17B2 van Cushcraft
In zeer goede staat. Is trouwens nog in gebruik.
Vaste vraagprijs 175?
Voor info email on1oe@amsat.org '73s Patrick (ON1OE)

2462. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 09:36:21 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308030136.7e5e7510@posting.google.com>
Source record: 111406

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308011220.4d7ac1@posting.google.com>...
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f2a4e49$1_2@corp.newsgroups.com>...
> > Jimmy wrote:
> > > I would suggest that anyone that strapped for cash use transmission line
> > > segments for impedance matching. That is about as cheap as it gets.
> >
> > Yep, I bought an SGC-500 amp and didn't want to spring for a high power
> > tuner. So I vary my window-line length to obtain a match.
>
> Cecil, the idea that you have is quite unique but I was thinking
> of the newby ham. To capture the future hams of tomorrow we must
> enable them to get them on the air as quickly and cheaply as
> possible and not dissuade them in any way as to how much they
> will be paying in the future, and that is where my thoughts lie.

Sounds kinda like you want a "venus ham trap"....:/

> If a newcomer is to put up a G5RV so that he can get on the
> air quickly,I thought that buying a RF transformer would be a
> quick way of getting on the air and getting the taste for ham radio.

I think stringing up a coax fed dipole is about the easiest of all
antennas.

> To be honest Cecil no newby is going to struggle with your method
> in his early days.

I'm sure many would. It's not that hard to rig up.

> If one could arrange a way to run thru a series of impedance ratio's
> with just one knob then we have hooked those who are curious, even
> when using the most plainess of wires or the gutter we have fed the
> mind, remote control systems can come later.

Huh??? I thought this was already solved in my previous post where I
reinvented the L network. Even the poorest of hams can likely scrounge
an oatmeal carton.

Frankly when you are
> hooked by ham radio money ceases to become an issue.

Luckily, most antennas can be built for fairly low cost.
Now radios.....:(
I'm too lazy to build radios when nothing I can build is as good or
better than what I can buy. MK

2463. Re: Antenna Specialists MON-4 VHF Low Band Scanner antenna - Can I trim it for 6 meter use ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 12:09:36 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <4Y6Xa.40029$lt4.23190@rwcrnsc51.ops.asp.att.net>
Source record: 111407

Steve -

You can call AS technical support - for specific inquiries

Phone: (440) 349-8400
E-mail: technical@allentele.com
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

"Steve Stone" <spfleck@zzcitlinkzz.net> wrote in message
news:Tv_Wa.17780$8w6.5987@news02.roc.ny...
>
> I have new in the box Antenna Specialists MON-4 ground plane for scanning
> 30 - 50 MHz. It seems to be just a hunk of metal, no coils, etc. Any
reason
> why I shouldn't cut it for use with my 6 meter rig? Can't find any
details
> on their web site. It has to be 1970's vintage 1//4 wave ground plane. Got
> it from my father in law years ago. He was a volunteer fireman
>
>
> Steve
>

2464. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 14:39:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2d1fc4_8@corp.newsgroups.com>
Source record: 111408

Jimmy wrote:
> Actually I would think a newbie would be the one most likely to embrace
> Cecil's method. Its the guys who have been around a while who want
> everything controlled at their armchair(like me). This is not to say that
> Cecils method could not be controlled from the shack, Just replace some of
> those switches with ...

I control the switches from my shack. They are mounted on a piece of
plexiglas sitting vertical in a window. It takes less time to throw
the switches than to tune an antenna tuner.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2465. Re: I have an antenna transmission line problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 15:13:51 UTC
From: W4WNT <w4wnt@carolina.rr.com>
Message-ID: <PE9Xa.321400$_w.13143218@twister.southeast.rr.com>
Source record: 111409

Hi Larry,

Looks like a job for RAG-58 coax. Foam insulation in 1 inch square cross section will allow you to run the coax under the sliding window. Another piece in the top of the lower pane will provide temperature insulation. To get past the screen, can you cut a notch in the window sill large enough to pass the coax under the screen?

Good luck.

Bill, W4WNT
"larry" <larya24@hotmail.com> wrote in message
news:offWa.33277$hOa.16245@news02.bloor.is.net.cable.rogers.com...
> Greetings
>
> Lets see where do I start. I have been licenced since I was 16, in 1964.
> My ham startion was located in the basement. My first antenna, a random
> wire, ran from my antenna coupler, an L network, along the basement
ceiling
> out a hole drill in the frame of a basement window, up to, and over, the
> eavestrough and down the backyard to the cloths line pole. About 75 feet.
> Worked great on 80, 40, 20 meters.
>
> Since then a pine tree located this on the house side of the pole has
grown
> to all but block my route to that pole.
>
> Lots of time has gone by plus interests, etc, and I am planning a return
to
> hf, perferably cw.
>
> My ham station has now moved from the basement, same house, to my old
> bedroom facing the back of the house. My bedroom in now at the front side
> of the house.
>
> The most direct route to the back yard is now via a window. The window
has
> a permanent screen on the outside, it can be removed for changing, repair
> etc. On the inside is a weather designed up and down sliding glass
window.
>
> My question is: is it possible to design something to allow me to pass a
> transmission line, of any type, through a screen window, without
> significantly effecting the characteristics of the transmission line and
> without effecting the integrity of the screen window?

>
> Larry ve3fxq
> larya@rogers.com
>
>
>
>
>

2466. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 17:08:43 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <vkbXa.55936$o%2.27572@sccrnsc02>
Source record: 111410

Quite true. If the newbie on a budget doesn't want to build something but wants on the air multiband cheap, MFJ sells an L-network random wire tuner for about $40.00.
"Mark Keith" <nm5k@wt.net> wrote in message news:25eb70d7.0307292113.2bd4597e@posting.google.com...
>
> I'd rather wind a coil, "oatmeal tube carton"? and find a good
> variable cap, and make a simple L network to feed a random wire. I'd
> rather not use an apple to do a job that an orange should rightfully
> have. :/ MK

2467. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 17:33:15 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308030933.15b70e6a@posting.google.com>
Source record: 111411

"Jimmy" <Gfender@carolina.rr.com> wrote in message
news:<%J1Xa.378833$jp.10771494@twister.southeast.rr.com>...
> Saddam is just a power hungry idiot regardless of how he came into power. He
> could have amassed wealth and power far beyound what he did by playing the
> "good guy". Iraq is the perfect country to be controlled by a benevolent
> dictator.
>

Well, i can think of another power hungry idiot in the White
House...

And Saddam WAS the good guy, back when he was fighting Iran, as
was Bin Laden fighting the Russians in Afghanistan, remember?

I suppose by benevolent dictator, you mean George Bush?

American Imperialism! Horray!

Slick

2468. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 17:45:17 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <viqijie9nbe7fc@corp.supernews.com>
Source record: 111412

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308030933.15b70e6a@posting.google.com...
> "Jimmy" <Gfender@carolina.rr.com> wrote in message
news:<%J1Xa.378833$jp.10771494@twister.southeast.rr.com>...
> > Saddam is just a power hungry idiot regardless of how he came into
power. He
> > could have amassed wealth and power far beyound what he did by playing
the
> > "good guy". Iraq is the perfect country to be controlled by a benevolent
> > dictator.
> >
>
> Well, i can think of another power hungry idiot in the White
> House...
>
> And Saddam WAS the good guy, back when he was fighting Iran, as
> was Bin Laden fighting the Russians in Afghanistan, remember?
>
> I suppose by benevolent dictator, you mean George Bush?
>
> American Imperialism! Horray!
>
>
> Slick
Rumsfeld took Saddam a pair of golden spurs, they were from Reagan.
H

2469. MFJ Hi-Q Information

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 17:55:03 UTC
From: Lawrence Richardson <lrichardson@satx.rr.com>
Message-ID: <X%bXa.133146$TJ.7967113@twister.austin.rr.com>
Source record: 111413

I am considering the subject antenna for an attic installation in order not to violate the covenants of my housing development. I have read some glowing reports in QST about it, but have not found any local hams with actual experience with this antenna. Anyone out there have one who could enlighten me about the performance? I am primarily interested in working in the 30-15 meter bands at moderate power levels. The peak of my hip roof is approximately 22 feet above ground level.
73,
Larry
KD5WRN

2470. Re: OT Stuff Again (was no Saddams)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 17:59:32 UTC
From: El Asesor <EA@juliet.com>
Message-ID: <94cXa.23945$ff.10126@fed1read01>
Source record: 111414

Get out of here with this off-topic stuff -- this is an Amateur Radio
Antenna discussion group
see charter of the rec.radio news groups.
http://faqs.jmas.co.jp/FAQs/radio/personal-intro

And to respond to an OT is to feed the monkeys.
OOpps Guess I just did that. Oh Well

"H. Adam Stevens" <solo@totalaccess.net> wrote in message
news:viqijie9nbe7fc@corp.supernews.com...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308030933.15b70e6a@posting.google.com...
> > "Jimmy" <Gfender@carolina.rr.com> wrote in message
> news:<%J1Xa.378833$jp.10771494@twister.southeast.rr.com>...
> > > Saddam is just a power hungry idiot regardless of how he came into
> power. He
> > > could have amassed wealth and power far beyound what he did by playing
> the
> > > "good guy". Iraq is the perfect country to be controlled by a
benevolent
> > > dictator.
> > >
> >
> > Well, i can think of another power hungry idiot in the White
> > House...
> >
> > And Saddam WAS the good guy, back when he was fighting Iran, as
> > was Bin Laden fighting the Russians in Afghanistan, remember?
> >
> > I suppose by benevolent dictator, you mean George Bush?
> >
> > American Imperialism! Horray!
> >
> >
> > Slick
> Rumsfeld took Saddam a pair of golden spurs, they were from Reagan.
> H
>
>

2471. small 10 meter beam for satellite RX

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 18:25:20 UTC
From: bruceandkarla@ziggycom.net
Message-ID: <7192d525.0308031025.47d47a23@posting.google.com>
Source record: 111415

iam wanting the plans to a small 10 meter beam I could use for satillite RX
I am trying to get set up to work RS-15. or a good small beam to buy.
Thanks

Bruce
KD4PQF

2472. Re: OT Stuff Again (was no Saddams)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 19:10:53 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <viqnk7n86kj355@corp.supernews.com>
Source record: 111416

```
You are of course, correct.
mea culpa
NQ5H
"El Asesor" <EA@juliet.com> wrote in message
news:94cXa.23945$ff.10126@fed1read01...
> Get out of here with this off-topic stuff -- this is an Amateur Radio
> Antenna discussion group
> see charter of the rec.radio news groups.
> http://faqs.jmas.co.jp/FAQs/radio/personal-intro
>
> And to respond to an OT is to feed the monkeys.
> OOpps Guess I just did that. Oh Well
>
>
> "H. Adam Stevens" <solo@totalaccess.net> wrote in message
> news:viqijie9nbe7fc@corp.supernews.com...
> > "Dr. Slick" <radio913@aol.com> wrote in message
> > news:1d15af91.0308030933.15b70e6a@posting.google.com...
> > > "Jimmy" <Gfender@carolina.rr.com> wrote in message
> > news:<%J1Xa.378833$jp.10771494@twister.southeast.rr.com>...
> > > > Saddam is just a power hungry idiot regardless of how he came into
> > power. He
> > > > could have amassed wealth and power far beyound what he did by
playing
> > the
> > > > "good guy". Iraq is the perfect country to be controlled by a
> benevolent
> > > > dictator.
> > > >
> > >
> > > Well, i can think of another power hungry idiot in the White
> > > House...
> > >
> > > And Saddam WAS the good guy, back when he was fighting Iran, as
> > > was Bin Laden fighting the Russians in Afghanistan, remember?
> > >
> > > I suppose by benevolent dictator, you mean George Bush?
> > >
> > > American Imperialism! Horray!
> > >
> > >
> > > Slick
> > Rumsfeld took Saddam a pair of golden spurs, they were from Reagan.
> > H
```

> >
> >
>
>

2473. Re: Vee Beam info needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 20:59:17 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f2d7a76_1@news1.prserv.net>
Source record: 111417

Scott:

The curves for V Beams in the ARRL Antenna Handbook, and apparently also in the engineering texts were derived from a few experimentally determined data points assuming a sinusoidal current on the arms. In the July 1980 IEEE Transactions on Antennas and Propagation, Gary Thiele and Ernie Ekelman published a rigorous NEC analysis of the configuration, including a couple of useful curves. Both the optimum included angle vs. arm length and directivity vs. arm length differ significantly from the previously published curves. So, dig up a copy of IEEE-A&P Trans., Vol. AP-28, No. 4, and look on pp. 588-590 for the full story.

--
Crazy George
Remove NO and SPAM from return address
"Sgordon" <noshoes2@yahoo.com> wrote in message
news:QqOWa.15274$Vx2.7749441@newssvr28.news.prodigy.com...
> Considering putting up a Vee Beam for 17 meters. I then ran across a
couple
> websites that show a multiband Vee Beam cut for 15 tuning it for 6-20m.
Has
> anyone built even a mono-band Vee Beam? How did it preform?
> If you would cut one for say 40 meters and feed with opern wire, how will
it
> preform on the higherbands? Just really looking for some more info on
them.
>
> --
> Sincerely,
> Scott Gordon
> Phone: 1-888-428-6622
> Pre-Recorded Call 1-888-295-2806
> Yahoo Chat ID scott1gordon
> AOL ID scott1gordon
> http://best.justsaycash.com/ Just Say Cash
> http://best.toxicfreehomes.com/ Is Your Home A Healthy Home?
> http://best.smilestarters.com/ FREE e-Greeting Cards
> ==========
>
>

2474. am indoor loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 21:25:32 UTC
From: djebbard@wanadoo.fr
Message-ID: <6ec6f4df.0308031325.43a41ce6@posting.google.com>
Source record: 111418

What is the best am indoor loop antenna to buy ?
is it vaialble in europena stores ?

2475. Wanted: Hygain Antennas and Parts

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 21:28:22 UTC
From: "Dr. William J. Schmidt, II" <bill@wjschmidt.com>
Message-ID: <viqvhokko0n055@corp.supernews.com>
Source record: 111269

Interested in purchasing Hygain 105 / 115 / 205 antennas and associated Hygain antenna parts for experimentation. Can pick up (arranged to match my travels as such). Please reply to my email below.

--

Sincerely,

Dr. William J. Schmidt, II K9HZ

"Collector of Edison Wind-up Phonographs... Do you have one for me?"
Email: bill@wjschmidt.com
Alternate Email: wmschmidt@charter.net
WebPage: www.wjschmidt.com

2476. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 21:29:31 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f2d8090_2@news1.prserv.net>
Source record: 111271

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:hMEy82GvB3K$EAw0@ifwtech.co.uk...
>
<snip>
>
> All the contact pressure in a BNC derives from the rubber washer inside
> the bayonet ring. A good BNC should need quite a hard twist to make the
> bayonet click into place... and in old surplus plugs, this springiness
> does wear out.
>

Ian, you need to chop one apart again and look at the construction. The
contact pressure is provided by the wavy washers behind the shoulder. The
rubber washer, which is on the other side of the shoulder, if anything
opposes the contact pressure direction as it 'seals' against the end of the
female cylinder. The best BNCs in the Colonies are manufactured by
Trompeter, and the price shows it.

--
Crazy George
Remove NO and SPAM from return address

> Bottom line: BNCs in good condition are fine for 100W at 440MHz, so
> they're good for that power level at any lower frequency too.
>
>
> --
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
> http://www.ifwtech.co.uk/g3sek

2477. Re: small 10 meter beam for satellite RX

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 21:31:59 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <3F2D7F69.1030701@tampabay.rr.com>
Source record: 111270

if you want small i would suggest the Par eletronis omni angle 10 meter
loop or you could use a vertical or make a turnstil antenna
a ten meter 3 ele beam isnt small its like got a 6 foot boom but the
eles are 15 foot or so

2478. Re: am indoor loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 21:43:56 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f2d8214$0$48888$edfadb0f@dtext02.news.tele.dk>
Source record: 111272

Hello

> What is the best am indoor loop antenna to buy ?

Why buy, they just cost a lot. Build your own, one like
this works very well and the cost is very small.

http://www.hard-core-dx.com/nordicdx/antenna/loop/1mloop.html

If you want it smaller, I have designed one I can send you a picture
and a drawing of.

Regards Max

2479. Re: Wanted: Hygain Antennas and Parts

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 22:56:01 UTC
From: "Dr. William J. Schmidt, II" <bill@wjschmidt.com>
Message-ID: <vir4m3j9bsin86@corp.supernews.com>
Source record: 111273

Lets make that a 155 instead of a 115 in my last post... it makes more sense that way!

--

Sincerely,

Dr. William J. Schmidt, II K9HZ

"Collector of Edison Wind-up Phonographs... Do you have one for me?"
Email: bill@wjschmidt.com
Alternate Email: wmschmidt@charter.net
WebPage: www.wjschmidt.com

"Dr. William J. Schmidt, II" <bill@wjschmidt.com> wrote in message
news:viqvhokko0n055@corp.supernews.com...
Interested in purchasing Hygain 105 / 115 / 205 antennas and associated Hygain antenna parts for experimentation. Can pick up (arranged to match my travels as such). Please reply to my email below.

--

Sincerely,

Dr. William J. Schmidt, II K9HZ

"Collector of Edison Wind-up Phonographs... Do you have one for me?"
Email: bill@wjschmidt.com
Alternate Email: wmschmidt@charter.net
WebPage: www.wjschmidt.com

2480. Re: am indoor loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-03 23:34:15 UTC
From: Chris Trask <christrask@earthlink.net>
Message-ID: <XZgXa.130888$lo.11143140@newsread2.prod.itd.earthlink.net>
Source record: 111274

"Jacques" <djebbard@wanadoo.fr> wrote in message
news:6ec6f4df.0308031325.43a41ce6@posting.google.com...
> What is the best am indoor loop antenna to buy ?
> is it available in european stores ?
>

You may want to look at my recent article in QEX magazine. The first
part, in the Jul/Aug 2003 issue, describes the design of the loop antenna
proper. The second part, to be published next month (Sep/Oct 2003),
describes the amplifier, remote tuning, and controller.

Chris

,----------------------. High Performance Mixers and
/ What's all this \ Amplifiers for RF Communications
/ extinct stuff, anyhow? /
\ _______,--------------' Chris Trask / N7ZWY
_ |/ Principal Engineer
oo\ Sonoran Radio Research
(__)\ _ P.O. Box 25240
\ \ .' `. Tempe, Arizona 85285-5240
\ \ / \
\ '" \ IEEE Member #40274515
. ( ) \
'-|)__| :. \ Email: christrask@earthlink.net
| | | | \ '. http://www.home.earthlink.net/~christrask
c__; c__; '-..'>.__

Graphics by Loek Frederiks

2481. Re: small 10 meter beam for satellite RX

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 00:44:03 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bgka7r$q7v$1@slb9.atl.mindspring.net>
Source record: 111275

For satellite work....build a turnstile, as suggested. Then put a 1 wavelength square reflective screen under it. About .1 wavelength as I recall. Any help here guys? My memory is a bit lacking on this.

Dan/W4NTI

"Dennis Kaylor" <k4oxg@tampabay.rr.com> wrote in message news:3F2D7F69.1030701@tampabay.rr.com...
> if you want small i would suggest the Par eletronis omni angle 10 meter
> loop or you could use a vertical or make a turnstil antenna
> a ten meter 3 ele beam isnt small its like got a 6 foot boom but the
> eles are 15 foot or so
>

2482. Re: am indoor loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 03:22:07 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308031922.35b3bd31@posting.google.com>
Source record: 111276

"Max" <Max_Jens@post9.tele.dk.invalid> wrote in message
news:<3f2d8214$0$48888$edfadb0f@dtext02.news.tele.dk>...
> Hello
>
> > What is the best am indoor loop antenna to buy ?
>
> Why buy, they just cost a lot. Build your own, one like
> this works very well and the cost is very small.
>
> http://www.hard-core-dx.com/nordicdx/antenna/loop/1mloop.html
>
> If you want it smaller, I have designed one I can send you a picture
> and a drawing of.
>
> Regards Max

Yep, Those are a snap to build. The only part he really needs is an old variable cap out of an old radio. The common 365pf variable used in old BC radios will work fine. 500 pf even better. Then it's just a matter of winding a loop on something. It can be anything from a large box, to a 2 ft or so piece of 2-3 inch dia PVC tubing. "broomstick style" I prefer normal larger loops though. You can use the single main loop as is, or you can feed it with a 2nd coupling loop, which is mounted behind the main loop. This will usually improve the balance a bit. I built one on a round 16 inch dia plastic blower housing from an old humidifier. It is mounted on a short mast that fits in a heavy mast holder I have sitting on the floor. If I want to turn it, I just reach over and give it a spin. The main loop is 12 turns, and I use a 2 turn coupling loop. With the cap I have, I can tune from 500 kc to 2000 kc. I design the number of turns around the cap to be used. It's the value that can't be changed. You can tack fixed cap's in parallel with the variable though, if you want to drop lower in freq.
You can also build the main loop only, and use the ferrite antenna in the radio as the coupling loop. But then you have to keep the radio mounted behind the loop, which is a PIA. But that is one way you can try the loop without even making a direct connection. It does have to be tuned though with the cap when you do this. You'll hear it peak up, if it's resonant. I've found a loop very worthwhile on AM-BC. You can null the crud, and dig the signals you want out of the mess. A random wire usually gives you 4 stations at once. MK

2483. Re: small 10 meter beam for satellite RX

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 05:19:49 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308032119.1fa9d8e0@posting.google.com>
Source record: 111277

bruceandkarla@ziggycom.net (Bruce) wrote in message
news:<7192d525.0308031025.47d47a23@posting.google.com>...
> iam wanting the plans to a small 10 meter beam I could use for satillite RX
> I am trying to get set up to work RS-15. or a good small beam to buy.
> Thanks
>
> Bruce
> KD4PQF

All the others had good ideas. But in reality, almost anything will
work those Russian birds. I've used dipoles, GP's etc.
Whatever...Something like a turnstile would have a better
omnidirectional pattern. Those are simple to build. Crossed dipoles
fed 90 degrees out of phase. You can feed the 2nd dipole with a 1/4
wave length of line from the 1st dipole. Keep in mind the VF of the
coax. The line will be shorter than a physical 1/4 wave. Some add
reflectors below the turnstile. I think probably overkill for
RS-15..The VHF side is more critical than the HF. I usually ran 10/15
m. MK

2484. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 05:46:59 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <nrmXa.382242$jp.10940259@twister.southeast.rr.com>
Source record: 111278

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f2d1fc4_8@corp.newsgroups.com...
> Jimmy wrote:
> > Actually I would think a newbie would be the one most likely to embrace
> > Cecil's method. Its the guys who have been around a while who want
> > everything controlled at their armchair(like me). This is not to say
that
> > Cecils method could not be controlled from the shack, Just replace some
of
> > those switches with ...
>
> I control the switches from my shack. They are mounted on a piece of
> plexiglas sitting vertical in a window. It takes less time to throw
> the switches than to tune an antenna tuner.
> --
> 73, Cecil http://www.qsl.net/w5dxp

Really, some how or other I got the impression you had to go outside to
change bands. I have some nice open frame DPDT relays that I think would be
great for this. They are more like solenoid actuated knife switches than
what you would normally consider a relay. Actuate one solenoid and the
switch changes. After you deenergize the solenoid the switch stays in the
same state until the other solenoid is energised.
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2485. Re: Vee Beam info needed

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 06:07:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3F2DF808.8040102@eznec.com>
Source record: 111279

I passed along this info to Dean Straw, N6BV, the ARRL Antenna Book
editor. He replied that since the 19th Edition, he's used EZNEC/4 (an
NEC-4 based program) for generating rhombic and vee beam data. I'd hope
that it would agree closely with the 1980 NEC analysis.

Roy Lewallen, W7EL

Crazy George wrote:
> Scott:
>
> The curves for V Beams in the ARRL Antenna Handbook, and apparently also in
> the engineering texts were derived from a few experimentally determined data
> points assuming a sinusoidal current on the arms. In the July 1980 IEEE
> Transactions on Antennas and Propagation, Gary Thiele and Ernie Ekelman
> published a rigorous NEC analysis of the configuration, including a couple
> of useful curves. Both the optimum included angle vs. arm length and
> directivity vs. arm length differ significantly from the previously
> published curves. So, dig up a copy of IEEE-A&P Trans., Vol. AP-28, No. 4,
> and look on pp. 588-590 for the full story.
>
> --
> Crazy George
> Remove NO and SPAM from return address

2486. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 06:35:52 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <rVsg60BI7fL$EA5S@ifwtech.co.uk>
Source record: 111281

Crazy George wrote:
>> All the contact pressure in a BNC derives from the rubber washer inside
>> the bayonet ring. A good BNC should need quite a hard twist to make the
>> bayonet click into place... and in old surplus plugs, this springiness
>> does wear out.
>>
>
>Ian, you need to chop one apart again and look at the construction.
>The contact pressure is provided by the wavy washers behind the
>shoulder. The rubber washer, which is on the other side of the
>shoulder, if anything opposes the contact pressure direction as it
>'seals' against the end of the female cylinder.

Well, thank you, George - they do say "Learn a little every day"! I've
sawn up several BNC plugs, but never in that particular way.

Even though it's a wavy washer, the fact remains that the spring
eventually weakens (it happens it in C plugs also).

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2487. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 08:12:21 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0308040012.64f078fc@posting.google.com>
Source record: 111280

Hi Tim,
download MAGLOOP4.EXE from Reg's superb software collection at
http://www.btinternet.com/~g4fgq.regp/page3.html#S301" This program
will give you a clue about your project. Be careful with voltages - I
tried to calculate a circle loop about 1 meter dia, 20 meter band, 5
watts - more than 1600 volts across the capacitor appeared.

BR from Ivan

2488. 204BA Hygain

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 08:21:32 UTC
From: Bill <willbryant@msn.com>
Message-ID: <gloXa.134872$TJ.8071444@twister.austin.rr.com>
Source record: 111282

anyone have this antenna for sale? Thanks

2489. Re: MFJ Hi-Q Information

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 10:28:55 UTC
From: norbert <pa7nrNOSPAMMM@hotmail.com>
Message-ID: <aCqXa.6815$tK5.1126733@zonnet-reader-1>
Source record: 111283

"Lawrence Richardson" <lrichardson@satx.rr.com> schreef in bericht
news:X%bXa.133146$TJ.7967113@twister.austin.rr.com...
> I am considering the subject antenna for an attic installation in order
not
> to violate the covenants of my housing development. I have read some
> glowing reports in QST about it, but have not found any local hams with
> actual experience with this antenna. Anyone out there have one who could
> enlighten me about the performance? I am primarily interested in working
in
> the 30-15 meter bands at moderate power levels. The peak of my hip roof
is
> approximately 22 feet above ground level.
> 73,
> Larry
> KD5WRN
>
>

Larry,

You can check my homepage about my experience with the MFJ and AEA Hi-Q loop
antennas.

--
73, Norbert (PA7NR)
Homepage : http://www.qsl.net/pa7nr/index.html

2490. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 10:33:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <visdkdoc3fhtc0@corp.supernews.com>
Source record: 111284

Hm, I assembled about a gazillion BNC connectors in a previous life. They were whatever brand the Air Force bought, and they didn't contain a wavy washer. The pieces were the shell, the tip, and the screw end; and to hold the braid on the inside there were only the rubber washer, a strange-shaped washer, and a flat washer (to go between the screw end and the rubber washer to reduce the friction when tightening). One surface of the strange washer was flat (actually, stepped), and that was where the braid was smashed against the boss inside the shell. The other was tapered in such a way that it would force the rubber washer to expand outward to squeeze tightly against the shell. When disassembling one, we'd often find that the rubber washer would be cut nearly in two. The only pressure on the braid was from the rubber washer via the force of the screw end.

A common mistake was to put the strange washer in upside down, since it just looked right that way, with the braid nicely cascading over a sort of angled surface. When that was done, the washer wasn't properly expanded by the tapered end of the strange washer, and you could easily yank a connector off. When properly assembled, there's no way you can yank one off.

I have a bunch of connectors in my junk box which are essentially the same as I've described, but with a couple of more parts relating to the tip and insulator. I assemble one from time to time when needed and, like their military counterparts, they've been very trouble free.

Roy Lewallen, W7EL

Ian White, G3SEK wrote:
> Crazy George wrote:
>
>>> All the contact pressure in a BNC derives from the rubber washer inside
>>> the bayonet ring. A good BNC should need quite a hard twist to make the
>>> bayonet click into place... and in old surplus plugs, this springiness
>>> does wear out.
>>>
>>
>> Ian, you need to chop one apart again and look at the construction.
>> The contact pressure is provided by the wavy washers behind the
>> shoulder. The rubber washer, which is on the other side of the
>> shoulder, if anything opposes the contact pressure direction as it
>> 'seals' against the end of the female cylinder.
>
>
> Well, thank you, George - they do say "Learn a little every day"! I've

> sawn up several BNC plugs, but never in that particular way.
>
> Even though it's a wavy washer, the fact remains that the spring
> eventually weakens (it happens it in C plugs also).
>
>

2491. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 12:20:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2e50b3$1_4@corp.newsgroups.com>
Source record: 111285

Jimmy wrote:
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>>I control the switches from my shack. They are mounted on a piece of
>>plexiglas sitting vertical in a window. It takes less time to throw
>>the switches than to tune an antenna tuner.
>
> Really, some how or other I got the impression you had to go outside to
> change bands.

The window-line loops are outside but the switches are inside. I've
got a chart on the wall that makes changing bands a snap from the
operating position.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2492. 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 13:07:22 UTC
From: whitehat <rpav@suffolk.lib.ny.us>
Message-ID: <MZsXa.792$603.40779@iad-read.news.verio.net>
Source record: 111286

I will be building a center fed 80 m dipole, 62.5 feet each side of center. The ends will be about 23 feet above ground but the center is not supported to it sags to about 18 feet. I will feed it directly with about 25 feet of RG-213 50 ohm coax and connect it to an antenna tuner in the shack that can tune from 50 to 500 ohms.

This should work okay on 80 m, right?

How well will it do on 20 m?

2493. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 14:26:38 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <y2uXa.64091$YN5.48562@sccrnsc01>
Source record: 111287

The antenna will work OK. The VSWR may be a little high due to the low height. Minimum height should be in excess of 65 feet and most hams can't get that high!

Working on 20 meters will most likely be difficult without a good tuner.

Deacon Dave, W1MCE

whitehat wrote:

> I will be building a center fed 80 m dipole, 62.5 feet
> each side of center. The ends will be about 23 feet above
> ground but the center is not supported to it sags to about
> 18 feet. I will feed it directly with about 25 feet of
> RG-213 50 ohm coax and connect it to an antenna tuner in
> the shack that can tune from 50 to 500 ohms.
>
> This should work okay on 80 m, right?
>
> How well will it do on 20 m?
>
>

2494. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 15:01:08 UTC
From: Eskay <sieb_kNOS@PAMyahoo.ca>
Message-ID: <kxuXa.52299$PD3.4539793@nnrp1.uunet.ca>
Source record: 111288

whitehat wrote:
> I will be building a center fed 80 m dipole, 62.5 feet
> each side of center. The ends will be about 23 feet above
> ground but the center is not supported to it sags to about
> 18 feet. I will feed it directly with about 25 feet of
> RG-213 50 ohm coax and connect it to an antenna tuner in
> the shack that can tune from 50 to 500 ohms.
>
> This should work okay on 80 m, right?
>
> How well will it do on 20 m?
>
>
Any way to get the centre up higher?
With some kind of a pole?
Eskay

2495. Re: small 10 meter beam for satellite RX

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 15:21:57 UTC
From: Zack Lau <zlau@arrl.org>
Message-ID: <CSuXa.4$sb3.7289@news.ntplx.net>
Source record: 111289

"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
news:bgka7r$q7v$1@slb9.atl.mindspring.net...
> For satellite work....build a turnstile, as suggested. Then put a 1
> wavelength square reflective screen under it. About .1 wavelength as I
> recall. Any help here guys? My memory is a bit lacking on this.
>
> Dan/W4NTI

I discovered that you can eliminate the need for the
phasing cable by tying together an inverted Vee with
a dipole, and self phasing the two antennas. Probably
not as good as two identical antennas if you want perfect
phasing, but I've not figured out a cheaper technique for
obtaining circular polarization with a pair of antennas.

Self phasing--the dipole is adjusted for an impedance of
50-j50 ohms and the inverted vee is adjusted for 50+j50
ohms, so that when combined, the impedance is 50 ohms
and a 90 degree phase shift is obtained.

Zack Lau W1VT

2496. Sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 16:17:52 UTC
From: "Gregory L. Dome" <gldome@livingston.net>
Message-ID: <vit1pflugh0s28@corp.supernews.com>
Source record: 111290

I am considering a sloper antenna. How will attaching it at the low end affect the reception/ transmission? I have a 75' oak for one point 78 ft. from the radio room, but only have a 20' mast outside the radio room. Other suggestions appreciated

2497. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 16:25:23 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <bgm1dk$16j1$1@news1.tribune.com>
Source record: 111291

For bands other than 80 you would be better off with a balanced feed line
than with the coax.

JD
KA9CAR

"whitehat" <rpav@suffolk.lib.ny.us> wrote in message
news:MZsXa.792$603.40779@iad-read.news.verio.net...
> I will be building a center fed 80 m dipole, 62.5 feet
> each side of center. The ends will be about 23 feet above
> ground but the center is not supported to it sags to about
> 18 feet. I will feed it directly with about 25 feet of
> RG-213 50 ohm coax and connect it to an antenna tuner in
> the shack that can tune from 50 to 500 ohms.
>
> This should work okay on 80 m, right?
>
> How well will it do on 20 m?
>
>

2498. Dipoles falling apart?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 17:34:52 UTC
From: dsfhgs <sfgh@asfdg.jk>
Message-ID: <3F2E993C.29913778@asfdg.jk>
Source record: 111292

My antennas take 90 deg bends as they go thru insulators.
Using 14 gauge insulated wire.
Anyone have ideas as to avoid the fraying?

Does it cause any problem to just resolder it.... electrical tape
it where it frayed thru?

2499. Re: Sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 18:02:10 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <rNacnTr035g1ArOiXTWJhg@comcast.com>
Source record: 111293

Have you considered a dipole? You don't need height for the end supports if you have space. For instance, 50 feet of rope at the end of the wire will set the end of the diple to 35 feet if the wire& rope are coming down at 45 degrees. This assumes 0 height at the other end of the rope.
"Gregory L. Dome" <gldome@livingston.net> wrote in message
news:vit1pflugh0s28@corp.supernews.com...
I am considering a sloper antenna. How will attaching it at the low end affect the reception/ transmission? I have a 75' oak for one point 78 ft. from the radio room, but only have a 20' mast outside the radio room. Other suggestions appreciated

2500. Re: Dipoles falling apart?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 18:43:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2eaa6b$1_3@corp.newsgroups.com>
Source record: 111294

dsfhgs wrote:
> My antennas take 90 deg bends as they go thru insulators.
> Using 14 gauge insulated wire.
> Anyone have ideas as to avoid the fraying?

Wrap the wire around itself at the insulator, i.e. don't
allow the wire to slide back and forth through the insulator.

> Does it cause any problem to just resolder it.... electrical tape
> it where it frayed thru?

Make sure the solder is used as the electrical connection, not
as the mechanical connection.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2501. Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 19:40:15 UTC
From: k4wge@arrl.net
Message-ID: <7b671b4e.0308041140.2c8f04b8@posting.google.com>
Source record: 111295
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Thermal noise in electronic equipment is typically created by the excitation of phonons, which are resonances in conductors caused by the movement of electrons through the quantum well. Phonons are a type of noise in themselves; they are caused by a certain class of electrons colliding with the crystal lattice of conductors (silver, copper, etc.) through which they are being transmitted. Such phonons travel, not at the speed of light, but of sound, and therefore are instantly out of phase with the signal. Shot noise, which is generated by the operation of transistors, is similar in nature to thermal or white noise. Low-frequency (1/f) noise is always present, and increases as an inverse power of the frequency.

The Bybee solution is based on principles derived from quantum mechanics, the study of how electrons behave at the subatomic level.

http://www.bybeetech.com/

2502. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 19:51:51 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308041151.77555da1@posting.google.com>
Source record: 111296

nm5k@wt.net (Mark Keith) wrote in message
news:<25eb70d7.0307292113.2bd4597e@posting.google.com>...
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0307290750.345d3abf@posting.google.com>...
> > Seems like a lot of hams with limited resources are still compelled
> > to operate on many bands with just a long wire and a tuner.
> > The wire is inexpensive but the tuners are not. Thus my present
> > project.
> > I was given a Palomar enginnering balun with 5 female connenection
> > which by selection can match a antenna in steps from 5 ohms to over
> > 450 ohms
> > in a series of steps. I am presently rigging it up so that all
> > steps can be switched thru remotely by a single motor. The switching
> > arrangement
>
>
> I'd rather wind a coil, "oatmeal tube carton"? and find a good
> variable cap, and make a simple L network to feed a random wire. I'd
> rather not use an apple to do a job that an orange should rightfully
> have. :/ MK

Mark,
What sort of range of impedance matching would this provide?
How would you switch bands and what voltage/capacitor range
would be required?
I suspect you would have to have several relays to pick up various
points on the oatmeal inductor as well as a rotation method
for the capacitor

Seems like you have something specific in mind that you would put in a box
for safety reasons. Are the specifics shown somewhere for people to copy?
Art

2503. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 20:06:36 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <msetiv8pujmt7t6jukkc6i47ri0s199dec@4ax.com>
Source record: 111297
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

On 4 Aug 2003 12:40:15 -0700, k4wge@arrl.net (k4wge) wrote:

>Thermal noise in electronic equipment is typically created by the
>excitation of phonons, which are resonances in conductors caused by
>the movement of electrons through the quantum well. Phonons are a type
>of noise in themselves; they are caused by a certain class of
>electrons colliding with the crystal lattice of conductors (silver,
>copper, etc.) through which they are being transmitted. Such phonons
>travel, not at the speed of light, but of sound, and therefore are
>instantly out of phase with the signal. Shot noise, which is generated
>by the operation of transistors, is similar in nature to thermal or
>white noise. Low-frequency (1/f) noise is always present, and
>increases as an inverse power of the frequency.
>
>The Bybee solution is based on principles derived from quantum
>mechanics, the study of how electrons behave at the subatomic level.
>
>
>http://www.bybeetech.com/

Geez Luise,

Two leaded black box fractal applications.
(or is it EH (or is it CFA?)?)

Might work if absolutely every connection contained one of these
buffering elements (don't count on it in your next computer).

73's
Richard Clark, KB7QHC

2504. Re: am indoor loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 20:12:41 UTC
From: djebbard@wanadoo.fr
Message-ID: <6ec6f4df.0308041212.1e68f581@posting.google.com>
Source record: 111298

I Can not buil it myself since i know nothing about electronics.
I havre no choice but to buy such an antenna in Us or Europe
What is the best product available in the Market ?
I've heard about Terk or Palomar .

djebbard@wanadoo.fr (Jacques) wrote in message
news:<6ec6f4df.0308031325.43a41ce6@posting.google.com>...
> What is the best am indoor loop antenna to buy ?
> is it vaialble in europena stores ?

2505. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 20:17:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vitfrm8ld884e6@corp.supernews.com>
Source record: 111299
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Egad, there's a sucker born every minute. It's stuff like this that
makes venture capitalists the cynical SOBs they are.

Roy Lewallen, W7EL

k4wge wrote:
> Thermal noise in electronic equipment is typically created by the
> excitation of phonons, which are resonances in conductors caused by
> the movement of electrons through the quantum well. Phonons are a type
> of noise in themselves; they are caused by a certain class of
> electrons colliding with the crystal lattice of conductors (silver,
> copper, etc.) through which they are being transmitted. Such phonons
> travel, not at the speed of light, but of sound, and therefore are
> instantly out of phase with the signal. Shot noise, which is generated
> by the operation of transistors, is similar in nature to thermal or
> white noise. Low-frequency (1/f) noise is always present, and
> increases as an inverse power of the frequency.
>
> The Bybee solution is based on principles derived from quantum
> mechanics, the study of how electrons behave at the subatomic level.
>
>
> http://www.bybeetech.com/

2506. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 20:51:35 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <rHzXa.65950$o%2.31356@sccrnsc02>
Source record: 111300
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

We can totally eliminate all this noise if we simply operate our
equipment at -273 C.

Deacon Dave, W1MCE

Roy Lewallen wrote:

> Egad, there's a sucker born every minute. It's stuff like this that
> makes venture capitalists the cynical SOBs they are.
>
> Roy Lewallen, W7EL
>
> k4wge wrote:
>
>> Thermal noise in electronic equipment is typically created by the
>> excitation of phonons, which are resonances in conductors caused by
>> the movement of electrons through the quantum well. Phonons are a type
>> of noise in themselves; they are caused by a certain class of
>> electrons colliding with the crystal lattice of conductors (silver,
>> copper, etc.) through which they are being transmitted. Such phonons
>> travel, not at the speed of light, but of sound, and therefore are
>> instantly out of phase with the signal. Shot noise, which is generated
>> by the operation of transistors, is similar in nature to thermal or
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>>
>> The Bybee solution is based on principles derived from quantum
>> mechanics, the study of how electrons behave at the subatomic level.
>>
>>
>> http://www.bybeetech.com/
>
>

2507. Re: am indoor loop antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 21:06:08 UTC
From: Max <Max_Jens@post9.tele.dk.invalid>
Message-ID: <3f2ecab5$0$48888$edfadb0f@dtext02.news.tele.dk>
Source record: 111301

Hello Jacques

> I Can not buil it myself since i know nothing about electronics.

Actual you do not know anything about electronics to build a loop
antenna, just make a wooden frame and wind some copper wire
on it, solder a variable capacitor to the wire and you are well of.

> I havre no choice but to buy such an antenna in Us or Europe
> What is the best product available in the Market ?
> I've heard about Terk or Palomar .

If you will buy some thing, then take a close look here

http://www.wellbrook.uk.com/products.html#LA5030

I think the LA5030 is a good choise, but you will have to pay.

Regards Max

2508. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 21:08:28 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f2ecc14_3@news1.prserv.net>
Source record: 111302

Roy:

Take an unwanted BNC and the biggest pair of diagonal cutters you have. Clip the latching collar off the shell at the rearmost point of the two latching slots. May take a couple of tries on each side depending on the cutters and amount of force you can muster. Inside you will find the components which create the mating pressure, usually including several half washers which immediately fall out. If you have never cut the latching collar off of a BNC, you have never seen that part of the construction, which is hidden inside the knurl. And, yes, all the BNCs the Air Force purchased had the wavy washer inside, or they would not stay latched. You are describing the cable retention hardware, an entirely separate issue.

BTW, after you remove the latching collar, you now have a universal plug which will mate with female BNC, TNC and N. Depending on brand, the retention is iffy, but I find them very useful for quick connect/disconnect applications. Trompeter plugs, with their machined sleeve, are quite good without the latch.

--
Crazy George
Remove NO and SPAM from return address
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:visdkdoc3fhtc0@corp.supernews.com...
> Hm, I assembled about a gazillion BNC connectors in a previous life.
> They were whatever brand the Air Force bought, and they didn't contain a
> wavy washer. The pieces were the shell, the tip, and the screw end; and
> to hold the braid on the inside there were only the rubber washer, a
> strange-shaped washer, and a flat washer (to go between the screw end
> and the rubber washer to reduce the friction when tightening). One
> surface of the strange washer was flat (actually, stepped), and that was
> where the braid was smashed against the boss inside the shell. The other
> was tapered in such a way that it would force the rubber washer to
> expand outward to squeeze tightly against the shell. When disassembling
> one, we'd often find that the rubber washer would be cut nearly in two.
> The only pressure on the braid was from the rubber washer via the force
> of the screw end.
>
> A common mistake was to put the strange washer in upside down, since it
> just looked right that way, with the braid nicely cascading over a sort
> of angled surface. When that was done, the washer wasn't properly
> expanded by the tapered end of the strange washer, and you could easily
> yank a connector off. When properly assembled, there's no way you can
> yank one off.
>

> I have a bunch of connectors in my junk box which are essentially the
> same as I've described, but with a couple of more parts relating to the
> tip and insulator. I assemble one from time to time when needed and,
> like their military counterparts, they've been very trouble free.
>
> Roy Lewallen, W7EL
>
> Ian White, G3SEK wrote:
> > Crazy George wrote:
> >
> >>> All the contact pressure in a BNC derives from the rubber washer
inside
> >>> the bayonet ring. A good BNC should need quite a hard twist to make
the
> >>> bayonet click into place... and in old surplus plugs, this springiness
> >>> does wear out.
> >>>
> >>
> >> Ian, you need to chop one apart again and look at the construction.
> >> The contact pressure is provided by the wavy washers behind the
> >> shoulder. The rubber washer, which is on the other side of the
> >> shoulder, if anything opposes the contact pressure direction as it
> >> 'seals' against the end of the female cylinder.
> >
> >
> > Well, thank you, George - they do say "Learn a little every day"! I've
> > sawn up several BNC plugs, but never in that particular way.
> >
> > Even though it's a wavy washer, the fact remains that the spring
> > eventually weakens (it happens it in C plugs also).
> >
> >
>

2509. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 21:36:06 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <r0ktivk1e3hch6cl248rcof3gl9t3osjiq@4ax.com>
Source record: 111303

In a time long, long ago, there were no commercial antenna tuners that I can recall. The first commercial tuner I remember was the Johnson Viking. Everyone I knew made their own. You just went to the surplus store, and got a coil and capacitor that looked about right, and tried it. No one owned any equipment to measure them anyway. We never used relays. Maybe a switch, or just change the coil. The ARRL handbook and Antenna Handbooks still have diagrams for antenna tuners. Also the Hints and Kinks manuals, among many others.

Dick - W6CCD

On 4 Aug 2003 12:51:51 -0700, aunwin@insightbb.com (Art Unwin KB9MZ) wrote:

>Mark,
>What sort of range of impedance matching would this provide?
>How would you switch bands and what voltage/capacitor range
>would be required?
>I suspect you would have to have several relays to pick up various
>points on the oatmeal inductor as well as a rotation method
>for the capacitor
>
>Seems like you have something specific in mind that you would put in a box
>for safety reasons. Are the specifics shown somewhere for people to copy?
>Art

2510. wanted 20 Meter trap for R-7000

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 21:39:05 UTC
From: Fred Peerenboom <peerenbf@dmapub.dma.org>
Message-ID: <3f2ed278_1@athena.netset.com>
Source record: 111304

- -

2511. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 22:00:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vitlr6p739r444@corp.supernews.com>
Source record: 111305

Ah. We're talking about two different things. I thought that the subject had come up about securing the braid within the connector. Ian's initial response was along the line of what I've observed. And that's what I was talking about. But you're talking (I think) about what secures the male connector to the female, another issue altogether.

Yes, I've never broken the latching collar off a BNC, so I've never seen the associated components. I fully believe you that there's a wavy washer to apply the pressure.

Roy Lewallen, W7EL

Crazy George wrote:
> Roy:
>
> Take an unwanted BNC and the biggest pair of diagonal cutters you have.
> Clip the latching collar off the shell at the rearmost point of the two
> latching slots. May take a couple of tries on each side depending on the
> cutters and amount of force you can muster. Inside you will find the
> components which create the mating pressure, usually including several half
> washers which immediately fall out. If you have never cut the latching
> collar off of a BNC, you have never seen that part of the construction,
> which is hidden inside the knurl. And, yes, all the BNCs the Air Force
> purchased had the wavy washer inside, or they would not stay latched. You
> are describing the cable retention hardware, an entirely separate issue.
>
> BTW, after you remove the latching collar, you now have a universal plug
> which will mate with female BNC, TNC and N. Depending on brand, the
> retention is iffy, but I find them very useful for quick connect/disconnect
> applications. Trompeter plugs, with their machined sleeve, are quite good
> without the latch.
>
> --
> Crazy George
> Remove NO and SPAM from return address

2512. GR 1710-P2 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 22:00:48 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vitlsn41jtmh5b@corp.supernews.com>
Source record: 111306

I just got a General Radio 1710-P2 Transmission/Reflection Bridge with 4 ports. On the front, RF IN, REFLECTION OUT, REFERENCE OUT (-12dB), and on the left side, UNKNOWN B. I can't find any docs on google so can anyone please tell me the frequency range, impedance and how the 4th port is used, or perhaps where to find more info.
tnx
hank wd5jfr

2513. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 22:09:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <l9mtivc4v83jli8ntk0hkajios9r5255ij@4ax.com>
Source record: 111307
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

On Mon, 04 Aug 2003 20:51:35 GMT, Dave Shrader
<david.shrader@comcast.net> wrote:

>We can totally eliminate all this noise if we simply operate our
>equipment at -273 C.
>
>Deacon Dave, W1MCE
>
So that's what they are, two leaded absolute-zero ice cubes.

73's
Richard Clark, KB7QHC

2514. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 22:46:50 UTC
From: jgboyles@aol.com
Message-ID: <20030804184650.18302.00000888@mb-m15.aol.com>
Source record: 111308

>So that's what they are, two leaded absolute-zero ice cubes.

Richard, they could be mono-reproducers. This was introduced in the 70's as a device that could faithfully take an input signal and reproduce the signal at the output with no distortion, phase shift, and a gain very nearly one. Also, there was no loss up into the MHZ region. You could take two of these remarkable devices and have a Stereo-reproducer.
If you cooled a 1" piece of #12 copper to absolute-zero, you might improve on the mono-reproducer.
73 Gary N4AST

2515. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-04 23:36:50 UTC
From: Bill <lbj@congress.com>
Message-ID: <bgmqn0$qa205$1@ID-175813.news.uni-berlin.de>
Source record: 111309

How does the "Josephson(sp) junction" fit into this.
And wasn't it classified Top Secret back in the 50's?

Just curious

Bill

JGBOYLES wrote:
>>So that's what they are, two leaded absolute-zero ice cubes.
>
>
> Richard, they could be mono-reproducers. This was introduced in the 70's as a
> device that could faithfully take an input signal and reproduce the signal at
> the output with no distortion, phase shift, and a gain very nearly one. Also,
> there was no loss up into the MHZ region. You could take two of these
> remarkable devices and have a Stereo-reproducer.
> If you cooled a 1" piece of #12 copper to absolute-zero, you might improve on
> the mono-reproducer.
> 73 Gary N4AST

2516. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 00:18:13 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <8JCXa.67061$o%2.31916@sccrnsc02>
Source record: 111310

Dick, A REAL LONG time ago when I needed my first tuner I bought a
military surplus ARC-5 transmitter for $5 USD and removed the roller
inductor and final plate tuning capacitor. [Actually, I bought 3 ARC-5s:
one for 80, one for 40 both converted to XTAL control, and one for the
tuner and spare 1625s. Nice NOVICE CW rigs.]

Made a real nice L-tuner at 125 watts continuous duty!!

Hmmm .... where are those old ARC-5s when someone needs them??

Deacon Dave, W1MCE

Dick wrote:

> In a time long, long ago, there were no commercial antenna tuners that
> I can recall. The first commercial tuner I remember was the Johnson
> Viking. Everyone I knew made their own. You just went to the surplus
> store, and got a coil and capacitor that looked about right, and tried
> it. No one owned any equipment to measure them anyway. We never used
> relays. Maybe a switch, or just change the coil. The ARRL handbook
> and Antenna Handbooks still have diagrams for antenna tuners. Also
> the Hints and Kinks manuals, among many others.
>
> Dick - W6CCD
>
> On 4 Aug 2003 12:51:51 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
> wrote:
>
>
>
>>Mark,
>>What sort of range of impedance matching would this provide?
>>How would you switch bands and what voltage/capacitor range
>>would be required?
>>I suspect you would have to have several relays to pick up various
>>points on the oatmeal inductor as well as a rotation method
>>for the capacitor
>>
>>Seems like you have something specific in mind that you would put in a box
>>for safety reasons. Are the specifics shown somewhere for people to copy?
>>Art
>
>

2517. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 00:24:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2efa6c_8@corp.newsgroups.com>
Source record: 111312

gil wrote:
> Any suggestions before going out and purchasing another tuner?

Check for a broken or shorted wire.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2518. When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 00:25:12 UTC
From: gil <gilpi@mindspring.com>
Message-ID: <bgmt7tfdc1@slb3.atl.mindspring.net>
Source record: 111311

I have the MFJ-971 portable tuner that I use with a random wire when all of the sudden I could not load on any bands and the "forward" power reads very low. At first I thought I blew the rig (TS-430) but then when I tried a couple of different rigs ,the same thing happens... high SWR readings and low power, also tried different antennas with the MFJ-971 and got the same results.
Any suggestions before going out and purchasing another tuner? And is it possible to "blow" a tuner, I dont use anything over 50 watts on CW.
Thanks.....gil

2519. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 01:31:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <viu28ess5ads83@corp.supernews.com>
Source record: 111313
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

I stand corrected! A little bit of web research shows that this would be a venture capitalist's dream. I have to continually remind myself not to overestimate the golden-ear crowd -- after all, the gold-plated 8 ohm characteristic impedance speaker cables sold (and I assume still sell) like hot cakes. The placebo effect is certainly powerful, but it's possible that the "quantum purifiers" might actually do something. Rather than believe that the purveyor is actually selling components whose composition is "classified by the U.S. military", I'd be willing to bet they're some sort of more-or-less off the shelf varistor. That would flavor the music a bit, and anyone who'd just dropped 600 bucks for a pair of them would no doubt find the flavoring to be marvelous. A few minutes with a curve tracer and some web specifications should pin the source down pretty quickly. But I'm not quite 600 bucks curious. . .

Roy Lewallen, W7EL

Roy Lewallen wrote:
> Egad, there's a sucker born every minute. It's stuff like this that
> makes venture capitalists the cynical SOBs they are.
>
> Roy Lewallen, W7EL

2520. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:03:21 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgn399$b2e$1@sparta.btinternet.com>
Source record: 111314

```
Cecil sed -
> Check for a broken or shorted wire.
>
============================

Cecil, you forgot to tell him to remove the cover from box.
---
Reg
```

2521. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:14:18 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <8qEXa.8335$ug.7210@lakeread01>
Source record: 111315

Are you sure it is the tuner and not just the meter circuit? Have you tried another SWR meter? Check the diodes in the SWR meter circuit. They can get fried by a nearby lightning strike. Replacement is easy is and cheap.

Oh yes, remove cover first.
--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64
"gil" <gilpi@mindspring.com> wrote in message
news:bgmt7tfdc1@slb3.atl.mindspring.net...
> I have the MFJ-971 portable tuner that I use with a random wire when all
of
> the sudden I could not load on any bands and the "forward" power reads
very
> low. At first I thought I blew the rig (TS-430) but then when I tried a
> couple of different rigs ,the same thing happens... high SWR readings and
> low power, also tried different antennas with the MFJ-971 and got the same
> results.
> Any suggestions before going out and purchasing another tuner? And is it
> possible to "blow" a tuner, I dont use anything over 50 watts on CW.
> Thanks.........gil
>
>

2522. Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:34:37 UTC
From: Alan Caplan <alan.caplan@frontiernet.net>
Message-ID: <1JEXa.27009$BF1.15390@news02.roc.ny>
Source record: 111316

Looking for a vertical like I used in Navy Communications. Base insulator and heavy walled tubing 32 feet high. Surplus fine.

Alan K4AVQ/ P40AV

2523. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:34:43 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F2F17C3.B0F254FB@cwis.net>
Source record: 111317

Gil,
As suggested, check the wiring (encluding the antenna).
If you aren't seeing any output from the '430 (or the other
ones) I'd also check the feed line between radio and tuner
if you didn't enclude that with the 'wiring' above. If
everything seems to be making good contact outside of the
tuner, then it's time to look inside the tuner. Look for
any obvious broken connections, black or burned spots, etc.
Switch contacts are a likely place to find problems, so
give them a good look. If all else fails, you might 'wack'
it between the eyes just for the hell of it, sometimes it
helps.
Can you 'burn out' a tuner with 50 watts? Yes, just
depends on the tuner...
'Doc

2524. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:38:55 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F2F18BF.3F5F43DC@cwis.net>
Source record: 111318

whitehat,
Yes, it will work on 80 meters. Don't count on
using it on 20 meters. Depending on the tuner it
may 'tune', but you won't have the 'best' results.
'Doc

2525. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:50:45 UTC
From: gil <gilpi@mindspring.com>
Message-ID: <bgn5or$2pu$1@slb6.atl.mindspring.net>
Source record: 111319

I wonder if the meter or the meter circuit got screwed up?
I connected the tuner to an outside SWR/WATT meter and it seems to tune the antenna well....according to the outboard meter while the one on the tuner itself reads high SWR and low power.

"gil" <gilpi@mindspring.com> wrote in message
news:bgmt7tfdc1@slb3.atl.mindspring.net...
> I have the MFJ-971 portable tuner that I use with a random wire when all
of
> the sudden I could not load on any bands and the "forward" power reads
very
> low. At first I thought I blew the rig (TS-430) but then when I tried a
> couple of different rigs ,the same thing happens... high SWR readings and
> low power, also tried different antennas with the MFJ-971 and got the same
> results.
> Any suggestions before going out and purchasing another tuner? And is it
> possible to "blow" a tuner, I dont use anything over 50 watts on CW.
> Thanks.........gil
>
>

2526. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:55:44 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <g9-cncUnOrKrgLKiXTWJkw@ctc.net>
Source record: 111320

> I will be building a center fed 80 m dipole, 62.5 feet
> each side of center. The ends will be about 23 feet above
> ground but the center is not supported to it sags to about
> 18 feet. I will feed it directly with about 25 feet of
> RG-213 50 ohm coax and connect it to an antenna tuner in
> the shack that can tune from 50 to 500 ohms.
>
> This should work okay on 80 m, right?
>
> How well will it do on 20 m?
>

For 80 it will work fine for the heights you have to work with. As most always the higher the beter. If you want to work 20 meters or other bands with the same antenna you might want to feed it with open wire or go to an off center fed or (yuck) maybe the g5rv type.

2527. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 02:56:13 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f2f200f_2@news1.prserv.net>
Source record: 111321

Shakespeare Model 120 antenna system
AT - 1011/U = MT-2525/U base, 1 - AT-1039/U, 1 - AT - 1040/U, 1 - AT - 1041/U, 1 - AT - 1042/U and 4 - AT - 1043/U.

http://www.shakespeare-military.com/
Or: Denny L. King, Military Products Manager, 800-800-9008

--
Crazy George
Remove NO and SPAM from return address
"Alan Caplan" <alan.caplan@frontiernet.net> wrote in message news:1JEXa.27009$BF1.15390@news02.roc.ny...
> Looking for a vertical like I used in Navy Communications. Base insulator
> and heavy walled tubing 32 feet high. Surplus fine.
>
> Alan K4AVQ/ P40AV
>
>

2528. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 03:06:49 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f2f2010_2@news1.prserv.net>
Source record: 111322

Well, Roy, here is cut and paste from Ian's post:

"All the contact pressure in a BNC derives from the rubber washer inside
the bayonet ring. A good BNC should need quite a hard twist to make the
bayonet click into place... and in old surplus plugs, this springiness
does wear out."

"....rubber washer inside the bayonet ring." sure doesn't sound like cable
retention to me. Sorry for the confusion, I guess.

On the other hand, when the rubber washer deteriorates, the connectors mate
much more easily once, as the female contact is destroyed in the process.

Ian, I suspect that is your failure mode, as I have chopped up some very old
connectors, and the spring washers still seem to retain their shape, while
the rubber is rotten. On the other hand, I have seen some cheapies which
are soft from the manufacturer. I send those back.
--
Crazy George
Remove NO and SPAM from return address
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vitlr6p739r444@corp.supernews.com...
> Ah. We're talking about two different things. I thought that the subject
> had come up about securing the braid within the connector. Ian's initial
> response was along the line of what I've observed. And that's what I was
> talking about. But you're talking (I think) about what secures the male
> connector to the female, another issue altogether.
>
> Yes, I've never broken the latching collar off a BNC, so I've never seen
> the associated components. I fully believe you that there's a wavy
> washer to apply the pressure.
>
> Roy Lewallen, W7EL

2529. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 03:09:14 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bgn74s$pg0fd$1@ID-134747.news.uni-berlin.de>
Source record: 111324

You will be a much happier camper if you feed it with 450 ohm ladder line.
You will have no trouble using the antenna anywhere from 80 to 10, and if
the ladder feed is more than 70 feet you will be able to load the dipole on
160. If the feed line is not 70 feet long, you still will be able to use
the antenna on 160, just join the two sides of the feedline together and
treat as a longwire.

--
73 es cul

wb3fup
a Salty Bear

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:g9-cncUnOrKrgLKiXTWJkw@ctc.net...
> > I will be building a center fed 80 m dipole, 62.5 feet
> > each side of center. The ends will be about 23 feet above
> > ground but the center is not supported to it sags to about
> > 18 feet. I will feed it directly with about 25 feet of
> > RG-213 50 ohm coax and connect it to an antenna tuner in
> > the shack that can tune from 50 to 500 ohms.
> >
> > This should work okay on 80 m, right?
> >
> > How well will it do on 20 m?
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>
> For 80 it will work fine for the heights you have to work with. As most
> always the higher the beter. If you want to work 20 meters or other
bands
> with the same antenna you might want to feed it with open wire or go to
an
> off center fed or (yuck) maybe the g5rv type.
>
>

2530. Re: Sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 03:19:03 UTC
From: "Gregory L. Dome" <gldome@livingston.net>
Message-ID: <viu8h5l2p17va3@corp.supernews.com>
Source record: 111325

I was interested in having a multiband antenna, rather than a dipole for single coverage and don't have room for a fan array.
"Tarmo Tammaru" <t-tammaru@home.com> wrote in message news:rNacnTr035g1ArOiXTWJhg@comcast.com...
Have you considered a dipole? You don't need height for the end supports if you have space. For instance, 50 feet of rope at the end of the wire will set the end of the diple to 35 feet if the wire& rope are coming down at 45 degrees. This assumes 0 height at the other end of the rope.
"Gregory L. Dome" <gldome@livingston.net> wrote in message news:vit1pflugh0s28@corp.supernews.com...
I am considering a sloper antenna. How will attaching it at the low end affect the reception/ transmission? I have a 75' oak for one point 78 ft. from the radio room, but only have a 20' mast outside the radio room. Other suggestions appreciated

2531. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 03:35:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2f274c_8@corp.newsgroups.com>
Source record: 111326

Reg Edwards wrote:
> Cecil sed -
>>Check for a broken or shorted wire.
>
> Cecil, you forgot to tell him to remove the cover from box.

Reg, I was talking about the antenna.
--
73, Cecil http://www.qsl.net/w5dxp

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2532. Re: Sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 03:39:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f2f280b_8@corp.newsgroups.com>
Source record: 111327

Gregory L. Dome wrote:
> I was interested in having a multiband antenna, rather than a dipole for
> single coverage and don't have room for a fan array.

Feed the dipole with window-line and use it on all HF bands.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2533. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 04:05:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <viub95mtas9l9d@corp.supernews.com>
Source record: 111328

My mistake. Sorry.

Roy Lewallen, W7EL

Crazy George wrote:
> Well, Roy, here is cut and paste from Ian's post:
>
> "All the contact pressure in a BNC derives from the rubber washer inside
> the bayonet ring. A good BNC should need quite a hard twist to make the
> bayonet click into place... and in old surplus plugs, this springiness
> does wear out."
>
> "....rubber washer inside the bayonet ring." sure doesn't sound like cable
> retention to me. Sorry for the confusion, I guess.
>
> On the other hand, when the rubber washer deteriorates, the connectors mate
> much more easily once, as the female contact is destroyed in the process.
>
> Ian, I suspect that is your failure mode, as I have chopped up some very old
> connectors, and the spring washers still seem to retain their shape, while
> the rubber is rotten. On the other hand, I have seen some cheapies which
> are soft from the manufacturer. I send those back.
> --
> Crazy George
> Remove NO and SPAM from return address

2534. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 04:40:49 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F2F3551.6FB95153@cwis.net>
Source record: 111329

gil,
Recheck to see if the input and output of the
tuner aren't backwards.
'Doc

2535. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 04:59:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <mbeuivs4n5loejovk9g5rkbqr7aaarngse@4ax.com>
Source record: 111330

On Mon, 4 Aug 2003 22:06:49 -0500, "Crazy George"
<munschNO@attglobal.net.SPAM> wrote:

>
>On the other hand, when the rubber washer deteriorates, the connectors mate
>much more easily once, as the female contact is destroyed in the process.
>

Hi All,

Another failure mode is mixing HV BNC (quite rare) with standard BNC.

73's
Richard Clark, KB7QHC

2536. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 05:31:58 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308042131.57395bfc@posting.google.com>
Source record: 111331

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<SN6cnfSU0KI-ZreiXTWJjQ@comcast.com>...
> Tim,
>
> The voltage rating on coax is a lot higher than what you would calculate
> based on max power. I can't find the numbers right now, but seem to recall
> that RG58 was rated at 750 V or more. The big stuff is good for over 2000V.
> The reason you don't want the end of the wire exposed is that it could lead
> to arcing or corona. Probably not at low power, though. Sorry, can't answer
> your other question.

RG213 (RG8) with solid polyethylene dielectric is generally rated at
5kV RMS, and RG58 at 1900VRMS. Though I wouldn't recommend the
practice, I know of people who commonly run 25kV DC on RG-58, though
ONLY by extending the ends so it can't arc around the end, and note
that it's for DC, which doesn't cause the problem suggested in the
next sentence like AC or RF does. You should normally worry about
capacitors with layers of some air and some higher-dielectric-constant
dielectric, because the air will have a higher field strength and may
be subject to corona (which generates ozone and destroys plastic
insulations...), but in the case of the coaxial construction the field
is strongest near the small-diameter inner conductor anyway, so the
(presumably small) air gap between the insulated wire and the tubing
is in a place where it shouldn't be a problem.

Cheers,
Tom

Cheers,
Tom

2537. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 06:32:09 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <Xukf0eCp90L$EANU@ifwtech.co.uk>
Source record: 111332

Richard Clark wrote:
>On Mon, 4 Aug 2003 22:06:49 -0500, "Crazy George"
><munschNO@attglobal.net.SPAM> wrote:
>
>>
>>On the other hand, when the rubber washer deteriorates, the connectors mate
>>much more easily once, as the female contact is destroyed in the process.
>>
>
>Hi All,
>
>Another failure mode is mixing HV BNC (quite rare) with standard BNC.

Yes, if you're hamfisted enough, you can easily connect a BNC signal lead to an MHV high voltage supply. They're rare compared with BNC, but they do appear at hamfests.

Whoever invented this booby-trap should have been connected to it! As amateurs, we only need to know two things about the MHV series:

1. Plugs and sockets look like a "stretched" BNC.

2. Avoid.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

2538. Re: Butternut HF6V For sale or trade

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 12:04:45 UTC
From: MD <morco@bellnet.ca>
Message-ID: <A3NXa.1047$ZV6.92076@news20.bellglobal.com>
Source record: 111333

Antenna is sold.

2539. Re: BNC Connector Power Ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 12:37:30 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <eyNXa.336808$_w.13580299@twister.southeast.rr.com>
Source record: 111334

I used to think crimp on connectors were just the lazy mans way of putting on a BNC. After 15 years of using them I have come to believe they are better than the old style. I just removed an old radar system from service whith hundreds of BNC connections. None of the crimp ons were bad, not so for the others. I am sure this was the cause of many of the intermitent problems that had plagued this radar.

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:-WadnXqpgPt0GLGiU-KYuQ@comcast.com...
> BNCs are almost universally used for non microwave test equipment. So, I
> have used them a lot. My biggest problem has been the shield not making
good
> contact with the body of the connector after a while. By far, I have had
the
> fewest problems with the kind where a sleeve is crimped over the outer
> insulation to provide strain relief. On the better connectors, this sleeve
> is about an inch long. You do not want to allow any flexing of the bare
> shield.
>
> Tam/WB2TT
> "Brian Kelly" <kelly@dvol.com> wrote in message
> news:d22b54c3.0308011906.2035aa43@posting.google.com...
> > I'd like to build a compact antenna/100W rig patch panel instead
> > getting involved with big expensive coax switches. Could be done
> > nicely with BNC connectors & RG-58. Does anybody have a link to a site
> > which provides freq (160M-440) vs. power handling ratings for BNC
> > connectors?
> >
> > Tnx,
> >
> > w3rv
>
>

2540. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 13:26:01 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bgob99$n6d$0@208.206.142.70>
Source record: 111335
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Roy, I still like your first statement better :"There's one born every minute..."

Roy Lewallen wrote:

> I stand corrected! A little bit of web research shows that this would be
> a venture capitalist's dream. I have to continually remind myself not to
> overestimate the golden-ear crowd -- after all, the gold-plated 8 ohm
> characteristic impedance speaker cables sold (and I assume still sell)
> like hot cakes. The placebo effect is certainly powerful, but it's
> possible that the "quantum purifiers" might actually do something.
> Rather than believe that the purveyor is actually selling components
> whose composition is "classified by the U.S. military", I'd be willing
> to bet they're some sort of more-or-less off the shelf varistor. That
> would flavor the music a bit, and anyone who'd just dropped 600 bucks
> for a pair of them would no doubt find the flavoring to be marvelous. A
> few minutes with a curve tracer and some web specifications should pin
> the source down pretty quickly. But I'm not quite 600 bucks curious. . .
>
> Roy Lewallen, W7EL
>
> Roy Lewallen wrote:
> > Egad, there's a sucker born every minute. It's stuff like this that
> > makes venture capitalists the cynical SOBs they are.
> >
> > Roy Lewallen, W7EL

2541. Re: Dipoles falling apart?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 13:30:46 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bgobi6olc0@208.206.142.70>
Source record: 111336

You could use a small pulley suspensed by insulated cord, or a length of
some sort of insulated tubing to run the wire through at the insulator so that it
slides on something slick instead of the porcelien insulator.

dsfhgs wrote:

> My antennas take 90 deg bends as they go thru insulators.
> Using 14 gauge insulated wire.
> Anyone have ideas as to avoid the fraying?
>
> Does it cause any problem to just resolder it.... electrical tape
> it where it frayed thru?

2542. new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 13:49:41 UTC
From: Jayne Medley <kjm52@blomand.net>
Message-ID: <bgocol$ddgr$1@news3.infoave.net>
Source record: 111337

What to some of you think about a Windom Ant .
Looking to put one up . Can I work all bands with no tuner like they say ?

Thanks for help

2543. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 14:25:09 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <97PXa.70831$uu5.7582@sccrnsc04>
Source record: 111338

Jayne Medley wrote:

> What to some of you think about a Windom Ant .

[SNIP] If you mean the 136 foot 36% off center fed with single wire against ground it's a pretty fair antenna on 80/40/20/10.

> Looking to put one up . Can I work all bands with no tuner like they say ?

[SNIP] Nope! It needs a tuner to work any band!

>
> Thanks for help

[SNIP] There are other antennas that claim to be a 'Windom' but are adaptations of the basic antenna. The original windom introduced in amateur circles in the 1930s is as described above.

All other versions, coax fed, twin lead fed, open wire feeder fed are adaptations.

A simple 'Windom' fed with a single wire and a tuner will work fine. You may need to trim the single wire length to get RF out of the shack.

Deacon Dave, W1MCE

>
>

2544. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 14:55:46 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <ebhviv87vg7b3tpk6oforub1ob7jeou1da@4ax.com>
Source record: 111323

On Tue, 05 Aug 2003 02:34:37 GMT, "Alan Caplan"
<alan.caplan@frontiernet.net> wrote:

>Looking for a vertical like I used in Navy Communications. Base insulator
>and heavy walled tubing 32 feet high. Surplus fine.
>
>Alan K4AVQ/ P40AV
>

Try the web site for Surplus Sales of Nebraska; maybe give them a
call. I have one of their paper catalogs, about 2-3 years old. They
list a Collins vertical, 36' high, $149, part num. (ANT) AC-2811.

Bob
k5qwg

2545. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 16:14:13 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgol4leb1@hercules.btinternet.com>
Source record: 111339

"Jayne Medley" wrote
> What to some of you think about a Windom Ant .
> Looking to put one up. Can I work all bands
> with no tuner like they say ?
>
==========

Jayne,

No you can't.

Who are "they" anyway ? Antenna salesmen ? Old-wives ?

There is NO antenna which will allow high radiating efficiency on all bands without a tuner.

In fact, there is NO antenna which will allow high radiating efficiency on all bands even WITH a tuner, taking radiation pattern into account!

And to complete the depressing story there is no commercial tuner which will cover all bands from 160 to 10 meters.

To work all bands efficiently, in any geographical direction, you need an antenna farm containing at least 3 separate antennas, a reasonable ground radial system, a number of transmission lines, with availability in the shack of 3 different tuners.

However, the original Windom, which must have first been used 65 or 75 years ago, well before it acquired a name from the first person to take the trouble to describe it in a ham magazine, is a good all round performer. It has to be - it's so simple.

The original Windom is a half-wave dipole, resonant at the the design frequency, fed by a single wire transmission line of random length, the line being tapped off-centre into the dipole. Radiation from the single-wire feedline is intentional. Only a moderate sort of ground-radial system is needed. But a tuner is needed to match any particular band to a 50-ohm transmitter. In the olden-days a 50-ohm transmitter was unheard of.

Relatively modern versions of Windoms are bugged by the sales gimmicks of supposedly balanced twin feedlines and baluns which do nothing but degrade efficiency compared with the original simplicity. There is just as much radiation from the off-centre-fed twin feedline. Antenna salesmen don't mention the subject.

For performance of the original Windom, download in a few seconds and run immediate;y program WINDOM2 from website below
----

```
=======================
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
=======================
```

2546. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 16:28:45 UTC
From: J T <JJnospam@comuserve.com>
Message-ID: <bgolvv$4lo$1@ngspool-d02.news.aol.com>
Source record: 111340

Probably because he is a new ham, memorized the question pool and has no idea what a soldering iron looks like or the difference between TV coax and 75 ohm coax is?

"Nic. Santean" <nic@csd.uwo.ca> wrote in message news:3f2a86d3@shknews01...
> Why don't you build one by yourself ?
>
> Nic.
>
> "Bill" <harley80@prodigy.net> wrote in message
> news:f2tWa.175$PQ7.56@newssvr16.news.prodigy.com...
> > Has anyone tried the new super broomstick receiving antenna for sale on
> > ebay? I was wondering if it was any good or not.
> >
> >
>
>

2547. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 18:16:15 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F2FF437.8D4472D5@shaw.ca>
Source record: 111341

'Doc wrote:
>
> gil,
> Recheck to see if the input and output of the
> tuner aren't backwards.
> 'Doc

I gave the same advice to a guy once and he laughed, thinking
I was just kidding! It turned out to be the problem!
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2548. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 18:16:56 UTC
From: "paulfriedman@comcast.net" <p.paulfriedman@comcast.net>
Message-ID: <swSXa.72641$YN5.55267@sccrnsc01>
Source record: 111342

"J T" <JJnospam@comuserve.com> wrote in message
news:bgolvv$4lo$1@ngspool-d02.news.aol.com...
> Probably because he is a new ham, memorized the question pool and has no
> idea what a soldering iron looks like or the difference between TV coax
and
> 75 ohm coax is?
>
>

OK, let me get this straight....
It's a good thing to make fun and belittle a newbie who is trying to
learn something?
It's the new ham's fault that the current question pool is too easy for
your liking?
No one without experience should become a ham? (not sure how one gains
experience, but hey, I guess that's not important)

Paul

AB0SI (an extra light who never used a soldering iron until licensed nor
did I know anything about coax until I studied for the exams)

2549. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 18:47:14 UTC
From: Jack Twilley <jmt+usenet@twilley.org>
Message-ID: <86n0eo54ct.fsf@duchess.twilley.org>
Source record: 111343

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

This is a little bit off the original topic, but I have a question.

Given two unmarked pieces of coax, how do you determine if they're "50
ohm" or "75 ohm" or whatever? Shorting them doesn't work.

Jack.
- --
Jack Twilley
jmt at twilley dot org
http colon slash slash www dot twilley dot org slash tilde jmt slash
-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (FreeBSD)

iD8DBQE/L/u3GPFSfAB/ezgRAv8RAKCjvWi82W7pp0j8o+i3/74JF533mwCeIiFo
zlXqaNMmkpeFhpNmkQumsgQ=
=6bAh
-----END PGP SIGNATURE-----
```

2550. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 19:01:34 UTC
From: ketalar <F5LCI@wanadoo.fr>
Message-ID: <oprtf4gwfvdah6kb@news.wanadoo.fr>
Source record: 111344

thanks for the idea.
But I already tried this method : it does not work fine here : I'm between concrete walls.

On Sat, 2 Aug 2003 05:28:21 -0400, WB3FUP (Mike Hall) <wb3fup@msn.com> wrote:

> For FM go to Radio Shack. Buy a folded dipole
> (420-2385) for less than $5.00. Put it up as an
> inverted V so that it is omni directional. Enjoy
> your radio.
>

--
Using M2, Opera's revolutionary e-mail client: http://www.opera.com/m2/

2551. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 19:20:36 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <8sTXa.71937$uu5.7945@sccrnsc04>
Source record: 111345

Use an antenna analyzer!

At 1/8 wavelength, from either a short or an open, the input impedance
will be purely resistive. The resistive value is the Zo of the line.

DD, W1MCE

Jack Twilley wrote:

> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> This is a little bit off the original topic, but I have a question.
>
> Given two unmarked pieces of coax, how do you determine if they're "50
> ohm" or "75 ohm" or whatever? Shorting them doesn't work.
>
> Jack.
> - --
> Jack Twilley
> jmt at twilley dot org
> http colon slash slash www dot twilley dot org slash tilde jmt slash
> -----BEGIN PGP SIGNATURE-----
> Version: GnuPG v1.2.2 (FreeBSD)
>
> iD8DBQE/L/u3GPFSfAB/ezgRAv8RAKCjvWi82W7pp0j8o+i3/74JF533mwCeIiFo
> zlXqaNMmkpeFhpNmkQumsgQ=
> =6bAh
> -----END PGP SIGNATURE-----

2552. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 19:29:27 UTC
From: larry <larya24@hotmail.com>
Message-ID: <rATXa.89270$hOa.1133@news02.bloor.is.net.cable.rogers.com>
Source record: 111346

Greetings

I must admit that was my first thought. Unfortunately I don't know if they swr bridge is part of the tuner or not. But are either one connected backwards?

Larry

"'Doc" <w5lz@cwis.net> wrote in message news:3F2F3551.6FB95153@cwis.net...
>
>
> gil,
> Recheck to see if the input and output of the
> tuner aren't backwards.
> 'Doc

2553. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 19:37:31 UTC
From: ketalar <F5LCI@wanadoo.fr>
Message-ID: <oprtf54td0dah6kb@news.wanadoo.fr>
Source record: 111347

On Sat, 02 Aug 2003 15:56:29 GMT, Richard Clark <kb7qhc@comcast.net> wrote:

> Odd no one has actually answered your question.

- Maybe my poor english...

> However, it pretty much depends on the physical dimensions of the
> window frame (does the sash present a moving short across it?) before
> a solid value would work. You also suffer a potential problem of it
> pointing the wrong way to serve your needs (how would you tune it, if
> it didn't hear anything?). Also, where you put the Gamma match would
> also affect how it tuned up.

- No sash windows here in France ; they open (and close) like doors.
The window size is abt 0.90 * 1.60 (metres), which makes a gross 1.7 wave,
not so far from a 2 wavelenghts closed loop, like a square in a circle...
I suppose I could try to space my croc clips a quarter wave apart ??

> Another point, if you just made the match a little longer, threw away
> the capacitor, and screwed it to the wall instead; then it would
> probably do just as well.
> Hint: you may solve your problem more with height (put a simple
> dipole up higher) than with tuning.

- You mean tap on top of the frame ?
>
> 73's
> Richard Clark, KB7QHC

- Tnx es ame to you de F5LCI

--
Using M2, Opera's revolutionary e-mail client: http://www.opera.com/m2/

2554. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 19:56:31 UTC
From: Jack Twilley <jmt+usenet@twilley.org>
Message-ID: <86ispb6fps.fsf@duchess.twilley.org>
Source record: 111348

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>>>>> "Dave" == Dave Shrader <david.shrader@comcast.net> writes:

Dave> Use an antenna analyzer!

Umm, assume that instead of an antenna analyzer, I've got a VOM.

Dave> At 1/8 wavelength, from either a short or an open, the input
Dave> impedance will be purely resistive. The resistive value is the
Dave> Zo of the line.

Without being able to send a signal, I won't be able to test it?

Jack.
- --
Jack Twilley
jmt at twilley dot org
http colon slash slash www dot twilley dot org slash tilde jmt slash
-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (FreeBSD)

iD8DBQE/MAv0GPFSfAB/ezgRAnSGAJ9qX4HHC3vENucos0wEmeZif/llJgCcCyDb
BSqxGGB3nUH5l2kU25SJKvU=
=VFX0
-----END PGP SIGNATURE-----
```

2555. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:01:41 UTC
From: larry <larya24@hotmail.com>
Message-ID: <F2UXa.89333$hOa.62495@news02.bloor.is.net.cable.rogers.com>
Source record: 111349

Greetings

I must admit that was my first thought. Unfortunately I don't know if they swr bridge is part of the tuner or not. But are either one connected backwards?

Larry

"'Doc" <w5lz@cwis.net> wrote in message news:3F2F3551.6FB95153@cwis.net...
>
>
> gil,
> Recheck to see if the input and output of the
> tuner aren't backwards.
> 'Doc

2556. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:17:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj047livc3gdb9@corp.supernews.com>
Source record: 111350

Without any RF test equipment, another way to tell is by physical measurement of the dielectric and inner conductor diameters. But you'll need some calipers to do that. If you have piece of marked cable of the same outside diameter and either impedance for comparison, you can easily tell the difference -- for the same outside diameter, 75 ohm cable has a noticeably smaller inner conductor than 50 ohm cable.

Roy Lewallen, W7EL

Jack Twilley wrote:
> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
> This is a little bit off the original topic, but I have a question.
>
> Given two unmarked pieces of coax, how do you determine if they're "50
> ohm" or "75 ohm" or whatever? Shorting them doesn't work.

2557. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:22:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f30134c$1_6@corp.newsgroups.com>
Source record: 111351

Irv Finkleman wrote:

> 'Doc wrote:
>> Recheck to see if the input and output of the
>>tuner aren't backwards.

> I gave the same advice to a guy once and he laughed, thinking
> I was just kidding! It turned out to be the problem!

A similar thing happened to a friend of mine. He had his
antenna screwed into coax-2 and his switch set on coax-1.
Hint: Looking down on the back of an MFJ tuner, coax-1 is
not on the left.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2558. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:27:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f30145b_6@corp.newsgroups.com>
Source record: 111354

paulfriedman@comcast.net wrote:
> It's a good thing to make fun and belittle a newbie who is trying to
> learn something?

No newbies allowed. The only people allowed are mean old farts suffering
from prostate problems. :-) Hint: Treat them like a duck treats a flood.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2559. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:28:25 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <JrUXa.73192$YN5.55466@sccrnsc01>
Source record: 111352

NO! You can't test it with a VOM. You need a signal with wavelength
[frequency] characteristics.

Someone in your area should have an MFJ 259B. Ask around.

Deacon Dave, W1MCE

Jack Twilley wrote:

> -----BEGIN PGP SIGNED MESSAGE-----
> Hash: SHA1
>
>
>>>>>>"Dave" == Dave Shrader <david.shrader@comcast.net> writes:
>
>
> Dave> Use an antenna analyzer!
>
> Umm, assume that instead of an antenna analyzer, I've got a VOM.
>
> Dave> At 1/8 wavelength, from either a short or an open, the input
> Dave> impedance will be purely resistive. The resistive value is the
> Dave> Zo of the line.
>
> Without being able to send a signal, I won't be able to test it?
>
> Jack.
> - --
> Jack Twilley
> jmt at twilley dot org
> http colon slash slash www dot twilley dot org slash tilde jmt slash
> -----BEGIN PGP SIGNATURE-----
> Version: GnuPG v1.2.2 (FreeBSD)
>
> iD8DBQE/MAv0GPFSfAB/ezgRAnSGAJ9qX4HHC3vENucos0wEmeZif/llJgCcCyDb
> BSqxGGB3nUH5l2kU25SJKvU=
> =VFX0
> -----END PGP SIGNATURE-----

2560. Windows

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:29:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj04sqhb0e02f7@corp.supernews.com>
Source record: 111353

A word to the wise for people who expect to be able to operate from a hotel room.

I recently returned from rainy Arizona back to my home here in sunny Oregon. While in Tucson, I turned on my VX5 to get a weather report from the National Weather Service, and was surprised that I couldn't get the NWS on any of their frequencies from my hotel room, even with the radio against the window. But remembering an experience I had some time back with a rented car's windshield, I opened the window and -- voila -- there was the NWS. It seems that some hotel room windows are now being coated with the same conductive stuff they use on some car windshields. The attenuation, at least at VHF and GPS frequencies, is impressive. Because I think the purpose is blocking UV (and maybe near IR?) to reduce air conditioning loading, I'd expect it to be much more common in hot, sunny climates than elsewhere.

And windows in high-rise hotels often don't open more than a crack, if at all.

Roy Lewallen, W7EL

2561. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:36:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f301683_6@corp.newsgroups.com>
Source record: 111355

Dave Shrader wrote:
> At 1/8 wavelength, from either a short or an open, the input impedance
> will be purely resistive. The resistive value is the Zo of the line.

Don't you mean purely *reactive*, Dave, like 0+jZ0 or 0-jZ0?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2562. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 20:54:18 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F301942.8E6C0B22@shaw.ca>
Source record: 111356

Bill wrote:
>
> Has anyone tried the new super broomstick receiving antenna for sale on
> ebay? I was wondering if it was any good or not.

Bill,
There are a number of variations on the broomstick antenna. They
are all variations on a helically wound antenna (a coil of wire, usually
fairly wide spaced, on a broomstick or dowel). In the absence of any
other antenna they may or may not work well enough to satisfy you, but
you might do just as well or better with a piece of wire strung across
the room or hanging out the window. Transmitting is another case --
but you mentioned the 'receiving antenna'. Hope this helps!

Irv VE6BP
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2563. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 21:23:31 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bgp78m$na404$1@ID-134747.news.uni-berlin.de>
Source record: 111357

And you put it up as an inverted v? Concrete walls does not absorb nearly as much RF as one might think. If you are between concrete walls what do you look at through your window. In more than 20 years I have found more people that are convinced that they need to spend more money for an antenna. I calculated the length necessary, and cut one myself to be used in my cellar. I was amazed to see that what I had invested an hour in constructing was identical to what I could have purchased for $4.00. (At the time I had people lined up to pay me $50. to $100 an hour for my tax preparation and planning expertise.) Building the antenna was not the smartest use of my resources at the time. In fact my home rolled one did not even look as good.

How far away are the stations you want to receive? If they are anything like local, within 50 miles the antenna should work fine. Not the "T's" you receive when you buy a receiver. The folded dipole the SKU of which is below. I assumed you knew what I meant by Inverted V. The center of the antenna is higher, or lower, than the ends. The ends include an angle of between 90 and 150 degrees. (45 to 75 degrees off of the transmission line) This makes the antenna omni-directional and it will work great.

But don't believe me. Continue to fight with the window frame, or go and spend $40 to $60 on the amplified antennas that are sold, and that DO NOT WORK.

--
73 es cul

wb3fup
a Salty Bear

"ketalar" <F5LCI@wanadoo.fr> wrote in message
news:oprtf4gwfvdah6kb@news.wanadoo.fr...
> thanks for the idea.
> But I already tried this method : it does not work fine here : I'm
between
> concrete walls.
>
> On Sat, 2 Aug 2003 05:28:21 -0400, WB3FUP (Mike Hall) <wb3fup@msn.com>
> wrote:
>
> > For FM go to Radio Shack. Buy a folded dipole
> > (420-2385) for less than $5.00. Put it up as an
> > inverted V so that it is omni directional. Enjoy
> > your radio.
> >
>

>
>
> --
> Using M2, Opera's revolutionary e-mail client: http://www.opera.com/m2/

2564. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 21:30:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj08ftmpd1a7e2@corp.supernews.com>
Source record: 111358
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Oh, I'm not correcting that statement -- except that it looks like a
whole lot more than one are being born every minute now.

Roy Lewallen, W7EL

Dick Carroll; wrote:
> Roy, I still like your first statement better :"There's one born every minute..."
>
> Roy Lewallen wrote:
>
>
>>I stand corrected! A little bit of web research shows that this would be
>>a venture capitalist's dream. . .

2565. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 21:35:57 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <1rVXa.73507$YN5.55448@sccrnsc01>
Source record: 111359
Body handling: HTML body converted to readable text

"paulfriedman@comcast.net" wrote in message
news:swSXa.72641$YN5.55267@sccrnsc01...
>> OK, let me get this straight....
> It's a good thing to make fun and belittle a newbie who is trying to
> learn something?

Get used to it. There are a lot of them out there that will give you the same treatment on the air. As soon aas they recognize that yur call has not been around since Marconni, they will emidiatly labeble you as a know nothing.

> It's the new ham's fault that the current question pool is too easy
for
> your liking?

Yes, it is your fault. Reather than comply with modern rules, you should just give up on being a ham because you can't do things the old way (whatever that is).

> No one without experience should become a ham? (not sure how one gains
> experience, but hey, I guess that's not important)

The old hams were born as EEs. There was no need for them to learn anything as they alredy knew it.

These attitudes, while not being predominant, are common. Ignore it and move on.
>
> Paul
>
> AB0SI (an extra light who never used a soldering iron until licensed nor
> did I know anything about coax until I studied for the exams)
>
>

2566. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 21:36:35 UTC
From: Jack Twilley <jmt+usenet@twilley.org>
Message-ID: <86ekzz6b30.fsf@duchess.twilley.org>
Source record: 111360

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

>>>>> "Roy" == Roy Lewallen <w7el@eznec.com> writes:

Roy> Without any RF test equipment, another way to tell is by physical
Roy> measurement of the dielectric and inner conductor diameters. But
Roy> you'll need some calipers to do that. If you have piece of marked
Roy> cable of the same outside diameter and either impedance for
Roy> comparison, you can easily tell the difference -- for the same
Roy> outside diameter, 75 ohm cable has a noticeably smaller inner
Roy> conductor than 50 ohm cable.

This is very helpful. Thanks!

Jack.
- --
Jack Twilley
jmt at twilley dot org
http colon slash slash www dot twilley dot org slash tilde jmt slash
-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (FreeBSD)

iD8DBQE/MCNoGPFSfAB/ezgRAu4eAJ0UNwB/sUsibeEIIJnNhfb8EzT1yQCfbi6R
ZkSckI9I3eJabxJjUDxk84M=
=6cOK
-----END PGP SIGNATURE-----
```

2567. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 21:37:56 UTC
From: J T <JJnospam@comuserve.com>
Message-ID: <bgp83lhur1@ngspool-d02.news.aol.com>
Source record: 111361

I was actually waiting for someone to catch it but you were too busy
thinking troll or flame.

TV Coax is 75ohm.

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f30145b_6@corp.newsgroups.com...
> paulfriedman@comcast.net wrote:
> > It's a good thing to make fun and belittle a newbie who is trying to
> > learn something?
>
> No newbies allowed. The only people allowed are mean old farts suffering
> from prostate problems. :-) Hint: Treat them like a duck treats a flood.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2568. Re: Vee Beam info needed -diff NEC and NEC-4 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:00:03 UTC
From: NN7K@reno.rmci.net
Message-ID: <TDVXa.2183$jq.1280@fe01.atl2.webusenet.com>
Source record: 111362

Roy, this brings up a question , and am curious about-- Just what are the differences between EZNEC and EZNEC -4 ? Have had copies of Elnec, thru EZNEC, and you keep doing great job improveing each one, but keep hearing about NEC-4 (as opposed to NEC, and NEC-2), and am curious (no puns intended), as to what are the major advantages of NEC-4 over NEC, and NEC-2 (what ever happened to NEC-3?) Is it worth upgradeing to, or, of interest only to someone doing complex arrays ? I'm sure others would also be interested, as am not in a position to get engineering tomes (am retired), but am curious. Kinda like a teacher that was at Oregon Institute of Technology (last name of "Barber"), who ran a company that built antennas for military planes - turned out a curtain, so if part of hull was shot, the rest of the hull would radiate! Wished I had more oppurtunity when still in K.Falls to pump him, but they cut his teaching position. Guess you the expert to ask, now-- Jim NN7K

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:3F2DF808.8040102@eznec.com...
> I passed along this info to Dean Straw, N6BV, the ARRL Antenna Book
> editor. He replied that since the 19th Edition, he's used EZNEC/4 (an
> NEC-4 based program) for generating rhombic and vee beam data. I'd hope
> that it would agree closely with the 1980 NEC analysis.
>
> Roy Lewallen, W7EL
>
> Crazy George wrote:
> > Scott:
> >
> > The curves for V Beams in the ARRL Antenna Handbook, and apparently also
in
> > the engineering texts were derived from a few experimentally determined
data
> > points assuming a sinusoidal current on the arms. In the July 1980 IEEE
> > Transactions on Antennas and Propagation, Gary Thiele and Ernie Ekelman
> > published a rigorous NEC analysis of the configuration, including a
couple
> > of useful curves. Both the optimum included angle vs. arm length and
> > directivity vs. arm length differ significantly from the previously
> > published curves. So, dig up a copy of IEEE-A&P Trans., Vol. AP-28, No.
4,
> > and look on pp. 588-590 for the full story.
> >
> > --
> > Crazy George
> > Remove NO and SPAM from return address

>

2569. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:02:18 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vj0adk7cqlo17a@corp.supernews.com>
Source record: 111363
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Roy
One-a-minute was the rate when P T Barnum was alive.
There are more people now. ;^)
73
H.
NQ5H

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vj08ftmpd1a7e2@corp.supernews.com...
> Oh, I'm not correcting that statement -- except that it looks like a
> whole lot more than one are being born every minute now.
>
> Roy Lewallen, W7EL
>
> Dick Carroll; wrote:
> > Roy, I still like your first statement better :"There's one born every
minute..."
> >
> > Roy Lewallen wrote:
> >
> >
> >>I stand corrected! A little bit of web research shows that this would be
> >>a venture capitalist's dream. . .
>

2570. Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:12:22 UTC
From: jason_hsu@my-deja.com
Message-ID: <f7d9a152.0308051412.54d4c913@posting.google.com>
Source record: 111364
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

THE BIG QUESTION: How do you measure the audio noise level in a receiver? Does anyone here know of any circuits that show the overall audio noise level?

Let me tell you what this is all about.

SIDE NOTE: Thanks again to those of you who helped me with the SWR/wattmeter project I worked on last semester. This project taught me more about ferrite cores, op amps, and diodes than ANY class possibly could. I learned about stray capacitance and what rails mean. I also learned that not all 1N34A diodes are alike.

In this coming semester, I will be working on an even more ambitious project - an automatic noise canceller for 160m to 10m. It will definitely be a control system, and it may even use DSP. The device will also require a motor for automatically adjusting the controls. The idea is to design and build an automatic version of the Timewave ANC-4 or the MFJ-1025/1026 RF noise cancellers.

The ANC-4 and MFJ-1025/1026 are manual devices. There are automatic noise cancellation devices, but their adjustments are at the audio level rather than the RF level.

The back panel of my device will contain:
1. Connector for the signal antenna
2. Connector for the transceiver
3. Connector for the noise antenna
4. DC power connector

The front panel of my device will contain:
1. Power switch and the obligatory idiot light to show that the power is on
2. 2 audio connectors: one connects to the transceiver, and the other connects to an external speaker
3. Frequency range control for choosing the inductance values, as the proper inductance values in the RF noise cancelling circuit varies with frequency
4. Phase range knob so that the phase shifter can cover all 360 degrees
5. Manual noise phase knob
6. Manual noise gain knob
7. LED display to show the noise level
8. Noise phase adjustment push-button: Pressing this button activates the control system to adjust the phase shift of the noise.
9. Noise gain adjustment button: Pressing this button activates the

control system to adjust the gain of the noise.

Other features:
1. I need to design my automatic noise canceller so that parts won't blow up if I transmit 100W through it. This probably requires some type of automatic bypass circuitry.
2. Transmitted power must not reach the noise antenna (at least not without a great deal of attenuation)
3. It also needs a low insertion loss.
4. A preamplifier would be desirable.

How it would work:
1. You manually turn the phase and gain controls to the minimum settings. (Or I could put in a reset button to do that. No, that would add too much complexity to the circuit.)
2. You select the band using the band inductance switch.
3. You move the phase polarity switch to the negative setting. If the noise cancellation procedure does not work, it probably means the opposite setting is required.
4. Press the noise gain adjustment button. The device adjusts the noise gain until a change in the signal level (or the S meter) is just noted. (Some type of derivative function would come into play.)
5. Press the noise phase adjustment button. The device adjusts the noise phase shift so as to produce a null in the signal level (or the S meter).
6. Steps 4 and 5 could be repeated to make further adjustments. There might be away to activate the control system with just one button.

Does anyone know of circuits that measure audio noise? Making the RF noise canceller automatic requires an audio circuit to monitor the noise level. This noise level needs to be converted into a large DC voltage, which feeds the motors that turn the variable capacitor and potentiometer.

Jason Hsu, AG4DG
usenet@@@@jasonhsu.com

2571. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:19:06 UTC
From: NN7K@reno.rmci.net
Message-ID: <KVVXa.2190$jq.737@fe01.atl2.webusenet.com>
Source record: 111365

Not necessarily!, there are also "Broomstick " antennas (VHF- UHF type) that are STACKED sections of coax (Co-linears), where the sheath of a 1/2 wave length piece is soldered to the center conductor of the next 1/2 wave piece of coax (and also vice versa), with several of these sections, done, the last section, if memory serves me right, is a 1/4 wave piece of wire, and it is attached to the last 1/2 wave section, shield, and center conductor shorted together!
similar to DB PRODUCTS- Green Hornet, and has a 1/4 wavelength radial for counterpoise.
as info, Jim NN7K

"Irv Finkleman" <finkirv@shaw.ca> wrote in message news:3F301942.8E6C0B22@shaw.ca...
> Bill wrote:
> >
> > Has anyone tried the new super broomstick receiving antenna for sale on
> > ebay? I was wondering if it was any good or not.
>
> Bill,
> There are a number of variations on the broomstick antenna. They
> are all variations on a helically wound antenna (a coil of wire, usually
> fairly wide spaced, on a broomstick or dowel). In the absence of any
> other antenna they may or may not work well enough to satisfy you, but
> you might do just as well or better with a piece of wire strung across
> the room or hanging out the window. Transmitting is another case --
> but you mentioned the 'receiving antenna'. Hope this helps!
>
> Irv VE6BP
> --

2572. Re: small 10 meter beam for satellite RX

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:24:40 UTC
From: NN7K@reno.rmci.net
Message-ID: <Y_VXa.2194$jq.1269@fe01.atl2.webusenet.com>
Source record: 111366

One trick I used (but this mainly at 435/145 , back in oscar 6/7 days was a 1/4 wave ground plane, but with the element bent to about a 45 degree angle towards the north pole. no gain, but as stated, shouldn't need much to hear the birds! might give it a try! Jim NN7K

"Mark Keith" <nm5k@wt.net> wrote in message news:25eb70d7.0308032119.1fa9d8e0@posting.google.com...
> bruceandkarla@ziggycom.net (Bruce) wrote in message news:<7192d525.0308031025.47d47a23@posting.google.com>...
> > iam wanting the plans to a small 10 meter beam I could use for satillite RX
> > I am trying to get set up to work RS-15. or a good small beam to buy.
> > Thanks
> >
> > Bruce
> > KD4PQF
>

2573. Re: Windows

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:28:37 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vj0bt3rbrdoj9f@corp.supernews.com>
Source record: 111367

It's called low e glass and it's used to cut cooling costs in southern
desert climates.
hank wd5jfr
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vj04sqhb0e02f7@corp.supernews.com...
> A word to the wise for people who expect to be able to operate from a
> hotel room.
>
> I recently returned from rainy Arizona back to my home here in sunny
> Oregon. While in Tucson, I turned on my VX5 to get a weather report from
> the National Weather Service, and was surprised that I couldn't get the
> NWS on any of their frequencies from my hotel room, even with the radio
> against the window. But remembering an experience I had some time back
> with a rented car's windshield, I opened the window and -- voila --
> there was the NWS. It seems that some hotel room windows are now being
> coated with the same conductive stuff they use on some car windshields.
> The attenuation, at least at VHF and GPS frequencies, is impressive.
> Because I think the purpose is blocking UV (and maybe near IR?) to
> reduce air conditioning loading, I'd expect it to be much more common in
> hot, sunny climates than elsewhere.
>
> And windows in high-rise hotels often don't open more than a crack, if
> at all.
>
> Roy Lewallen, W7EL
>

2574. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:32:00 UTC
From: NN7K@reno.rmci.net
Message-ID: <Q5WXa.2199$jq.215@fe01.atl2.webusenet.com>
Source record: 111368
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Since ANYTHING has power moving thru it will generate heat that will have
to be removed from your -273 degree (0 Kelvin), what do you propose for a
refridgerator to get rid of THAT excess heat?

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:rHzXa.65950$o%2.31356@sccrnsc02...
> We can totally eliminate all this noise if we simply operate our
> equipment at -273 C.
>
> Deacon Dave, W1MCE
>
> Roy Lewallen wrote:
>
> > Egad, there's a sucker born every minute. It's stuff like this that
> > makes venture capitalists the cynical SOBs they are.
> >
> > Roy Lewallen, W7EL
> >
> > k4wge wrote:
> >
> >> Thermal noise in electronic equipment is typically created by the
> >> excitation of phonons, which are resonances in conductors caused by
> >> the movement of electrons through the quantum well. Phonons are a type
> >> of noise in themselves; they are caused by a certain class of
> >> electrons colliding with the crystal lattice of conductors (silver,
> >> copper, etc.) through which they are being transmitted. Such phonons
> >> travel, not at the speed of light, but of sound, and therefore are
> >> instantly out of phase with the signal. Shot noise, which is generated
> >> by the operation of transistors, is similar in nature to thermal or
> >> white noise. Low-frequency (1/f) noise is always present, and
> >> increases as an inverse power of the frequency.
> >>
> >> The Bybee solution is based on principles derived from quantum
> >> mechanics, the study of how electrons behave at the subatomic level.
> >>
> >>
> >> http://www.bybeetech.com/
> >
> >
>

2575. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:52:16 UTC
From: yankneck696@aol.com
Message-ID: <a8791500.0308051452.8d14885@posting.google.com>
Source record: 111219

"J T" <JJnospam@comuserve.com> wrote in message
news:<bgolvv$4lo$1@ngspool-d02.news.aol.com>...
>or the difference between TV coax and
> 75 ohm coax is?

Well, I would have a hard time differentiating between 75 ohm coax &
TV coax, too. I happen to know that they are the same darn thing.
I happen to be a No-Coder
I didn't ever study an "Exam Book".
I happened to pass the tests right up thru advanced while most (at
MIT) were still on the tech exam. Oh, and it was on 1 hour's notice
from a friend that was gonna upgrade.I said "what the heck"? Let's see
how hard it is? It happened to be simple to me.
No, I don't know code, but I must know something.
Do you really think that Code should be a delineater for someone with
an interest in the HOBBY?
Should a person (WHO DOESN'T HAVE THE GUTS TO PUT A REAL E-MAIL
ADDRESS) CRITICISE & DEMEAN SOMEONE?
Maybe they are an Extra & are just asking a simple question as to the
effectiveness of a product to see if they SHOULD build it?

All of these are just my ramblings....

Ed
KB1DQX

P.S. Go ahead & spam me.. Go ahead & criticise me.. Do whatever you
want...

2576. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:53:00 UTC
From: jgboyles@aol.com
Message-ID: <20030805185300.28365.00000044@mb-m10.aol.com>
Source record: 111220

>Does anyone know of circuits that measure audio noise?

Sure, Short out your rf input to the audio amp, and measure the noise. If you have a noisy output after you short the input, then you have a noisy amp. If you have a noisy audio amp, then you need another design.
73 Gary N4AST

2577. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 22:55:38 UTC
From: NN7K@reno.rmci.net
Message-ID: <_rWXa.2208$jq.825@fe01.atl2.webusenet.com>
Source record: 111221

Yeh, and that is (if memory serves me correct) PEAK-PEAK voltage (not 2000 volts, but 2000 volts Peak-Peak or 5640 VOLTS !) Even at 100 watt power level, would take one heck of a mismatch to generate that kind of volts! Keep in mind that in good ol' days, that center conductor of RG-8 was used as Power supply feed for lots of AMPS! 3&4 KV, in some of those!
Jim

Tam sent:
> Tim,
>
> The voltage rating on coax is a lot higher than what you would calculate
> based on max power. I can't find the numbers right now, but seem to recall
> that RG58 was rated at 750 V or more. The big stuff is good for over
2000V.
> The reason you don't want the end of the wire exposed is that it could
lead
> to arcing or corona. Probably not at low power, though. Sorry, can't
answer
> your other question.
>
> Tam/WB2TT
>
>

2578. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:02:40 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <kIWXa.73523$o%2.34958@sccrnsc02>
Source record: 111223

OOOPPPSSS!!!

You're right!!!!

Mea Culpa!

DD

W5DXP wrote:

> Dave Shrader wrote:
>
>> At 1/8 wavelength, from either a short or an open, the input impedance
>> will be purely resistive. The resistive value is the Zo of the line.
>
>
> Don't you mean purely *reactive*, Dave, like 0+jZ0 or 0-jZ0?

2579. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:09:05 UTC
From: gil <gilpi@mindspring.com>
Message-ID: <bgpd54ipo1@slb6.atl.mindspring.net>
Source record: 111222

I want to thank all for the input. The problem seems to be in the meter circuit, couple of guys mentioned the diodes could be shot?
There is no sign of anything burned up or broken, right now I'm bypassing the meter and its components and just using the tuner with an outboard SWR/Power meter.
What is the way of telling if the diodes are bad using a voltmeter? And should they be removed before checking or can they be checked while mounted?

Again...thanks, you guys have been great help

Gil
"gil" <gilpi@mindspring.com> wrote in message news:bgmt7tfdc1@slb3.atl.mindspring.net...
> I have the MFJ-971 portable tuner that I use with a random wire when all of
> the sudden I could not load on any bands and the "forward" power reads very
> low. At first I thought I blew the rig (TS-430) but then when I tried a
> couple of different rigs ,the same thing happens... high SWR readings and
> low power, also tried different antennas with the MFJ-971 and got the same
> results.
> Any suggestions before going out and purchasing another tuner? And is it
> possible to "blow" a tuner, I dont use anything over 50 watts on CW.
> Thanks.....gil
>
>

2580. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:15:32 UTC
From: NN7K@reno.rmci.net
Message-ID: <EKWXa.2219$jq.1599@fe01.atl2.webusenet.com>
Source record: 111224

Well, depends on HOW CLOSE to my flesh I held it! (according to the
inverse -square law, temperature decreases at a rate of 1/4 , for every 1/2
of an increment it is removed from you)!
Jim NN7K

Richard wrote:
> This 0.1dB in the wrong hands is clearly an example of extravagant
> dismissal or myopic attention. And speaking of hands, how long would
> you consider it trivial if you had to hold onto the sucker for 20
> seconds?
>
> 73's
> Richard Clark, KB7QHC

2581. Re: Quantum Purifiers -

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:22:35 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bgpe2kfvq1@news.service.uci.edu>
Source record: 111225
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

Dick Carroll; wrote:

> Roy, I still like your first statement better :"There's one born every minute..."

Here are some of the claims:

"Bybee Technologies claims that the quantum filtering provided also
speeds up electrons by as much as 50% and in the process selectively
removes undesirable ones, thus purifying the remaining signal."

The review this was taken from (SoundStage!) then goes on to tout the
"damping characteristics" of the wooden box the device is housed in.
I'm curious about whether the reviewer might also happen to write for
the Weekly World News.

Reminds me of the blind man selling pencils on the street corner for
$10,000 apiece. He claimed he only needed to sell one.

:-)
73, ac6xg

> Roy Lewallen wrote:
>
>
>>I stand corrected! A little bit of web research shows that this would be
>>a venture capitalist's dream. I have to continually remind myself not to
>>overestimate the golden-ear crowd -- after all, the gold-plated 8 ohm
>>characteristic impedance speaker cables sold (and I assume still sell)
>>like hot cakes. The placebo effect is certainly powerful, but it's
>>possible that the "quantum purifiers" might actually do something.
>>Rather than believe that the purveyor is actually selling components
>>whose composition is "classified by the U.S. military", I'd be willing
>>to bet they're some sort of more-or-less off the shelf varistor. That
>>would flavor the music a bit, and anyone who'd just dropped 600 bucks
>>for a pair of them would no doubt find the flavoring to be marvelous. A
>>few minutes with a curve tracer and some web specifications should pin
>>the source down pretty quickly. But I'm not quite 600 bucks curious. . .
>>
>>Roy Lewallen, W7EL
>>
>>Roy Lewallen wrote:
>>
>>>Egad, there's a sucker born every minute. It's stuff like this that
>>>makes venture capitalists the cynical SOBs they are.
>>>

>>>Roy Lewallen, W7EL
>
>

2582. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:27:26 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bgpeg2$8rj$1@slb9.atl.mindspring.net>
Source record: 111226

"'Doc" <w5lz@cwis.net> wrote in message news:3F2F18BF.3F5F43DC@cwis.net...
>
>
> whitehat,
> Yes, it will work on 80 meters. Don't count on
> using it on 20 meters. Depending on the tuner it
> may 'tune', but you won't have the 'best' results.
> 'Doc

Perhaps basic antenna theory needs to be revisited here (?).

A center fed half wave antenna using standard 50 to 70 ohm coax will operate
with a 'reasonable' SWR at the ODD multiples of the fundamental.

Nice and simple.

Dan/W4NTI

2583. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:30:27 UTC
From: NN7K@reno.rmci.net
Message-ID: <CYWXa.2240$jq.2038@fe01.atl2.webusenet.com>
Source record: 111227

Did the same thing!! Even used the chasis! Sawed it off, moved the front cover/ cap, and rotary inductor into the area of the osc/ magic eye tuneing tube area-- makes nice package, and considering these tuned from around 160 meters thru 20 (or thereabouts) in different versions, and loaded a aprox 20 foot piece of wire--- make very versatile tuners . also wonder where all of the bazillions of these dissapeared to! Jim

Dave wrote:

> Dick, A REAL LONG time ago when I needed my first tuner I bought a
> military surplus ARC-5 transmitter for $5 USD and removed the roller
> inductor and final plate tuning capacitor. [Actually, I bought 3 ARC-5s:
> one for 80, one for 40 both converted to XTAL control, and one for the
> tuner and spare 1625s. Nice NOVICE CW rigs.]
>
> Made a real nice L-tuner at 125 watts continuous duty!!
>
> Hmmm .... where are those old ARC-5s when someone needs them??
>
> Deacon Dave, W1MCE
>
> Dick wrote:
>
> > In a time long, long ago, there were no commercial antenna tuners that
> > I can recall. The first commercial tuner I remember was the Johnson
> > Viking. Everyone I knew made their own. You just went to the surplus
> > store, and got a coil and capacitor that looked about right, and tried
> > it. No one owned any equipment to measure them anyway. We never used
> > relays. Maybe a switch, or just change the coil. The ARRL handbook
> > and Antenna Handbooks still have diagrams for antenna tuners. Also
> > the Hints and Kinks manuals, among many others.
> >
> > Dick - W6CCD
> >
> > On 4 Aug 2003 12:51:51 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
> > wrote:
> >
> >
> >
> >>Mark,
> >>What sort of range of impedance matching would this provide?
> >>How would you switch bands and what voltage/capacitor range
> >>would be required?
> >>I suspect you would have to have several relays to pick up various
> >>points on the oatmeal inductor as well as a rotation method

> >>for the capacitor
> >>
> >>Seems like you have something specific in mind that you would put in a
box
> >>for safety reasons. Are the specifics shown somewhere for people to
copy?
> >>Art
> >
> >
>

2584. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:31:30 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030805193130.03117.00000082@mb-m12.aol.com>
Source record: 111228

>Making the RF
>noise canceller automatic requires an audio circuit to monitor the
>noise level. This noise level needs to be converted into a large DC
>voltage, which feeds the motors that turn the variable capacitor and
>potentiometer.

How would your noise canceller know what is undesirable noise and what is
desirable signal?
The motor driven gizmos are are kind of history, we have parts that can be
controlled by the voltages electronically.
GL

Yuri

2585. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:33:34 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030805193334.03117.00000083@mb-m12.aol.com>
Source record: 111229

>
>THE BIG QUESTION: How do you measure the audio noise level in a
>receiver?

Its called Vu meter (or circuit).

Yuri

2586. Re: Great Radio Books

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:36:32 UTC
From: NN7K@reno.rmci.net
Message-ID: <j2XXa.2242$jq.1929@fe01.atl2.webusenet.com>
Source record: 111230

Naw-- For those wanting Indispensable books, try "Antennas" by Kraus, "Reflections", and "Reflections II", By Maxwell, and, if into antenna modeling, try: "ARRL Antenna Modeling Course" by Cebik -- Non cheap, but all well worth the BUX! Jim NN7K

2587. Re: Vee Beam info needed -diff NEC and NEC-4 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-05 23:53:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj0grahq7anobc@corp.supernews.com>
Source record: 111231

There are two major differences between EZNEC and EZNEC/4. The first is that EZNEC/4 is one of the two EZNEC pro programs, the other being EZNEC-M. These programs are intended for professional use (although some amateurs have bought them) and cost several times as much as the standard version of EZNEC. The added features of the pro versions are 10,000 segment capability, the ability to read and write description files in NEC format, ground wave analysis, automated rectangular wire grid creation, and a way to do advanced replication, rotation, and translation of groups of wires. EZNEC-M is identical to EZNEC/4 except that EZNEC-M only has an NEC-2 calculating engine, while EZNEC/4 gives you the choice of NEC-2 or NEC-4. And the availability of an NEC-4 calculating engine is the second difference between EZNEC and EZNEC/4, since EZNEC has only NEC-2.

The most striking advantage of NEC-4 over NEC-2 is that it allows the modeling of buried conductors. It also is relatively free of the error NEC-2 creates when modeling connected wires of dissimilar diameters, and will hold up better at the edges of calculation capability. For example, it'll handle loops which are a bit smaller than the smallest that NEC-2 can manage. For most models above ground, though, NEC-2 and NEC-4 will give you virtually identical results.

NEC-4 has some additional capabilites which I haven't yet implemented in EZNEC/4. These include the ability to include the effect of wire insulation, and the ability to define the conductivity and permittivity of the primary medium (fixed at free space for NEC-2). It also does some checking of the geometry for errors such as overlapping or crossing wires. EZNEC/4 does have it run these checks.

NEC-2 is public domain software -- anyone can get it and use it for any purpose, free. It's on the Web as both source code and compiled for a number of platforms. But NEC-4 is copyrighted by the University of California, and is not free. Any U.S. citizen can buy it for use within the U.S. I believe the cost is still $850, although there's a discount for universities, and some military and defense groups can get it free. I sell EZNEC/4, which includes an NEC-4 calculating engine, only to people and organizations whom I've confirmed have a valid NEC-4 license, via confirmation from the issuing agency. (You don't need to have NEC-4 in order to run EZNEC/4, but you must have purchased it before I'll sell EZNEC/4 to you.) EZNEC/4 is $600 on top of the $850 NEC-4 fee, so no, an upgrade from EZNEC isn't a viable choice for the vast majority of hobby users.

NEC-3 was a forerunner of NEC-4, and was sort of a first attempt at implementing NEC-4's advanced features. It had a number of shortcomings

which were fixed in NEC-4. NEC-4 wasn't available to the public for a
number of years, and NEC-3 was never made available to the public.

If anyone is seriously interested in purchasing NEC-4, drop me an email
and I'll be glad to tell you whom to contact.

Roy Lewallen, W7EL

NN7K@reno.rmci.net wrote:
> Roy, this brings up a question , and am curious about-- Just what are the
> differences between EZNEC and EZNEC -4 ? Have had copies of Elnec, thru
> EZNEC, and you keep doing great job improveing each one, but keep hearing
> about NEC-4 (as opposed to NEC, and NEC-2), and am curious (no puns
> intended), as to what are the major advantages of NEC-4 over NEC, and NEC-2
> (what ever happened to NEC-3?) Is it worth upgradeing to, or, of interest
> only to someone doing complex arrays ? I'm sure others would also be
> interested, as am not in a position to get engineering tomes (am retired),
> but am curious. Kinda like a teacher that was at Oregon Institute of
> Technology (last name of "Barber"), who ran a company that built antennas
> for military planes - turned out a curtain, so if part of hull was shot, the
> rest of the hull would radiate! Wished I had more oppurtunity when still in
> K.Falls to pump him, but they cut his teaching position. Guess you the
> expert to ask, now-- Jim NN7K

2588. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 00:21:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <t1i0jvs06cev4l287409qpc9ut94jprup6@4ax.com>
Source record: 111233

On Tue, 5 Aug 2003 16:15:32 -0700, <NN7K@reno.rmci.net> wrote:

>Well, depends on HOW CLOSE to my flesh I held it! (according to the
>inverse -square law, temperature decreases at a rate of 1/4 , for every 1/2
>of an increment it is removed from you)!
>Jim NN7K
>
>Richard wrote:
>> This 0.1dB in the wrong hands is clearly an example of extravagant
>> dismissal or myopic attention. And speaking of hands, how long would
>> you consider it trivial if you had to hold onto the sucker for 20
>> seconds?
>>
>> 73's
>> Richard Clark, KB7QHC
>
>

Hi Jim,

How close is anything to your flesh when you are holding it? Are you
still holding it, if it were 2 times further away?

73's
Richard Clark, KB7QHC

2589. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 00:21:10 UTC
From: Joe Strain <jstrain1@cfl.rr.com>
Message-ID: <WRXXa.16793$K4.867859@twister.tampabay.rr.com>
Source record: 111232

Go to Fair Radio and check out their military surplus too, and if anybody
can, check out this one and advise on it applicability for use with a ATS
909
http://www.fairradio.com/0mk-12.htm 12' MILITARY MAST KIT $59.95

Thanks
Yodar

==========
"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
news:ebhviv87vg7b3tpk6oforub1ob7jeou1da@4ax.com...
> On Tue, 05 Aug 2003 02:34:37 GMT, "Alan Caplan"
> <alan.caplan@frontiernet.net> wrote:
>
> >Looking for a vertical like I used in Navy Communications. Base insulator
> >and heavy walled tubing 32 feet high. Surplus fine.
> >
> >Alan K4AVQ/ P40AV
> >
>
> Try the web site for Surplus Sales of Nebraska; maybe give them a
> call. I have one of their paper catalogs, about 2-3 years old. They
> list a Collins vertical, 36' high, $149, part num. (ANT) AC-2811.
>
> Bob
> k5qwg
>
>
>

2590. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 00:41:41 UTC
From: TweetIdee <dgmason99@att99.net>
Message-ID: <99YXa.86458$3o3.5970036@bgtnsc05-news.ops.worldnet.att.net>
Source record: 111234
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

"Jason Hsu" <jason_hsu@my-deja.com> wrote in message
news:f7d9a152.0308051412.54d4c913@posting.google.com...
> THE BIG QUESTION: How do you measure the audio noise level in a
> receiver? Does anyone here know of any circuits that show the overall
> audio noise level?
>
> Let me tell you what this is all about.
>
> SIDE NOTE: Thanks again to those of you who helped me with the
> SWR/wattmeter project I worked on last semester. This project taught
> me more about ferrite cores, op amps, and diodes than ANY class
> possibly could. I learned about stray capacitance and what rails
> mean. I also learned that not all 1N34A diodes are alike.
>
> In this coming semester, I will be working on an even more ambitious
> project - an automatic noise canceller for 160m to 10m. It will
> definitely be a control system, and it may even use DSP. The device
> will also require a motor for automatically adjusting the controls.
> The idea is to design and build an automatic version of the Timewave
> ANC-4 or the MFJ-1025/1026 RF noise cancellers.
>
> The ANC-4 and MFJ-1025/1026 are manual devices. There are automatic
> noise cancellation devices, but their adjustments are at the audio
> level rather than the RF level.
>
> The back panel of my device will contain:
> 1. Connector for the signal antenna
> 2. Connector for the transceiver
> 3. Connector for the noise antenna
> 4. DC power connector
>
> The front panel of my device will contain:
> 1. Power switch and the obligatory idiot light to show that the power
> is on
> 2. 2 audio connectors: one connects to the transceiver, and the other
> connects to an external speaker
> 3. Frequency range control for choosing the inductance values, as the
> proper inductance values in the RF noise cancelling circuit varies
> with frequency
> 4. Phase range knob so that the phase shifter can cover all 360
> degrees
> 5. Manual noise phase knob
> 6. Manual noise gain knob

> 7. LED display to show the noise level
> 8. Noise phase adjustment push-button: Pressing this button activates
> the control system to adjust the phase shift of the noise.
> 9. Noise gain adjustment button: Pressing this button activates the
> control system to adjust the gain of the noise.
>
> Other features:
> 1. I need to design my automatic noise canceller so that parts won't
> blow up if I transmit 100W through it. This probably requires some
> type of automatic bypass circuitry.
> 2. Transmitted power must not reach the noise antenna (at least not
> without a great deal of attenuation)
> 3. It also needs a low insertion loss.
> 4. A preamplifier would be desirable.
>
> How it would work:
> 1. You manually turn the phase and gain controls to the minimum
> settings. (Or I could put in a reset button to do that. No, that
> would add too much complexity to the circuit.)
> 2. You select the band using the band inductance switch.
> 3. You move the phase polarity switch to the negative setting. If
> the noise cancellation procedure does not work, it probably means the
> opposite setting is required.
> 4. Press the noise gain adjustment button. The device adjusts the
> noise gain until a change in the signal level (or the S meter) is just
> noted. (Some type of derivative function would come into play.)
> 5. Press the noise phase adjustment button. The device adjusts the
> noise phase shift so as to produce a null in the signal level (or the
> S meter).
> 6. Steps 4 and 5 could be repeated to make further adjustments.
> There might be away to activate the control system with just one
> button.
>
> Does anyone know of circuits that measure audio noise? Making the RF
> noise canceller automatic requires an audio circuit to monitor the
> noise level. This noise level needs to be converted into a large DC
> voltage, which feeds the motors that turn the variable capacitor and
> potentiometer.
>
> Jason Hsu, AG4DG
> usenet@@@@jasonhsu.com

Allow me to infuse a different idea. Think about noise as a fairly broadband phenomenon. The same atmospheric noise that you hear on 21.500 Mhz will also be heard on 21.510 Mhz. Consider the possibility of biulding two identical receivers, the main receiver tuned to the desired reception frequency, the other tuned just a few Khz away, but out of the received signal's bandwidth. Then, you detect the noise on the second receiver, invert it, and sum it into the first receiver's signal chain. This concept is used in ultra-low noise, high sensitivity deep space receivers to almost

totally eliminate noise in the received signal.

Now, as to your concern to keep 100W of RF from blowing up your noise canceller. That's what antenna changeover relays are for. They normally connect the antenna to the receiver, but when the transmitter is keyed up, the relay connects the antenna to the transmitter output, and disconnects it from the receiver. Simple, but effective, and has been used for many many years in amateur as well as commercial radio equipment.
--
Tweetldee
Tweetldee at att dot net (Just subsitute the appropriate characters in the address)

Time is what keeps everything from happening all at once.

2591. Re: When antenna tuner won't tune

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 00:50:46 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <GhYXa.74722$YN5.55883@sccrnsc01>
Source record: 111235

With a soldering iron [low wattage] lift one lead of each diode.

A multimeter should read high resistance one way [> 1 megohm] and low
resistance the other way [~<100 ohms +/-].

If it reads low both ways it is shorted; if it reads high both ways it
is open.

Deacon Dave, W1MCE

gil wrote:

> I want to thank all for the input. The problem seems to be in the meter
> circuit, couple of guys mentioned the diodes could be shot?
> There is no sign of anything burned up or broken, right now I'm bypassing
> the meter and its components and just using the tuner with an outboard
> SWR/Power meter.
> What is the way of telling if the diodes are bad using a voltmeter? And
> should they be removed before checking or can they be checked while mounted?
>
> Again...thanks, you guys have been great help
>
> Gil
> "gil" <gilpi@mindspring.com> wrote in message
> news:bgmt7tfdc1@slb3.atl.mindspring.net...
>
>>I have the MFJ-971 portable tuner that I use with a random wire when all
>
> of
>
>>the sudden I could not load on any bands and the "forward" power reads
>
> very
>
>>low. At first I thought I blew the rig (TS-430) but then when I tried a
>>couple of different rigs ,the same thing happens... high SWR readings and
>>low power, also tried different antennas with the MFJ-971 and got the same
>>results.
>>Any suggestions before going out and purchasing another tuner? And is it
>>possible to "blow" a tuner, I dont use anything over 50 watts on CW.
>>Thanks.....gil
>>
>>
>
>
>

2592. Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 00:59:29 UTC
From: kiddi@marel.is
Message-ID: <b7cca008.0308051659.20aa99f7@posting.google.com>
Source record: 111236

I just finished putting up a 6m long aluminum tube for a vertical for 10/15/20m. Its length is just over 1/4 wavelength on 20m and just under 5/8 wavelengths on 10m. The vertical is located at the apex (8m above ground) of a sheet metal roof top, that slopes approx. 30 degrees down to all sides from the vertical. I use use the roof metal as a counterpoise and feed the vertical with an autotuner at the base. A coax runs 6m (18ft) from the autotuner, down through an attic window and to my TX.

Now, simulations (EZNEC 3.0) and common wisdom predict a fairly good performance for this antenna. Not so. When the tuner is set for 1:1 VSWR the RX signals from the vertical on 15m are consistently 4 S-units below a 20m (60ft) long sloper at the corner of the house. I use this sloper for 160m and 80m. When going to the 20m band the vertical is about 8 S-units below the sloper. Even more irritating, the vertical is constantly outperformed by a leftover horizontal wire, approx. 6m long, lifted only 1m (3ft) above the roof.

Switching to the vertical from either wire antenna the background noise and signals drop noticably. This led me to check out the tuner, the feedline, connections, but all seems to be fine. The bottom line appears to be that the vertical is simply a much poorer antenna than either of the wires I have up already - contrary to the theory and conventional wisdom.

Any comments, anyone, before I remove the vertical and turn to another design?

73 de TF3KX, Kristinn

2593. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:11:38 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vj0lgk7b6hbe07@corp.supernews.com>
Source record: 111237

"Kristinn Andersen" <kiddi@marel.is> wrote in message
news:b7cca008.0308051659.20aa99f7@posting.google.com...
> I just finished putting up a 6m long aluminum tube for a vertical for
> 10/15/20m. Its length is just over 1/4 wavelength on 20m and just
> under 5/8 wavelengths on 10m. The vertical is located at the apex (8m
> above ground) of a sheet metal roof top, that slopes approx. 30
> degrees down to all sides from the vertical. I use use the roof metal
> as a counterpoise and feed the vertical with an autotuner at the base.
> A coax runs 6m (18ft) from the autotuner, down through an attic
> window and to my TX.
>
> Now, simulations (EZNEC 3.0) and common wisdom predict a fairly good
> performance for this antenna. Not so. When the tuner is set for 1:1
> VSWR the RX signals from the vertical on 15m are consistently 4
> S-units below a 20m (60ft) long sloper at the corner of the house. I
> use this sloper for 160m and 80m. When going to the 20m band the
> vertical is about 8 S-units below the sloper. Even more irritating,
> the vertical is constantly outperformed by a leftover horizontal wire,
> approx. 6m long, lifted only 1m (3ft) above the roof.
>
> Switching to the vertical from either wire antenna the background
> noise and signals drop noticably. This led me to check out the tuner,
> the feedline, connections, but all seems to be fine. The bottom line
> appears to be that the vertical is simply a much poorer antenna than
> either of the wires I have up already - contrary to the theory and
> conventional wisdom.
>
> Any comments, anyone, before I remove the vertical and turn to another
> design?
>
> 73 de TF3KX, Kristinn

Kristinn
Can you get on the roof with an antenna analyzer and see what the vertical
looks like to the tuner?
Are you certain the roof is electrically continuous?
H.
NQ5H

2594. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:16:07 UTC
From: k9sqg@aol.com
Message-ID: <20030805211607.04851.00000933@mb-m26.aol.com>
Source record: 111238

Kristinn,

I'd try measuring SWR and impedance at the base of the antenna and also ensure that connections to the roof, particularly between the various sections, all have good cotinuity. There is a chance that there is rust and corrosion between overlapping sections.

73s,

Evan

2595. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:21:58 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj0m1ostrt754f@corp.supernews.com>
Source record: 111239

There's nothing wrong with the theory -- but conventional wisdom often leaves a lot to be desired.

What was the gain difference between the vertical and sloper that EZNEC predicts at the elevation angles you're using for communication?

Have you ever connected a dummy load and wattmeter to the output of the autotuner and measured its loss? Of course, its loss can vary a great deal depending on the load impedance, but the vertical's impedance shouldn't be too wild on 20 meters, so the 50 ohm loss figure is probably in the ballpark.

Is your roof a single piece of metal, or is it made of several sheets connected by rusty joints and gaps? If the latter, did you attempt to include this in your model?

Again, there's nothing wrong with the theory. Most models are capable of giving very accurate results -- but the results refelect the performance of the model. If the model doesn't accurately represent the real antenna, then the modeling results won't either.

Roy Lewallen, W7EL

Kristinn Andersen wrote:
> I just finished putting up a 6m long aluminum tube for a vertical for
> 10/15/20m. Its length is just over 1/4 wavelength on 20m and just
> under 5/8 wavelengths on 10m. The vertical is located at the apex (8m
> above ground) of a sheet metal roof top, that slopes approx. 30
> degrees down to all sides from the vertical. I use use the roof metal
> as a counterpoise and feed the vertical with an autotuner at the base.
> A coax runs 6m (18ft) from the autotuner, down through an attic
> window and to my TX.
>
> Now, simulations (EZNEC 3.0) and common wisdom predict a fairly good
> performance for this antenna. Not so. When the tuner is set for 1:1
> VSWR the RX signals from the vertical on 15m are consistently 4
> S-units below a 20m (60ft) long sloper at the corner of the house. I
> use this sloper for 160m and 80m. When going to the 20m band the
> vertical is about 8 S-units below the sloper. Even more irritating,
> the vertical is constantly outperformed by a leftover horizontal wire,
> approx. 6m long, lifted only 1m (3ft) above the roof.
>
> Switching to the vertical from either wire antenna the background
> noise and signals drop noticably. This led me to check out the tuner,
> the feedline, connections, but all seems to be fine. The bottom line
> appears to be that the vertical is simply a much poorer antenna than

> either of the wires I have up already - contrary to the theory and
> conventional wisdom.
>
> Any comments, anyone, before I remove the vertical and turn to another
> design?
>
> 73 de TF3KX, Kristinn

2596. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:30:37 UTC
From: richardharrison@webtv.net
Message-ID: <1174-3F305A3D-142@storefull-2318.public.lawson.webtv.net>
Source record: 111244

F5LCI wrote:
"The window size is abt 0.90 x 1.60 metres---."

The wavelength is near 3 metres at 100 MHz. So, the long dimension of the window is slightly more than 1/2-WL. It can be considered (2) short-circuited stubs back-to-back. At the low frequency end of the band, the stubs may be near 1/4-wave and the antenna will be resonant.

Feed the window frame across its narrow (0.90 metres) dimension in the centre of its 1.60m length.

The frame may be shorted acress its top and bottom to resonate the loop (2 stubs) at higher frequencies for more response.

Kraus advises not to expect an efficient antenna made this way because it has too little conducting materiel unless the frame is substantially fattened. Plenty of folded dipoles and unipoles do very well without a lot of conducting material. The difference must be in the feed arrangement.

But, the application is for receiving, and you don`t usually need efficiency, just good signal-to-noise ratio for success.

The window frame is there for a trial. With clips and feedline it can be tried.

F5LCI can crank or swing his "loop" away from its closed position to see if there`s any directional advantage. It is surrounded by conducting materials which often cause directionality, intended or not.

Best regards, Richard Harrison, KB5WZI

2597. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:37:39 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <DZYXa.74365$o%2.35596@sccrnsc02>
Source record: 111240
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

There are numerous sources of noise at the input to a receiver:

1) Background HF noise that exhibits a 1/f rolloff characteristic. This has seasonal and diurnal variations.

2) Atmospheric noise caused by local or near local weather. Remember there are 10,000 thunderstorms in the world at any time.

3) Solar flare noise. During an solar X-ray event the HF noise, #1, can increase by over 60 dB for short periods of time.

4) Local line interference noise.

5) In the future, BPL noise.

6) I'm sure there are other noise sources such as defective insulators on power lines. ;-)

The ANC-4 and MFJ 1025/1026 ONLY operate on #4.

So, your first task is to become familiar with the spectral characteristics of each so you can design a basic filtering circuit for the undesired noise source. My ANC-4 does not respond to the 1/f HF solar noise sources, atmospheric induced noise or solar flare noise.

Weather induced noise contains frequency components that are in the audio passband, you can hear lightning induced static crashes in your SSB/AM radio. How will you discriminate between desired audio and static audio?

Solar flare noise sounds like a slowly rising rushing hiss in the receiver. It has a slow rise time generally in the range of tens of seconds to minutes. It is broadbanded and will easily over ride any low level desired signal. The noise to signal, NOT signal to noise, ratio can easily exceed 40 dB making detection almost impossible. These characteristics are proportional to the intensity of the solar flux and also the wavelength of the solar flux. Detecting desired signals in this environment is extraordinarily difficult.

Manmade noise, these are processed by the ANC-4 and MFJ units, contains basically repetitive waveforms from TVs, VCRs, Remotes, Routers, Computers, etc.

A design approach would be to use digital filtering and a series of Kalman filters [digital filter algorithms], assuming they are available to the general public. The Kalman filters would be tailored to the spectral content of the noise source you are attempting to cancel. A

second design approach would be a fast Fourier transform that discriminates N/S from S/N. You want to keep the noise OUT of the FIRST RF STAGE to avoid pumping the AGC and getting false signals. For HF digital filtering this will require a very fast processor [possibly GHz range]

How to measure the AF noise from a receiver? I'd start by looking into a Bolometer circuit with AC coupling. This would give a pseudo RMS reading that could be used as a reference for a series of servo based op-amps to control your gain and phase circuits.

Depending on how far you want to pursue the science it could be a very interesting project.

With a statement of principles it is YOUR Project, NOT the project for the members of this list. So, go and have fun!

Deacon Dave, W1MCE

Among the many components of my background was 7 years as Project Engineer designing special test equipment on contract for the USAF.

2598. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:39:16 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f305d26_2@news1.prserv.net>
Source record: 111241
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Jason:

Very similar to what you are describing is popularly known as a "Noise Blanker" Motorola introduced their design for mobile radios in 1959 as an "Extender" In the same time frame, Collins offered a model for the S-Line and KWM-2. I designed a tube model for GE's Progress Line radios, and I forget who designed the solid state version. The concept has been described in numerous places, so do a bibliographic search of Engineering Index, or Scientific Abstracts, or whatever that school has access to. You also need to familiarize yourself with the concepts involved in noise balanced squelch, which was patented by Motorola back in the late 30s or early 40s. It will tell you how to do the audio noise level measurement meaningfully and apply it usefully.

--
Crazy George
Remove NO and SPAM from return address
"Jason Hsu" <jason_hsu@my-deja.com> wrote in message
news:f7d9a152.0308051412.54d4c913@posting.google.com...
> THE BIG QUESTION: How do you measure the audio noise level in a
> receiver? Does anyone here know of any circuits that show the overall
> audio noise level?
>
> Let me tell you what this is all about.
>
> SIDE NOTE: Thanks again to those of you who helped me with the
> SWR/wattmeter project I worked on last semester. This project taught
> me more about ferrite cores, op amps, and diodes than ANY class
> possibly could. I learned about stray capacitance and what rails
> mean. I also learned that not all 1N34A diodes are alike.
>
> In this coming semester, I will be working on an even more ambitious
> project - an automatic noise canceller for 160m to 10m. It will
> definitely be a control system, and it may even use DSP. The device
> will also require a motor for automatically adjusting the controls.
> The idea is to design and build an automatic version of the Timewave
> ANC-4 or the MFJ-1025/1026 RF noise cancellers.
>
> The ANC-4 and MFJ-1025/1026 are manual devices. There are automatic
> noise cancellation devices, but their adjustments are at the audio
> level rather than the RF level.
>
> The back panel of my device will contain:
> 1. Connector for the signal antenna

> 2. Connector for the transceiver
> 3. Connector for the noise antenna
> 4. DC power connector
>
> The front panel of my device will contain:
> 1. Power switch and the obligatory idiot light to show that the power
> is on
> 2. 2 audio connectors: one connects to the transceiver, and the other
> connects to an external speaker
> 3. Frequency range control for choosing the inductance values, as the
> proper inductance values in the RF noise cancelling circuit varies
> with frequency
> 4. Phase range knob so that the phase shifter can cover all 360
> degrees
> 5. Manual noise phase knob
> 6. Manual noise gain knob
> 7. LED display to show the noise level
> 8. Noise phase adjustment push-button: Pressing this button activates
> the control system to adjust the phase shift of the noise.
> 9. Noise gain adjustment button: Pressing this button activates the
> control system to adjust the gain of the noise.
>
> Other features:
> 1. I need to design my automatic noise canceller so that parts won't
> blow up if I transmit 100W through it. This probably requires some
> type of automatic bypass circuitry.
> 2. Transmitted power must not reach the noise antenna (at least not
> without a great deal of attenuation)
> 3. It also needs a low insertion loss.
> 4. A preamplifier would be desirable.
>
> How it would work:
> 1. You manually turn the phase and gain controls to the minimum
> settings. (Or I could put in a reset button to do that. No, that
> would add too much complexity to the circuit.)
> 2. You select the band using the band inductance switch.
> 3. You move the phase polarity switch to the negative setting. If
> the noise cancellation procedure does not work, it probably means the
> opposite setting is required.
> 4. Press the noise gain adjustment button. The device adjusts the
> noise gain until a change in the signal level (or the S meter) is just
> noted. (Some type of derivative function would come into play.)
> 5. Press the noise phase adjustment button. The device adjusts the
> noise phase shift so as to produce a null in the signal level (or the
> S meter).
> 6. Steps 4 and 5 could be repeated to make further adjustments.
> There might be away to activate the control system with just one
> button.
>
> Does anyone know of circuits that measure audio noise? Making the RF

> noise canceller automatic requires an audio circuit to monitor the
> noise level. This noise level needs to be converted into a large DC
> voltage, which feeds the motors that turn the variable capacitor and
> potentiometer.
>
> Jason Hsu, AG4DG
> usenet@@@@jasonhsu.com

2599. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:42:06 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <O1ZXa.73780$Ho3.10567@sccrnsc03>
Source record: 111242
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

Whit all that said, I can design a Mouse that looks like an Elephant <grin>

Deacon Dave, W1MCE

Dave Shrader wrote:

> There are numerous sources of noise at the input to a receiver:
>
> 1) Background HF noise that exhibits a 1/f rolloff characteristic. This
> has seasonal and diurnal variations.
>
> 2) Atmospheric noise caused by local or near local weather. Remember
> there are 10,000 thunderstorms in the world at any time.
>
> 3) Solar flare noise. During an solar X-ray event the HF noise, #1, can
> increase by over 60 dB for short periods of time.
>
> 4) Local line interference noise.
>
> 5) In the future, BPL noise.
>
> 6) I'm sure there are other noise sources such as defective insulators
> on power lines. ;-)
>
> The ANC-4 and MFJ 1025/1026 ONLY operate on #4.
>
> So, your first task is to become familiar with the spectral
> characteristics of each so you can design a basic filtering circuit for
> the undesired noise source. My ANC-4 does not respond to the 1/f HF
> solar noise sources, atmospheric induced noise or solar flare noise.
>
> Weather induced noise contains frequency components that are in the
> audio passband, you can hear lightning induced static crashes in your
> SSB/AM radio. How will you discriminate between desired audio and static
> audio?
>
> Solar flare noise sounds like a slowly rising rushing hiss in the
> receiver. It has a slow rise time generally in the range of tens of
> seconds to minutes. It is broadbanded and will easily over ride any low
> level desired signal. The noise to signal, NOT signal to noise, ratio
> can easily exceed 40 dB making detection almost impossible. These
> characteristics are proportional to the intensity of the solar flux and
> also the wavelength of the solar flux. Detecting desired signals in this
> environment is extraordinarily difficult.

>
> Manmade noise, these are processed by the ANC-4 and MFJ units, contains
> basically repetitive waveforms from TVs, VCRs, Remotes, Routers,
> Computers, etc.
>
> A design approach would be to use digital filtering and a series of
> Kalman filters [digital filter algorithms], assuming they are available
> to the general public. The Kalman filters would be tailored to the
> spectral content of the noise source you are attempting to cancel. A
> second design approach would be a fast Fourier transform that
> discriminates N/S from S/N. You want to keep the noise OUT of the FIRST
> RF STAGE to avoid pumping the AGC and getting false signals. For HF
> digital filtering this will require a very fast processor [possibly GHz
> range]
>
> How to measure the AF noise from a receiver? I'd start by looking into a
> Bolometer circuit with AC coupling. This would give a pseudo RMS reading
> that could be used as a reference for a series of servo based op-amps to
> control your gain and phase circuits.
>
> Depending on how far you want to pursue the science it could be a very
> interesting project.
>
> With a statement of principles it is YOUR Project, NOT the project for
> the members of this list. So, go and have fun!
>
> Deacon Dave, W1MCE
>
> Among the many components of my background was 7 years as Project
> Engineer designing special test equipment on contract for the USAF.
>

2600. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:44:52 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030805214452.06382.00000063@mb-m02.aol.com>
Source record: 111243

>
>Any comments, anyone, before I remove the vertical and turn to another
>design?
>
>73 de TF3KX, Kristinn
>
>

First I would check the coax and tuner performance, make sure you have no bad connections.
When comparing signals against other antennas, keep in mind that vertical is better performer at low angles - DX. Try the comparison on DX signals rather than Eu and high angle propagation. You could esay see 20 dB differences, but check at the beginning of openings to DX areas and see how they compare.

GL Yuri, K3BU

2601. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:53:35 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F305F9F.CD006227@cwis.net>
Source record: 111245

Dan,
And compared to a 20 meter dipole, the 80 meter
dipole will stump it's toe on 20 meters.
'Doc

2602. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:54:05 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <JdicnaP2PcbU_a2iU-KYvw@ctc.net>
Source record: 111246

> I was actually waiting for someone to catch it but you were too busy
> thinking troll or flame.
>
> TV Coax is 75ohm.
>
>

TV coax has the shield made of aluminum or other nonsolderable material. 75 ohm coax can be soldered :-)

2603. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 01:59:24 UTC
From: Tom Brown <tab@signalgrp.com>
Message-ID: <bgpnhg$d6i$1@slb2.atl.mindspring.net>
Source record: 111247

Crazy George wrote:
> Jason:
>
> Very similar to what you are describing is popularly known as a "Noise
> Blanker" Motorola introduced their design for mobile radios in 1959 as an
> "Extender" In the same time frame, Collins offered a model for the S-Line
> and KWM-2. I designed a tube model for GE's Progress Line radios, and I
> forget who designed the solid state version. The concept has been described
> in numerous places, so do a bibliographic search of Engineering Index, or
> Scientific Abstracts, or whatever that school has access to. You also need
> to familiarize yourself with the concepts involved in noise balanced
> squelch, which was patented by Motorola back in the late 30s or early 40s.
> It will tell you how to do the audio noise level measurement meaningfully
> and apply it usefully.
>
> --
> Crazy George
> Remove NO and SPAM from return address
> "Jason Hsu" <jason_hsu@my-deja.com> wrote in message
> news:f7d9a152.0308051412.54d4c913@posting.google.com...
>
>>>

.....snip.....

The Motorola "Extender" and subsequent NB developments are based on the
"Lamb Noise Silencer", patented (AFAIK) in 1937 and, ...with the
intervening war years, the patent expired shortly before the Motorola
product was introduced.

73,

Tom N4TAB

2604. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 02:17:18 UTC
From: richardharrison@webtv.net
Message-ID: <21112-3F30652E-185@storefull-2314.public.lawson.webtv.net>
Source record: 111248

Kristinn Andersen wrote:
"I use the roof metal as a counterpoise and feed the vertical with an autotuner at the base."

Power fed to an antenna divides between two resistances, effectively in series, radiation resistance and loss resistance. Totals of both resistances are affected by both the vertical radiator and the counterpoise.

First, good conductive connections are a universal requirement which is most severe the closer a connection is to the feedpoint as the current density is highest there. Recall that current flows mostly on the surface.

If the counterpoise is lossy, it would be better to hide it from displacement current with the vertical radiator by using elevated radials. Many radials are required to hide the surface below if the spacibg between the radials and the surface below is small. If the distance is large, only a few radials are required. The radials capture the antenna current and keep it away from lossy surfaces.

Best regards, Richard Harrison, KB5WZI

2605. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 03:06:08 UTC
From: richardharrison@webtv.net
Message-ID: <19098-3F3070A0-50@storefull-2312.public.lawson.webtv.net>
Source record: 111249

Crazy George wrote:
"---do a bibliographic search of Engineering Index, or Scientific Abstracts, or whatever that school has access to."

Excellent advice from George. Motorola`s Extender usually included a switch on the radio control head to enable or defeat Extender operation. The only reason I can think of to defeat Extender operation is to demonstrate its effectiveness, which can be compelling.

The Extender works early and often to put a hole in the radio`s response before adverse effects are generated within. The holes rarely detract significantly from the signal.

Also look for Motorola TEK 21 Pulse Generator instructions. It is a hand-held, battery-operated, zener diode noise maker used to optimize Extender performance in the radio. The TEK 21 saves overheating a car engine just to make ignition noise pulses to obliterate while tweaking the Extender circuit and the the radio`s response.

Best regards, Richard Harrison, KB5WZI

2606. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 03:27:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3076d0_3@corp.newsgroups.com>
Source record: 111250

Kristinn Andersen wrote:
> Any comments, anyone, before I remove the vertical and turn to another
> design?

I spent considerable time and effort erecting a 33ft vertical 40m
antenna with 8 elevated radials at 20ft. Average signal strengths were
about 2 S-units below a dipole and the noise level was about 2 S-units
higher than the dipole. At my QTH, it was a dog.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2607. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 03:35:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3078ba_3@corp.newsgroups.com>
Source record: 111251

'Doc wrote:
> And compared to a 20 meter dipole, the 80 meter
> dipole will stump it's toe on 20 meters.

As a matter of interest, I just did an A/B comparison between
my 80m dipole and my 20m rotatable dipole. The guy in CA
couldn't tell any difference in transmitted signal levels
and I couldn't tell any difference in received signal levels.
In other words, in four directions, my 130ft dipole works
just as well on 20m as my resonant 20m rotatable dipole.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2608. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 03:35:38 UTC
From: richardharrison@webtv.net
Message-ID: <19098-3F30778A-54@storefull-2312.public.lawson.webtv.net>
Source record: 111252

Jim, NN7K wrote:
"also wonder where all those bazillions of these disappeared to!"

I think all the offshore counterfeiters of ARC-5 and 274-N equipment switched to modern equipment production when demand dwindled for surplus radios. Too bad!

Best regards, Richard Harrison, KB5WZI

2609. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 04:13:10 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <ASydnchv5L3CHa2iXTWJkA@comcast.com>
Source record: 111253

Kristinn,

Before you decide to remove it, I would see if it can be made to resonate on 20 meters by itself. Ditch the tuner, and see how it performs. As somebody suggested, see what it does with a ZL or VK, or even W6. I never had any luck with 20m verticals myself, but talked to an G station on 20 SSB a few days ago who was using one; sounded fine.

BTW, here is an odd one. I once had a 40 meter vertical with the feedpoint at about 30 feet and 4 radials, sloping down at about 45 deg. At the same time I had a 40m dipole at about 50 feet. I made tests with two groups of hams. The one group was about 400 miles away, the other group about 1100 miles. Without exception, in each group people with verticals preferred my vertical, and people with horizontal antennas preferred my dipole. Yes, I know all about polarization not being important for a skywave signal.

Tam/WB2TT
"Kristinn Andersen" <kiddi@marel.is> wrote in message
news:b7cca008.0308051659.20aa99f7@posting.google.com...
> I just finished putting up a 6m long aluminum tube for a vertical for
> 10/15/20m. Its length is just over 1/4 wavelength on 20m and

2610. Re: Super Broomstick....Any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 05:11:48 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F308DDD.21EEDB6A@shaw.ca>
Source record: 111254

NN7K@reno.rmci.net wrote:
>
> Not necessarily!, there are also "Broomstick " antennas (VHF- UHF type) that
> are STACKED sections of coax (Co-linears), where the sheath of a 1/2 wave
> length piece is soldered to the center conductor of the next 1/2 wave piece
> of coax (and also vice versa), with several of these sections, done, the
> last section, if memory serves me right, is a 1/4 wave piece of wire, and it
> is attached to the last 1/2 wave section, shield, and center conductor
> shorted together!
> similar to DB PRODUCTS- Green Hornet, and has a 1/4 wavelength radial for
> counterpoise.
> as info, Jim NN7K
>
The one on e-bay, which he referred to, was for HF
and I replied in a simplified manner so as
not to lead to any esoteric or off-topic confusion.
His question led to a lot of stuff on the thread which
was of no value to him whatsoever!

> > --

--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2611. Re: Vee Beam info needed -diff NEC and NEC-4 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 06:39:09 UTC
From: NN7K@reno.rmci.net
Message-ID: <ye1Ya.2763$jq.2465@fe01.atl2.webusenet.com>
Source record: 111255

Thanks, kept seeing posts about NEC-4, but no explanation. At least answers my question! --Jim NN7K

"Roy sent:
> There are two major differences between EZNEC and EZNEC/4. The first is
> that EZNEC/4 is one of the two EZNEC pro programs, the other being
> EZNEC-M. These programs are intended for professional use (although some
> amateurs have bought them) and cost several times as much as the
> standard version of EZNEC. The added features of the pro versions are
> 10,000 segment capability, the ability to read and write description
> files in NEC format, ground wave analysis, automated rectangular wire
> grid creation, and a way to do advanced replication, rotation, and
> translation of groups of wires. EZNEC-M is identical to EZNEC/4 except
> that EZNEC-M only has an NEC-2 calculating engine,

2612. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 06:52:44 UTC
From: Brooke Clarke <brooke@pacific.net>
Message-ID: <3F30A5BC.6050205@pacific.net>
Source record: 111257
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

Hi Jason:

I think the "signal antenna" and "noise antenna" are both just antennas. I can't see how you can make an antenna that only hears noise and another that hears the same noise and signal. If that's the case then by adjusting the relative phase and amplitude of the two "antennas" what you are doing is changing the antenna pattern. This will improve the overall s/n if there is a source of noise that's coming form some direction more than from everywhere.

In "Beam and null switch step steerable antenna system" U.S. patent <http://www.delphion.com/> 4,063,250 <http://www.delphion.com/details?&pn=US04063250__> Fenwick has an antenna system where the main lobe is steered using time delay beam steering (this is a frequency independent version of a phased array) and in addition can steer a null independent of the main lobe. He used mechanical relays and coax line, but a more modern version could use PIN diodes and a computer to try all the possible main and null lobe possibilities and use the best ones.

To measure the sensivity of an AM receiver you measure the RMS audio output voltage with a signal present and without a signal present. For a more detailed look at the noise you need a spectrum analyzer, like the HP-Agilent 4395A that can make true RMS noise measurements, see: http://www.pacificsites.com/~brooke/4395A.shtml

Have Fun,

Brooke Clarke, N6GCE
http://www.pacificsites.com/~brooke/electron.shtml#Antenna
Jason Hsu wrote:

>THE BIG QUESTION: How do you measure the audio noise level in a
>receiver? Does anyone here know of any circuits that show the overall
>audio noise level?
>
>Let me tell you what this is all about.
>
>SIDE NOTE: Thanks again to those of you who helped me with the
>SWR/wattmeter project I worked on last semester. This project taught
>me more about ferrite cores, op amps, and diodes than ANY class
>possibly could. I learned about stray capacitance and what rails
>mean. I also learned that not all 1N34A diodes are alike.
>
>In this coming semester, I will be working on an even more ambitious

>project - an automatic noise canceller for 160m to 10m. It will
>definitely be a control system, and it may even use DSP. The device
>will also require a motor for automatically adjusting the controls.
>The idea is to design and build an automatic version of the Timewave
>ANC-4 or the MFJ-1025/1026 RF noise cancellers.
>
>The ANC-4 and MFJ-1025/1026 are manual devices. There are automatic
>noise cancellation devices, but their adjustments are at the audio
>level rather than the RF level.
>
>The back panel of my device will contain:
>1. Connector for the signal antenna
>2. Connector for the transceiver
>3. Connector for the noise antenna
>4. DC power connector
>
>The front panel of my device will contain:
>1. Power switch and the obligatory idiot light to show that the power
>is on
>2. 2 audio connectors: one connects to the transceiver, and the other
>connects to an external speaker
>3. Frequency range control for choosing the inductance values, as the
>proper inductance values in the RF noise cancelling circuit varies
>with frequency
>4. Phase range knob so that the phase shifter can cover all 360
>degrees
>5. Manual noise phase knob
>6. Manual noise gain knob
>7. LED display to show the noise level
>8. Noise phase adjustment push-button: Pressing this button activates
>the control system to adjust the phase shift of the noise.
>9. Noise gain adjustment button: Pressing this button activates the
>control system to adjust the gain of the noise.
>
>Other features:
>1. I need to design my automatic noise canceller so that parts won't
>blow up if I transmit 100W through it. This probably requires some
>type of automatic bypass circuitry.
>2. Transmitted power must not reach the noise antenna (at least not
>without a great deal of attenuation)
>3. It also needs a low insertion loss.
>4. A preamplifier would be desirable.
>
>How it would work:
>1. You manually turn the phase and gain controls to the minimum
>settings. (Or I could put in a reset button to do that. No, that
>would add too much complexity to the circuit.)
>2. You select the band using the band inductance switch.
>3. You move the phase polarity switch to the negative setting. If
>the noise cancellation procedure does not work, it probably means the

>opposite setting is required.
>4. Press the noise gain adjustment button. The device adjusts the
>noise gain until a change in the signal level (or the S meter) is just
>noted. (Some type of derivative function would come into play.)
>5. Press the noise phase adjustment button. The device adjusts the
>noise phase shift so as to produce a null in the signal level (or the
>S meter).
>6. Steps 4 and 5 could be repeated to make further adjustments.
>There might be away to activate the control system with just one
>button.
>
>Does anyone know of circuits that measure audio noise? Making the RF
>noise canceller automatic requires an audio circuit to monitor the
>noise level. This noise level needs to be converted into a large DC
>voltage, which feeds the motors that turn the variable capacitor and
>potentiometer.
>
>Jason Hsu, AG4DG
>usenet@@@@jasonhsu.com
>
>

2613. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 06:53:36 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0308052253.7165c072@posting.google.com>
Source record: 111256

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bgol4leb1@hercules.btinternet.com>...
> ... There is NO antenna which will allow high radiating efficiency on all
> bands without a tuner. ...

Hi Reg,
the antenna at http://www.qsl.net/w5dxp/notuner.htm should cover all
bands except the topband without a device called "a tuner". Of course
it has a tuner of its sort - a set of switchable pieces of twinlead.

73 de Ivan OK1SIP

2614. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 07:09:25 UTC
From: NN7K@reno.rmci.net
Message-ID: <0H1Ya.2776$jq.980@fe01.atl2.webusenet.com>
Source record: 111258

Also, be aware that the "Extender" is somewhat different from the typical noise blanker (at least in RCA units), in that these actually have a SEPERATE reciever, that can be tuned to a nearby (but not necessarly the same frequency) that you are trying to eliminate noise on. The output of this is used to control a preamp on the frequency that you are operateing on. This has a major advantage over the typical noise blanker, in that , a strong nearby signal won't overload the extender , if it is aligned 2, or 3 megs away from the frequency range you want to operate (unlike in a transciever, which operats at the IF frequency). As a side note, these make great noise blankers for 6 meters, and are virtually overload proof. Been there, done that! Jim NN7K

Richard wrote:...
> Crazy George wrote:
> "---do a bibliographic search of Engineering Index, or Scientific
> Abstracts, or whatever that school has access to."
>
> Excellent advice from George. Motorola`s Extender usually included a
> switch on the radio control head to enable or defeat Extender operation.
> The only reason I can think of to defeat Extender operation is to
> demonstrate its effectiveness, which can be compelling.
>
> The Extender works early and often to put a hole in the radio`s response
> before adverse effects are generated within. The holes rarely detract
> significantly from the signal.
>
> Also look for Motorola TEK 21 Pulse Generator instructions. It is a
> hand-held, battery-operated, zener diode noise maker used to optimize
> Extender performance in the radio. The TEK 21 saves overheating a car
> engine just to make ignition noise pulses to obliterate while tweaking
> the Extender circuit and the the radio`s response.
>
> Best regards, Richard Harrison, KB5WZI
>

2615. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 07:41:01 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F30B10D.20301EB1@cwis.net>
Source record: 111259

Cecil,
Now all you have to do is get everyone to move so
that they are in one of those four directions from you.
'Doc

2616. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 07:53:29 UTC
From: ketalar <ketalarnospam@xanadu.fr>
Message-ID: <oprtg37fn6b8v01a@news.wanadoo.fr>
Source record: 111260

- Tnx fer the answer.
As I said earlier I'm in a concrete building facing very close other ones : It is as if I am down a well...
Another problem is the hash generated by the nearby computer/screen : The s-meter does not tell all the truth. That's why I attached an external whip to the window : less noise, and why I want to use the window frame...
The xmitter, powerfull, is only two miles away but hidden by two hills : really, I am in a well !
More complicated, and hard to understand : I get a far better signal when rain is falling.

So far, I have never bought any antenna, only wire. (In another location, I had previously a nice setup on top-band as reported in RadCom abt 10 yrs ago).
I agree with you about amplified antennas.
Best regards,

Le Tue, 5 Aug 2003 17:23:31 -0400, WB3FUP (Mike Hall) <wb3fup@msn.com> a ï¿œcrit:

> And you put it up as an inverted v? Concrete walls does not absorb nearly
> as much RF as one might think. If you are between concrete walls what do
> you look at through your window. In more than 20 years I have found more
> people that are convinced that they need to spend more money for an
> antenna. I calculated the length necessary, and cut one myself to be used
> in my cellar. I was amazed to see that what I had invested an hour in
> constructing was identical to what I could have purchased for $4.00. (At
> the time I had people lined up to pay me $50. to $100 an hour for my tax
> preparation and planning expertise.) Building the antenna was not the
> smartest use of my resources at the time. In fact my home rolled one did
> not even look as good.
>
> How far away are the stations you want to receive? If they are anything
> like local, within 50 miles the antenna should work fine. Not the "T's"
> you receive when you buy a receiver. The folded dipole the SKU of which is
> below. I assumed you knew what I meant by Inverted V. The center of the
> antenna is higher, or lower, than the ends. The ends include an angle of
> between 90 and 150 degrees. (45 to 75 degrees off of the transmission line)
> This makes the antenna omni-directional and it will work great.
>
> But don't believe me. Continue to fight with the window frame, or go and
> spend $40 to $60 on the amplified antennas that are sold, and that DO NOT
> WORK.
>

--
<< A personne, sauf ï¿œ ceux qui y prendront plaisir >> (Franz Schubert, 1797-1828)

2617. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 08:10:19 UTC
From: ketalar <ketalarnospam@xanadu.fr>
Message-ID: <oprtg4zhveb8v01a@news.wanadoo.fr>
Source record: 111261

Richard,
Thanks a lot for your answer.
I'll continue to walk my clips the way you say. However the computer screen is just under the window and generates a lot of hash : some feedpoints I tried were very poor on that point of view ! Maybe the feedline needs ferrite sleeves ?
Due to the concrete/iron environment, I wonder if my window frame could not be better considered as a slot antenna.
Best regards,

Le Tue, 5 Aug 2003 20:30:37 -0500 (CDT), Richard Harrison <richardharrison@webtv.net> a ï¿œcrit:

> F5LCI wrote:
> "The window size is abt 0.90 x 1.60 metres---."
>
> The wavelength is near 3 metres at 100 MHz. So, the long dimension of
> the window is slightly more than 1/2-WL. It can be considered (2)
> short-circuited stubs back-to-back. At the low frequency end of the
> band, the stubs may be near 1/4-wave and the antenna will be resonant.
>
> Feed the window frame across its narrow (0.90 metres) dimension in the
> centre of its 1.60m length.
>
> The frame may be shorted acress its top and bottom to resonate the loop
> (2 stubs) at higher frequencies for more response.
>
> Kraus advises not to expect an efficient antenna made this way because
> it has too little conducting materiel unless the frame is substantially
> fattened. Plenty of folded dipoles and unipoles do very well without a
> lot of conducting material. The difference must be in the feed
> arrangement.
>
> But, the application is for receiving, and you don`t usually need
> efficiency, just good signal-to-noise ratio for success.
>
> The window frame is there for a trial. With clips and feedline it can be
> tried.
>
> F5LCI can crank or swing his "loop" away from its closed position to see
> if there`s any directional advantage. It is surrounded by conducting
> materials which often cause directionality, intended or not.
>
> Best regards, Richard Harrison, KB5WZI
>
>

--
<< A personne, sauf ï¿œ ceux qui y prendront plaisir >> (Franz Schubert, 1797-1828)

2618. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 08:36:23 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308060036.2b8002f7@posting.google.com>
Source record: 111262

richardharrison@webtv.net (Richard Harrison) wrote in message
>
> If the counterpoise is lossy, it would be better to hide it from
> displacement current with the vertical radiator by using elevated
> radials. Many radials are required to hide the surface below if the
> spacibg between the radials and the surface below is small. If the
> distance is large, only a few radials are required. The radials capture
> the antenna current and keep it away from lossy surfaces.

I think this would probably be the best solution. The size of the roof
is not mentioned, and is fairly important to consider. The problem
with using a random size roof as a radial system for a ground plane is
you have no guarantee that the roof will present a low impedance for
any certain band. If the roof is appx a 1/2 wave out from the center,
it's about like using a 20m 1/4 GP, but using radials 1/2 wave long.
Being the radials "or roof" show a high impedance, they are fairly
useless.
Also, I suspect excess loss if the noise and signals drop compared to
any other antenna. If the coax is not bad, old or waterlogged, or thin
stuff like rg-58, then I'd suspect excess loss in the autotuner. I
would also suspect the most loss to be when the antenna is used as an
appx 1/2 wave being the feedpoint will be a fairly high impedance. For
just 20m use, I bet if they added 3 or 4 elevated 1/4 wave radials,
and dropped the autotuner, the antenna would perk up quite a bit.
But this still leaves the problem of reducing loss on the other bands.
The radials/roof need to show a low impedance on any other band used.
1/4 wave and 3/4 wave, etc will work. 1/2 waves won't. IE:, a set of
40m radials could probably be used on 15m ok. They won't be any good
on 20m.
16 ft radials are going to be useless on 10m. I missed if the radiator
is multiband or not...Probably the best 20-10 option would be to
switch to a 1/2 wave antenna like an old R3-R7 etc, and not rely on
radials or a ground plane at all. I haven't even covered the actual
roof connections, as it's already been mentioned. If you add resonant
radials any decent distance from the roof, the roof will become a non
issue. Providing you use enough of them, that is...At that height , 3
or 4 should be good enough if they stay at least 2-3 ft away from
metal. Farther off the roof would be even better better. You might
have to tweak the radial length for coupling effects from the roof,
but once they are tuned, they should work. I consider tin roof
verticals more akin to a ground plane, than I do say to a large mobile
without wheels . :/ MK

2619. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 09:47:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj1jmeihva0m14@corp.supernews.com>
Source record: 111263

Mark Keith wrote:
> . . .
> Also, I suspect excess loss if the noise and signals drop compared to
> any other antenna. If the coax is not bad, old or waterlogged, or thin
> stuff like rg-58, then I'd suspect excess loss in the autotuner. . . .

Out of curiosity, just how much loss do you think "thin stuff like
RG-58", say 50 feet of it, has on 20 meters?

Roy Lewallen, W7EL

2620. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 09:59:23 UTC
From: bigcat@meeow.co.uk
Message-ID: <a7076635.0308060159.d856956@posting.google.com>
Source record: 111264
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

Hi Jason

Theres a whole lot of unworkable ideas on this thread. I shouldnt rush in without reading up well first.

I'll just address a couple of Dave's ideas.

Dave Shrader <david.shrader@comcast.net> wrote

> Weather induced noise contains frequency components that are in the
> audio passband, you can hear lightning induced static crashes in your
> SSB/AM radio. How will you discriminate between desired audio and static
> audio?

Lot of work was done on this in the 30s, the cnoclusion was they couldnt. However you can if you use the standard 405-line TV noise reduction method. Basically detect brief signals that are greater in amplitude than your wanted a.f., and zero or reduce the af output during that time.

> A design approach would be to use digital filtering and a series of
> Kalman filters [digital filter algorithms], assuming they are available
> to the general public. The Kalman filters would be tailored to the
> spectral content of the noise source you are attempting to cancel. A
> second design approach would be a fast Fourier transform that
> discriminates N/S from S/N. You want to keep the noise OUT of the FIRST
> RF STAGE to avoid pumping the AGC and getting false signals.

I dont see how you can manipulate signals that havent even reached the first rf amp. You cant even read them as theyre microvolts. Putting them thru any kind of digital filter - you work it out.

Jason your idea of mixing different noise sources is also a non runner. Sorry, but youve got to consider _exactly_ what is in those noise sources and how they differ. It will soon become apparent that by the time you add them youve got 2 different things. The noise f distribution might be the same, but the noise signal will be quite different.

Regards, NT

2621. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 10:07:12 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgqk0g$nu3$1@hercules.btinternet.com>
Source record: 111265

"OK1SIP" wrote
> "Reg Edwards" wrote
> > There is NO antenna which will allow high radiating efficiency on all
> > bands without a tuner. ...
>
> Hi Reg,
> the antenna at http://www.qsl.net/w5dxp/notuner.htm should cover all
> bands except the topband without a device called "a tuner". Of course
> it has a tuner of its sort - a set of switchable pieces of twinlead.
>

Hello Ivan,

I am familiar with Cecil's binary-switched variable-length feedline. We are friends and I hope to keep things that way. ;o)

In terms of expectations, quite correctly you say "*should* cover all bands" rather than "*will* cover all bands". Actually it doesn't cover (tune) any band.

As a fundamental principle every tuner must have at least two variable components because it has to match Z = R+jX which also contains two variables. In more practical terms a tuner must have at least two knobs, for example, one to vary L and another to vary C.

So it is impossible (or at least extrememly inconvenient) for a transmission line to behave as a tuner because only its length can be changed. Unless, of course, Cecil can invent a way of varying its impedance Zo between, say, 100 and 600 ohms.

But bearing in mind Cecil's primary objective in using a 'tuner' is to provide a load which will keep the transmitter happy, without regard to SWR on the variable-length feedline, his arrangement is successful. It is necessary only for the transmitter to be happy provided its load indicator has a reading which does not exceed much above 1.5 to 1. (SWR).

Whether or not the station operator is happy using a tuner with one of the knobs missing is another matter.

The behaviour/performance of Cecil's 'tuner' can be very accurately modelled using program DIPOLE3. Download in a few seconds from website below. Just vary frequency or line length and watch the line input impedance.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com

==========

2622. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 10:16:59 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgqkir$c8o$1@sparta.btinternet.com>
Source record: 111266

"'Doc" wrote > Cecil,
> Now all you have to do is get everyone to move so
> that they are in one of those four directions from you.

============================

What is the gain in dB of a rotatable dipole relative to one which is fixed
?

Reg, G4FGQ

2623. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 11:45:41 UTC
From: richardharrison@webtv.net
Message-ID: <1882-3F30EA65-12@storefull-2318.public.lawson.webtv.net>
Source record: 111267

N. Thornton wrote:
"There are a whole lot of unworkable ideas on this thread."

The most important reduction in radio "static" was made by Edwin Howard Armstrong in 1933 when he invented the FM broadcasting system. FM detection can be made very non-responsive to most disturbances, including variations in signal strength. FM proved its value in WW-2 communications and in broadcasting after the first receivers became available in 1939.

Best regards, Richard Harrison, KB5WZI

2624. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 12:31:48 UTC
From: richardharrison@webtv.net
Message-ID: <8061-3F30F534-4@storefull-2311.public.lawson.webtv.net>
Source record: 111170

F5LCI wrote:
"Maybe the feedline needs sleeves?"

When the window is closed, its "balance" may be better, or it could be worse.

Coax could be your bon ami in eliminating the computer display noise if used with FM/TV baluns. Ground the shield to the radio. Ferrite sleeves around the coax may reduce transport of the interference on the exterior of the shield to the radio.

Best regards, Richard Harrison, KB5WZI

2625. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 12:43:43 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <3K6Ya.79655$o%2.37013@sccrnsc02>
Source record: 111268

0 dBd !!!!!!!!!!

Deacon Dave, W1MCE

Reg Edwards wrote:

> "'Doc" wrote > Cecil,
>
>> Now all you have to do is get everyone to move so
>>that they are in one of those four directions from you.
>
>
> ============================
>
> What is the gain in dB of a rotatable dipole relative to one which is fixed
> ?
> ---
> Reg, G4FGQ
>
>

2626. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 12:47:12 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <kN6Ya.79675$o%2.36819@sccrnsc02>
Source record: 111169

Richard, are you becoming a 'discriminator' or what?

DD, W1MCE

Richard Harrison wrote:

> N. Thornton wrote:
> "There are a whole lot of unworkable ideas on this thread."
>
> The most important reduction in radio "static" was made by Edwin Howard
> Armstrong in 1933 when he invented the FM broadcasting system. FM
> detection can be made very non-responsive to most disturbances,
> including variations in signal strength. FM proved its value in WW-2
> communications and in broadcasting after the first receivers became
> available in 1939.
>
> Best regards, Richard Harrison, KB5WZI
>

2627. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 12:49:44 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <IP6Ya.79342$uu5.7823@sccrnsc04>
Source record: 111171
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Wasn't this the basis of the TNS?

If so, it worked on impulse noise above the slow AGC level.

The ANC-4 doesn't even let the noise into the first RF stage!!

DD, W1MCE

Crazy George wrote:

> Jason:
>
> Very similar to what you are describing is popularly known as a "Noise
> Blanker" Motorola introduced their design for mobile radios in 1959 as an
> "Extender" In the same time frame, Collins offered a model for the S-Line
> and KWM-2. I designed a tube model for GE's Progress Line radios, and I
> forget who designed the solid state version. The concept has been described
> in numerous places, so do a bibliographic search of Engineering Index, or
> Scientific Abstracts, or whatever that school has access to. You also need
> to familiarize yourself with the concepts involved in noise balanced
> squelch, which was patented by Motorola back in the late 30s or early 40s.
> It will tell you how to do the audio noise level measurement meaningfully
> and apply it usefully.
>
> --
> Crazy George
> Remove NO and SPAM from return address
> "Jason Hsu" <jason_hsu@my-deja.com> wrote in message
> news:f7d9a152.0308051412.54d4c913@posting.google.com...
>
>>THE BIG QUESTION: How do you measure the audio noise level in a
>>receiver? Does anyone here know of any circuits that show the overall
>>audio noise level?
>>
>>Let me tell you what this is all about.
>>
>>SIDE NOTE: Thanks again to those of you who helped me with the
>>SWR/wattmeter project I worked on last semester. This project taught
>>me more about ferrite cores, op amps, and diodes than ANY class
>>possibly could. I learned about stray capacitance and what rails
>>mean. I also learned that not all 1N34A diodes are alike.
>>
>>In this coming semester, I will be working on an even more ambitious
>>project - an automatic noise canceller for 160m to 10m. It will
>>definitely be a control system, and it may even use DSP. The device

>>will also require a motor for automatically adjusting the controls.
>>The idea is to design and build an automatic version of the Timewave
>>ANC-4 or the MFJ-1025/1026 RF noise cancellers.
>>
>>The ANC-4 and MFJ-1025/1026 are manual devices. There are automatic
>>noise cancellation devices, but their adjustments are at the audio
>>level rather than the RF level.
>>
>>The back panel of my device will contain:
>>1. Connector for the signal antenna
>>2. Connector for the transceiver
>>3. Connector for the noise antenna
>>4. DC power connector
>>
>>The front panel of my device will contain:
>>1. Power switch and the obligatory idiot light to show that the power
>>is on
>>2. 2 audio connectors: one connects to the transceiver, and the other
>>connects to an external speaker
>>3. Frequency range control for choosing the inductance values, as the
>>proper inductance values in the RF noise cancelling circuit varies
>>with frequency
>>4. Phase range knob so that the phase shifter can cover all 360
>>degrees
>>5. Manual noise phase knob
>>6. Manual noise gain knob
>>7. LED display to show the noise level
>>8. Noise phase adjustment push-button: Pressing this button activates
>>the control system to adjust the phase shift of the noise.
>>9. Noise gain adjustment button: Pressing this button activates the
>>control system to adjust the gain of the noise.
>>
>>Other features:
>>1. I need to design my automatic noise canceller so that parts won't
>>blow up if I transmit 100W through it. This probably requires some
>>type of automatic bypass circuitry.
>>2. Transmitted power must not reach the noise antenna (at least not
>>without a great deal of attenuation)
>>3. It also needs a low insertion loss.
>>4. A preamplifier would be desirable.
>>
>>How it would work:
>>1. You manually turn the phase and gain controls to the minimum
>>settings. (Or I could put in a reset button to do that. No, that
>>would add too much complexity to the circuit.)
>>2. You select the band using the band inductance switch.
>>3. You move the phase polarity switch to the negative setting. If
>>the noise cancellation procedure does not work, it probably means the
>>opposite setting is required.
>>4. Press the noise gain adjustment button. The device adjusts the

>>noise gain until a change in the signal level (or the S meter) is just
>>noted. (Some type of derivative function would come into play.)
>>5. Press the noise phase adjustment button. The device adjusts the
>>noise phase shift so as to produce a null in the signal level (or the
>>S meter).
>>6. Steps 4 and 5 could be repeated to make further adjustments.
>>There might be away to activate the control system with just one
>>button.
>>
>>Does anyone know of circuits that measure audio noise? Making the RF
>>noise canceller automatic requires an audio circuit to monitor the
>>noise level. This noise level needs to be converted into a large DC
>>voltage, which feeds the motors that turn the variable capacitor and
>>potentiometer.
>>
>>Jason Hsu, AG4DG
>>usenet@@@@jasonhsu.com
>
>
>
>
>

2628. Distance to Link Coupling in a Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 12:59:37 UTC
From: Al <aburzynski@swri.nojunk.edu>
Message-ID: <vj1utq55lqu4b7@corp.supernews.com>
Source record: 111172

I have used Reg's fine loop design program rjeloop3 to help me with building a couple of loops. It was a big help. Thank you Reg.

The shielded three-foot diameter loop I built is for receive only. The primary loop is six turns paralleled by a variable capacitor, and the secondary (link loop) is one turn (same diameter) fed to a preamp or directly to the receiver. The band of operation of the loop is about 200kHz to 500kHz (NDB chaser).

One question that is not answered in rjeloop3 is what should be the distance from the output (link) loop to the main loop? The antenna's I built used flat cable for the wiring and one of the turns was the link so the distance was 0.050 inches. In other articles I have read that the Q, gain, and S/N ratio can be varied by varying the distance between the two loops. Approximately what is the distance? Are we talking a small fraction of an inch or 2, 3, or perhaps six inches apart? I would just like a feeler distance to work with. If the distance is to be over one inch, I'm considering building the primary loop in one hoola-hoop form and the secondary loop in a second hoola-hoop then varying the distance between the hoops. Any thoughts on this or is this a waste of time and effort?

All input will be greatly appreciated. Thank you.

Al
KA5JGV

2629. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 13:14:22 UTC
From: richardharrison@webtv.net
Message-ID: <9956-3F30FF2E-70@storefull-2315.public.lawson.webtv.net>
Source record: 111173

Jim, NN7K wrote:
"---that center conductor of RG-8 was used as Power supply for lots of AMPS! 3 and 4 KV in some of those."

Nothing wrong with that if the right RG-8 is used. RMS Max V varies from 600 V to 3700 V (Belden 9914). Peak a-c or d-c max V should be 5232 V for the Belden cable. This is 1.414 X the rms volts. No need to speculate. Coax tables abound. One is found in the ARRL Antenna Book.

Best regards, Richard Harrison, KB5WZI

2630. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 13:59:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f310ade_3@corp.newsgroups.com>
Source record: 111174

'Doc wrote:
> Now all you have to do is get everyone to move so
> that they are in one of those four directions from you.

With a fixed resonant dipole, you only get two directions. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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2631. WTD: TECH MANUAL WANTED

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 14:07:18 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <gs22jvsephfh8bmfrf5f7ivj0dj2s040a4@4ax.com>
Source record: 111175

WTD: TECH MANUAL WANTED
Need TM-11-666, "Antennas and Radio Propagation", published by US Army
Feb., 1953. Please advise price & condition. Remove the "NOSPAM" from
my email address. Thanks and 73
Dan (K0DAN)
NOSPAM-k0dan@arrl.org

2632. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 14:09:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f310d3d$1_3@corp.newsgroups.com>
Source record: 111176

Reg Edwards wrote:
> But bearing in mind Cecil's primary objective in using a 'tuner' is to
> provide a load which will keep the transmitter happy, without regard to SWR
> on the variable-length feedline, ...

Since I developed this antenna, I have upgraded from an IC-706
to an IC-756PRO which has a built-in autotuner which will match most anything
with a 50 ohm SWR of 3:1 or less. So my variable length feedline is ideal for
hams with built-in autotuners who are having trouble matching high SWR's.
--
73, Cecil http://www.qsl.net/w5dxp

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2633. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 14:14:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f310e89$1_3@corp.newsgroups.com>
Source record: 111177

Reg Edwards wrote:

> "'Doc" wrote > Cecil,
>> Now all you have to do is get everyone to move so
>>that they are in one of those four directions from you.
>
> What is the gain in dB of a rotatable dipole relative to one which is fixed?

EZNEC models mine at +9 dB at a TOA of 32 deg. +6 dB if you ignore TOA.
That is, of course, off the ends of the fixed dipole.
--
73, Cecil http://www.qsl.net/w5dxp

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2634. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 14:16:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f310ef0$1_3@corp.newsgroups.com>
Source record: 111178

Dave Shrader wrote:
> 0 dBd !!!!!!!!!!

Not off the ends of the fixed dipole. :-)

> Reg Edwards wrote:
>> What is the gain in dB of a rotatable dipole relative to one which is
>> fixed?
--
73, Cecil http://www.qsl.net/w5dxp

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2635. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 14:18:42 UTC
From: richardharrison@webtv.net
Message-ID: <8060-3F310E42-48@storefull-2311.public.lawson.webtv.net>
Source record: 111179

Jason, AG4DG wrote:
"3. Connector for the noise antenna"

Eliminate the noise antenna for simplicity. Signal at the radio can be delayed to allow silent disconnect before noise arrives to upset it. Like noise squelch, representative interference can be sensed outside the receiver passband from a common antenna. But sensing large interfering signal impulses requires more reception independence than does noise squelch reception of background noise. But it doesn`t require separate antennas as does space diversity reception.

Best regards, Richard Harrison, KB5WZI

2636. FME coax adapter for ham use, ratings?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 15:42:30 UTC
From: kiddi@marel.is
Message-ID: <b7cca008.0308060742.482fe6b1@posting.google.com>
Source record: 111180

Some coax cable dealers have recently been promoting FME connectors as adapters between the coax cable and the connector (BNC or UHF). The concept is neat, kind of plug-and-play, but I have not come across any specifications or testimonies from amateurs about how they perform in our applications. These adapters don't look as rugged as, say, UHF connectors soldered directly to the coax cable. Some questions I have are regarding:

- Power rating (suitable for 100W or KW on HF?)
- Frequency limits (HF should be OK, how about 2m, 70cm, etc.?)
- Immunity to water, corrosion, etc. in outdoor use.

Any comments or experience, anyone?

73 de TF3KX, Kristinn.

2637. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 17:10:38 UTC
From: jder8745@aol.com
Message-ID: <20030806131038.00688.00001474@mb-m25.aol.com>
Source record: 111181

I use such an antenna but feed it differently. Mine is 130 ft long and fed with 300-Ohm xmitting twin lead.

The transmission line connects to the balanced output of a MFJ tuner.

Used it on all bands 80 through 6 till I got a 6-m Yagi and a tribander.

It is still a much used antenna, especially on 80, 40, 18, and 24.

On 40 it is a fullwave doublet and has about 1.5 dB gain over a dipole.

I have used it in 160 by shorting the two wires of the twinlead together and feeding it as a Marconi antenna.

I agree with other posters who wud like to see the center a little higher, but a man's gotta do what a man's gotta do!

Have fun, Jack K9CUN

2638. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 18:16:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj2hfrqk3uum9e@corp.supernews.com>
Source record: 111183

That's simply untrue. But I guess that's what the smiley face means?

Roy Lewallen, W7EL

W5DXP wrote:
>
> With a fixed resonant dipole, you only get two directions. :-)

2639. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 18:30:38 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.08.06.18.30.31.605636@mailhot.reversethatanddropthis.com>
Source record: 111184

On Wed, 06 Aug 2003 08:14:22 -0500, Richard Harrison wrote:
> the Belden cable. This is 1.414 X the rms volts. No need to speculate.
> Coax tables abound. One is found in the ARRL Antenna Book.

Good point - If I can get a dos or windows system up and running, I'll model it with that magloop4.exe program. Regardless, I'd intended to pull the center conductor back a half inch or so after stripping the cable to the insulator. I actually intend to use rg-58 - smaller, lighter, and can set the outer conductor closer to the center, for (I hope) higher capacitance. I'm now considering mounting the sides of the cap to the hula hoop with the hoop actually split there, so the hoop is stretched and compressed as the capacitance is changed, to avoid tight flexure of conductors or sliding contacts.

My biggest concern is dialectric puncture. I'll be running a maximum of 5W.

tim

2640. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 18:35:57 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <hUbYa.81656$o%2.37345@sccrnsc02>
Source record: 111185

The gain of a dipole is the gain of a dipole.

Now, Directivity is another matter :-)

W1MCE

W5DXP wrote:

> Dave Shrader wrote:
>
>> 0 dBd !!!!!!!!!!
>
>
> Not off the ends of the fixed dipole. :-)
>
>> Reg Edwards wrote:
>>
>>> What is the gain in dB of a rotatable dipole relative to one which is
>>> fixed?

2641. Re: Distance to Link Coupling in a Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 18:57:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgrj2tpna1@sparta.btinternet.com>
Source record: 111186

"Al" wrote
> The shielded three-foot diameter loop I built is for receive only. The
> primary loop is six turns paralleled by a variable capacitor, and the
> secondary (link loop) is one turn (same diameter) fed to a preamp or
> directly to the receiver. The band of operation of the loop is about
200kHz
> to 500kHz (NDB chaser).
>
> One question that is not answered in rjeloop3 is what should be the
distance
> from the output (link) loop to the main loop? The antenna's I built used
> flat cable for the wiring and one of the turns was the link so the
distance
> was 0.050 inches. In other articles I have read that the Q, gain, and S/N
> ratio can be varied by varying the distance between the two loops.
> Approximately what is the distance? Are we talking a small fraction of an
> inch or 2, 3, or perhaps six inches apart? I would just like a feeler
> distance to work with. If the distance is to be over one inch, I'm
> considering building the primary loop in one hoola-hoop form and the
> secondary loop in a second hoola-hoop then varying the distance between
the
> hoops. Any thoughts on this or is this a waste of time and effort?
>
==========
Hi Al,
To have a significant effect on operating Q it is necessary to shift the coupling loop away from the main loop by more than about 1/10 of loop diameter. This is mechanically inconvenient and anyway I've forgotten how to calculate the coupling coefficient between the two coils. A more convenient way of varying coupling between main loop and receiver is to place a smaller loop inside the main loop in the same plane. Just like a Magloop transmitting loop. Additional variation can be obtained by rotating the coupling loop relative to the other. It is easier to calculate.

The two loops constitute a transformer. It makes little difference wherabouts the small loop is located inside the large loop. So it can be located near the bottom of the main loop near the tuning capacitor. It is better to have no direct connection between the two loops. It may upset the natural balance between the main loop and its surroundings and ground. One side of the coupling loop is grounded at the receiver end of the line.

If the line is an appreciable fraction of a wavelength (very unlikely) then use an impedance Zo in the same ballpark as the receiver input Z. It hardly matters whether it's coax or very loosely twisted pair.

The transformer has an effective turns ratio of -

N = (N1*D1) / (N2*D2).

N1 = main loop turns.
D1 = main loop diameter.

N2 = coupling loop turns.
D2 = coupling loop diameter.

Which may be very interesting but will not be of the slightest use unless the receiver input resistance is known.

RJELOOP3 calculates the parallel L and C resonant resistance of the main loop. Call this R1. To match this to the receiver input resistance R2, make N = SquareRoot(R1/R2).

When impedance-matched to the main loop the receiver input resistance damps the intrinsic Q of the loop to exactly half of its unloaded value. The received signal is then maximised.

Prefer to use a larger diameter for the coupling loop rather than a larger number of turns.

To maximise operating Q and selectivity match the loop to 1/2 or 1/3 times the receiver's actual input resistance. There will be a few dB loss in signal strength.

None of the foregoing will have any effect on signal to noise ratio except when the signal bandwidth is appreciably smaller than the bandwith accepted by the loop. But it is best to manage channel bandwidth in the IF amplifier.

The natural Q of a good receiving loop at LF and MF is already high enough to spoil the audio quality of broadcast stations.

Regards, Reg, G4FGQ

2642. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 19:15:55 UTC
From: Jim <elusive@quicksilver.co.uk>
Message-ID: <3f315a28_1@mk-nntp-2.news.uk.tiscali.com>
Source record: 111187

"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bgn74s$pg0fd$1@ID-134747.news.uni-berlin.de...
> You will be a much happier camper if you feed it with 450 ohm ladder line.
> You will have no trouble using the antenna anywhere from 80 to 10, and if
> >>snipped <<

I need to run the feeder from my dipole (80m) up thro the eaves, thro' the loft-space to the shack at the other side (1st floor) of the house, approx 50'. No other routes feasible. Because of the route, I thought I'd have less problems using coax, BUT from the remarks in the above recent post, will someone kindly comment on viability of 450 ohm twin feeder over such a route?

Many thanks
Jim M0Jim

Replies to NG pse!!

2643. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 20:29:08 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj2p8km2aceu85@corp.supernews.com>
Source record: 111188

Hm. And what is the gain of a dipole? Say, one 30 feet off the ground on 20 meters, at an elevation angle of 10 degrees, broadside to the wire? Or in free space, off the end of the wire? Or when mounted vertically, at an elevation angle of 64 degrees? Or 40 feet up, at an elevation angle of 25 degrees, and an azimuth angle 68 degrees from broadside? All the same? All 2.15 dBi? All zero dBd?

Roy Lewallen, W7EL

Dave Shrader wrote:
> The gain of a dipole is the gain of a dipole.
>
> Now, Directivity is another matter :-)
>
> W1MCE

2644. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 21:05:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f316ec3$1_4@corp.newsgroups.com>
Source record: 111189

Roy Lewallen wrote:
> That's simply untrue. But I guess that's what the smiley face means?

Yep, *two* major lobes with a fixed resonant dipole. With a 130 ft.
dipole on 20m, I get two times or three times as many lobes. :-)

> W5DXP wrote:
>> With a fixed resonant dipole, you only get two directions. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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2645. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 21:12:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f317090_4@corp.newsgroups.com>
Source record: 111190

Dave Shrader wrote:
> The gain of a dipole is the gain of a dipole.

Yes, and a fixed dipole doesn't have much gain off the ends compared
to a broadsided rotatable dipole. EZNEC says the maximum gain of my
dipole off the ends is "MAX GAIN = 0.88 dBi". I am extremely pleased
with my rotatable dipole. So much so that another element is just
not worth that extra half an S-unit.
--
73, Cecil http://www.qsl.net/w5dxp

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2646. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 21:52:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj2u50ish8bd3a@corp.supernews.com>
Source record: 111191

Having two lobes is way different than radiating only in two directions. A dipole radiates very well over a wide range of angles. A dipole's signal is within 3 dB of its maximum value over about 155 degrees of the possible 360, or 43% of the possible azimuth angles. That's not "two directions" -- it's nearly half of all possible directions. The signal is within 6 dB -- a mystical value to a lot of hams for reasons I've never fathomed -- over a span of 215 degrees, or 60% of all possible directions.

So, are more lobes better? Over what fraction of possible angles does your multi-lobed antenna produce gain that's better than that of a dipole? In other words, for a signal coming in from a randomly determined direction, what are the odds that the multi-lobed antenna will produce a better signal than the half wave dipole?

Hint: You can find out by using EZNEC, in well under five minutes.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> That's simply untrue. But I guess that's what the smiley face means?
>
>
> Yep, *two* major lobes with a fixed resonant dipole. With a 130 ft.
> dipole on 20m, I get two times or three times as many lobes. :-)
>
>> W5DXP wrote:
>>
>>> With a fixed resonant dipole, you only get two directions. :-)

2647. Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 21:59:37 UTC
From: Bill <wbryant@austin.rr.com>
Message-ID: <dTeYa.144468$TJ.8443056@twister.austin.rr.com>
Source record: 111192

Anybody tried to build this trap antenna yet?

http://www.nerc.com/~jdegood/coaxtrap/
http://members.shaw.ca/ve6yp/
http://members.fortunecity.com/xe1bef/hf-antennas.htm

Need some help on where to tune the traps for the bands of operation, and pruning the connection wiring. Can this be done with out a major test equipment investment?

2648. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 22:20:38 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bgruvmava1@titan.btinternet.com>
Source record: 111193

> I need to run the feeder from my dipole (80m) up thro the eaves, thro'
the
> loft-space to the shack at the other side (1st floor) of the house, approx
> 50'. No other routes feasible. Because of the route, I thought I'd have
> less problems using coax, BUT from the remarks in the above recent post,
> will someone kindly comment on viability of 450 ohm twin feeder over such
a
> route?

==========

If necessary just squeeze heavy-duty 450-ohm ladder line wires close together wherever they pass through a small hole. Line holes with a thick plastic film or a pipe to obtain a higher breakdown voltage. Slowly twist the cable every 2 feet between holes and keep it at least 1 or 2 inches away from foreign materials, long metal conductors or otherwise.

If it was possible to do A-B comparisons at HF you would find little difference - equivalent to a few pF change in a tuner capacitor setting and 1/2-turn change in the roller inductor. To be safe stick to 100 or 200 watts unless you wish to test to destruction under worst case, but controlled conditions (eg., very high SWR) just to see what happens. Probably nothing!

At HF a change in impedance Zo over a length of a few inches when passing through one or two holes in timber or brickwork will have a negligible effect on performance. The advantage of a balanced line all the way to the transmitter may be that a tuner can be located in the shack. If an automatic tuner is used then use easier-to-install coax and locate the tuner at the antenna end.

Over a length of 50 or more feet, at 28 MHz, the lower loss in 450-ohm line relative to 50-ohm RG-58 is worth thinking about. At 1.9 MHz forget it.

But it's only a matter of economics, time and labour, and the well-earned satisfaction of having done a good job which works according to plan.

Reg, G4FGQ

2649. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 22:34:31 UTC
From: NN7K@reno.rmci.net
Message-ID: <fefYa.3061$jq.1803@fe01.atl2.webusenet.com>
Source record: 111194

Tim- at 5 watts, doubt that you could even puncture RG-174 (that the coax about the thickness of 1/8 inch), that is used for test , and multiplex drop cables! Jim NN7K

"Tim sent:
> My biggest concern is dialectric puncture. I'll be running a maximum of
> 5W.
>
> tim

2650. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 22:35:20 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <u0OdnZkW8ZwsH6yiXTWJiw@comcast.com>
Source record: 111195
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

Ideally you point the noise antenna at the noise, and the signal antenna at the signal. In the real world the noise antenna is usually fixed, but might be pointed at something like a power line. In any case, the noise antenna is usually quite low, and you hope it won't pick up much of the desired signal.

BTW, way back when, either Radio Shack or Lafayette sold a CB radio that used a separate noise channel that was tuned to just outside the CB band. No idea how well it worked.

Tam/WB2TT
"Brooke Clarke" <brooke@pacific.net> wrote in message
news:3F30A5BC.6050205@pacific.net...
Hi Jason:

I think the "signal antenna" and "noise antenna" are both just antennas. I can't see how you can make an antenna that only hears noise and another that hears the same noise and signal.

2651. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 22:48:01 UTC
From: NN7K@reno.rmci.net
Message-ID: <PqfYa.3062$jq.1501@fe01.atl2.webusenet.com>
Source record: 111196

Well, Richard, tho in jest, serves purpose, that even with 30 watts lost on surface of a balun , (or any other surface, for thatr matter), that by doubleing the size of the SURFACE, that it would take something like 4 TIMES as much heat to destroy it. For the same reason that a transistor, in the size of a micron will vaporize with a slight static discharge , doesn't necessarily mean that a POWER transistor will even feel a hickup, if it takes you 30 minutes with a 100 watt soldering iron trying to get solder on the leads! For the same reason , have 50 ohm coaxial resistor that fits in a reducer for rg-174, to a SO-239, that would probably crack, with the heat, and meantime also have a resistor, 1/3 the size, but made to mount on a heat sink, that will dissipate 100 watts all day! (also made as a 50 ohm load-- same devices, but different uses-- Jim

>
> Hi Jim,
>
> How close is anything to your flesh when you are holding it? Are you
> still holding it, if it were 2 times further away?
>
> 73's
> Richard Clark, KB7QHC

2652. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-06 23:59:08 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bgs4of$s90vf$1@ID-134747.news.uni-berlin.de>
Source record: 111197

When building a Trap dipole you start by building from the inside out. Lets say you want an dipole for 20 and 40. Cut a twenty meter dipole, hang it up and adjust it for minimum SWR. Then add the traps and balance of the antenna. You will obtain some loading from the coils in the traps so the 40 meter antenna will be somewhat shorter than you would expect. Prune for operation on 40 meters. The problem with traps is that you need a set for each band you want to work. You can't sneak by on the odd multiple halfwave, the traps might be at a bad place on that 20/40 antenna used on 15. I have a great example of that on a trapped dipole I loaded on 12 to try the band out..

I regret the years wasted with coaxial fed dipoles. Life is much easier if you hang as much wire as you can, as high as you can get it, and feed with ladder line. I work all 80 through 10 with a 68' (34' a side) dipole fed with 460 ohm ladder line. For portable use I have 75 feet of AWG#22 speaker wire. 34" is split and forms the doublet, the rest is the transmission line. It is usable from 80 to 10 and works great.

--
73 es cul

wb3fup
a Salty Bear

"Bill" <wbryant@austin.rr.com> wrote in message
news:dTeYa.144468$TJ.8443056@twister.austin.rr.com...
> Anybody tried to build this trap antenna yet?
>
> http://www.nerc.com/~jdegood/coaxtrap/
> http://members.shaw.ca/ve6yp/
> http://members.fortunecity.com/xe1bef/hf-antennas.htm
>
> Need some help on where to tune the traps for the bands of operation, and
> pruning the connection wiring. Can this be done with out a major test
> equipment investment?
>
>

2653. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 00:00:41 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <JEgYa.83822$YN5.60044@sccrnsc01>
Source record: 111198

But, it has the same gain as the dipole when both are configured the same for Az and El.

BTW, the gain off the end of a rotatable dipole is the same as the gain off the end of a fixed dipole.

When modeled in EZNEC, I don't see an input for rotatable dipole!!! If the X,Y,Z coordinates are the same then the gain is the same. Rotate both 90 degrees and the gain is still the same.

Trolling tonight is very poor. The Red Sox are playing. I don't know whether to be happy or sad.

Deacon Dave, W1MCE

W5DXP wrote:

> Dave Shrader wrote:
>
>> The gain of a dipole is the gain of a dipole.
>
>
> Yes, and a fixed dipole doesn't have much gain off the ends compared
> to a broadsided rotatable dipole. EZNEC says the maximum gain of my
> dipole off the ends is "MAX GAIN = 0.88 dBi". I am extremely pleased
> with my rotatable dipole. So much so that another element is just
> not worth that extra half an S-unit.

2654. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 00:12:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f319abd_1@corp.newsgroups.com>
Source record: 111199

Roy Lewallen wrote:
> Having two lobes is way different than radiating only in two directions.

Depends on the defined courseness of the directions. With my rotatable
dipole running North-South, it only radiates well in two directions,
East and West, which is approximately half of the two out of four possible
course directions.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2655. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 00:15:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f319b42_1@corp.newsgroups.com>
Source record: 111200

Dave Shrader wrote:
> BTW, the gain off the end of a rotatable dipole is the same as the gain
> off the end of a fixed dipole.

Thus the advantage in being able to rotate it.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2656. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 00:45:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jl43jvcd394cmbmoo00vp0a8kco7o07qje@4ax.com>
Source record: 111201

On Wed, 6 Aug 2003 15:48:01 -0700, <NN7K@reno.rmci.net> wrote:

>Well, Richard, tho in jest, serves purpose, that even with 30 watts lost on
>surface of a balun , (or any other surface, for thatr matter), that by
>doubleing the size of the SURFACE, that it would take something like 4 TIMES
>as much heat to destroy it.

Hi Jim,

No, this is incorrect. When discussing power dissipation, it follows a linear relationship to surface area - not square law (you are mixing radius and surface area arguments). Even letting this pass, power dissipation does not even conform to doubling with doubling of surface area. This departure from expectation arises in the increased distance the heat has to travel to find the surface. This is usually found in having too many fins in an effort to maximize that same surface area (and leads to an increase in Thermal Resistance). Further, more fins also diminish heat transfer through convection (again increasing Thermal Resistance). 4 or 5 fins is usually optimal.

73's
Richard Clark, KB7QHC

2657. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:17:24 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <EMhYa.83271$uu5.11767@sccrnsc04>
Source record: 111202

If I'm going to rotate something it will be my LOG PERIODIC!!! <grin>

Cecil, you and I have to start to work on an antenna that has
approximately 6 dBi gain throughout 4Pi Steradians.

What about 4 isotropics spaced 1/2 wavelength square and fed in phase?

We can use FRACTAL technology to achieve the necessarily small but
optimized dimensions. Roy can help with the modeling using NEC-4.

Richard can challenge each of our decisions and claims.

We can pile up the bandwidth and may even exceed the total bandwidth
used on 'Cecil's Math ...'

Back to the Red Sox. I still don't know whether to smile or be sad.

DD

W5DXP wrote:

> Dave Shrader wrote:
>
>> BTW, the gain off the end of a rotatable dipole is the same as the
>> gain off the end of a fixed dipole.
>
>
> Thus the advantage in being able to rotate it.

2658. Perth Plus Outbacker antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:24:43 UTC
From: Fred <peerenbf@dma.org>
Message-ID: <Pine.LNX.4.44.0308062120190.3986-100000@dmapub.dma.org>
Source record: 111203

Are there any of you out there that are using or have used the Outbacker antennas, especially the Perth Plus. I am getting tired of changing resonators on my hustler whe I am mobile and I don't like the many quirks that the screwdriver antennas have. I would like to hear from you guys before I shoot a bunch of bucks on a piece of gear that may not work that well. The hustler works like gangbusters. I would like to have another antenna that works as well yet like the Outbacker all one has to do is change the tap plug in and go with no more tuning required.
Thanks in advance
73 de KE8TQ
Fred

--

2659. Re: Distance to Link Coupling in a Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:34:58 UTC
From: AL KA5JGV <ABurzynski@nojunk.satx.rr.com>
Message-ID: <61iYa.146206$XV.7785814@twister.austin.rr.com>
Source record: 111204

Reg, thank you for the detailed explanation. You have given me plenty to work with and to contemplate on for my next loop project.

This group has some quality people in it and I, and I'm sure others, are grateful that you are willing to share your knowledge with us. Thank you.
Al
KA5JGV

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:bgrj2tpna1@sparta.btinternet.com...
> ====================================
> Hi Al,
..snip..
> Regards, Reg, G4FGQ

2660. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:44:19 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F31AEF3.C013A365@cwis.net>
Source record: 111205

Cecil,
Since mine isn't at the 'optimum' height, I hear
stuff from all around me.
'Doc

2661. Re: GR 1710-P2 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:45:46 UTC
From: Walter Maxwell <w2du@iag.net>
Message-ID: <ebiYa.805$M6.53785@newsread1.prod.itd.earthlink.net>
Source record: 111207

"Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
news:vitlsn41jtmh5b@corp.supernews.com...
> I just got a General Radio 1710-P2 Transmission/Reflection Bridge with 4
> ports. On the front, RF IN, REFLECTION OUT, REFERENCE OUT (-12dB), and on
> the left side, UNKNOWN B. I can't find any docs on google so can anyone
> please tell me the frequency range, impedance and how the 4th port is
used,
> or perhaps where to find more info.
> tnx
> hank wd5jfr
>
Hi Henry,

This will probably be of no help due to the timing. I have a whole range of GR catalogs with specs for all the equipments. The problem is that I live in Michigan from May to Nov, so I'm in Michigan now, but my RF lab and catalogs are in Florida, where I live the remainder of the time. If you are unable to get the info before I go back to Florida I'll get the data to you after I return. Hope you won't have to wait that long to get the data you need.

Good luck,

Walt, W2DU

2662. Re: small 10 meter beam for satellite RX

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:45:52 UTC
From: bruceandkarla@ziggycom.net
Message-ID: <7192d525.0308061745.2aaef74c@posting.google.com>
Source record: 111206

bruceandkarla@ziggycom.net (Bruce) wrote in message
news:<7192d525.0308031025.47d47a23@posting.google.com>...
> iam wanting the plans to a small 10 meter beam I could use for satillite RX
> I am trying to get set up to work RS-15. or a good small beam to buy.
> Thanks
>
> Bruce
> KD4PQF

Thanks for all the help. I have heard rs-15 only one time on my
dipole.
Iam running a IC-706mkiig. and just a 2 meter vertical, and a 10
meter dipole.
I know i need to to some majior work to the antenna farm, but I had a
accident and broke my hip, so on my time off i decided to get back
into ham radio. But it sounds like you all have gave me some good
ideas, and pointed me in the direction i need to go. THANKS

Bruce
KD4PQF

2663. Re: 80 m Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:50:54 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F31B07E.4702A660@cwis.net>
Source record: 111208

Jim,
If you follow the 'normal' rules for using twin-
lead feed line you shouldn't have any more (or any
less) problems than if you used coax. There is always
the possibility that RF will 'eat up' all the electrical
appliances in your house, but maybe not.
Nothing except your pocket says you can't change feed
lines or antenna if you want. So, try it and see what
happens...
'Doc

2664. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 01:59:00 UTC
From: Jerry Avins <jya@ieee.org>
Message-ID: <3F31B264.CAA78C3E@ieee.org>
Source record: 111209
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

Tweetldee wrote:
>
...
>
> Now, as to your concern to keep 100W of RF from blowing up your noise
> canceller. That's what antenna changeover relays are for. They normally
> connect the antenna to the receiver, but when the transmitter is keyed up,
> the relay connects the antenna to the transmitter output, and disconnects it
> from the receiver. Simple, but effective, and has been used for many many
> years in amateur as well as commercial radio equipment.

The line from the change-over relay to the receiver should be shorted
when the receiver is disconnected and either short or a half wave, or
else open when the receiver is disconnected and a quarter wave long.

Jerry
--
Engineering is the art of making what you want from things you can get.
ï¿½ï¿½ï¿½

2665. Re: Perth Plus Outbacker antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 02:17:39 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <7FiYa.56669$Vt6.20856@rwcrnsc52.ops.asp.att.net>
Source record: 111210

Fred,

Well with the Outbacker for change the tap (and recoil the wire from bottom to desired tap)
as you change bands. IF you are a constant band changer - it will drive you crazy (like your Hustler),
BUT the positive is all you have to change is the tap -- no coils to remember or store in the trunk

My Outbacker is out on the patio and I find it is seasonal of what bands I leave it at

w9gb

"Fred" <peerenbf@dma.org> wrote in message news:Pine.LNX.4.44.0308062120190.3986-100000@dmapub.dma.org...
> Are there any of you out there that are using or have used the Outbacker
> antennas, especially the Perth Plus. I am getting tired of changing
> resonators on my hustler whe I am mobile and I don't like the many quirks
> that the screwdriver antennas have. I would like to hear from you guys
> before I shoot a bunch of bucks on a piece of gear that may not work that
> well. The hustler works like gangbusters. I would like to have another
> antenna that works as well yet like the Outbacker all one has to do is
> change the tap plug in and go with no more tuning required.
> Thanks in advance
> 73 de KE8TQ
> Fred
>

2666. Re: GR 1710-P2 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 02:57:15 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vj3g17lok85ha4@corp.supernews.com>
Source record: 111211

Walt
It's an honor to get a response from one of my favorite antenna writers. I hope I don't have to wait that long too! In one of the old format QSTs you wrote that your design for the antennas in one of the spacecraft had a 17 to 1 swr if I recall correctly. I was trying to find that article to show it to one of my friends who spends too m uch time on swr. Do you happen to recall the issue? And I can't find mention of it in either issue of Reflections. BTW I took the 1710 case apart and there's a 50 ohm temination in there and the GR 874 connectors are probably 50 ohm but I don't know how high a frequency they are generally good for, perhaps approaching a GHz, I'm hoping the low end is good for HF. Inside, the unit is beautifully made, they don't make them like that anymore.
tnx
hank wd5jfr
"Walter Maxwell" <w2du@iag.net> wrote in message
news:ebiYa.805$M6.53785@newsread1.prod.itd.earthlink.net...
>
> "Henry Kolesnik" <wd5jfr@oklahoma.net> wrote in message
> news:vitlsn41jtmh5b@corp.supernews.com...
> > I just got a General Radio 1710-P2 Transmission/Reflection Bridge with 4
> > ports. On the front, RF IN, REFLECTION OUT, REFERENCE OUT (-12dB), and
on
> > the left side, UNKNOWN B. I can't find any docs on google so can
anyone
> > please tell me the frequency range, impedance and how the 4th port is
> used,
> > or perhaps where to find more info.
> > tnx
> > hank wd5jfr
> >
> Hi Henry,
>
> This will probably be of no help due to the timing. I have a whole range
of
> GR catalogs with specs for all the equipments. The problem is that I live
in
> Michigan from May to Nov, so I'm in Michigan now, but my RF lab and
catalogs
> are in Florida, where I live the remainder of the time. If you are unable
to
> get the info before I go back to Florida I'll get the data to you after I
> return. Hope you won't have to wait that long to get the data you need.
>
> Good luck,

>
> Walt, W2DU
>
>

2667. Re: Perth Plus Outbacker antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 03:17:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f31c60b_1@corp.newsgroups.com>
Source record: 111213

Fred wrote:
> Are there any of you out there that are using or have used the Outbacker
> antennas, especially the Perth Plus.

Depends on your favorite bands. It's a pretty good antena for 20m-10m.
About 8 dB down from the top bugcatchers and screwdrivers on 75m.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2668. Re: GR 1710-P2 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 03:18:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b1h3jvkm2ro8efit9ngml8ricfq8slfsme@4ax.com>
Source record: 111212

On Wed, 6 Aug 2003 21:57:15 -0500, "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>BTW I took the 1710 case apart and there's a 50 ohm
>temination in there and the GR 874 connectors are probably 50 ohm but I
>don't know how high a frequency they are generally good for, perhaps
>approaching a GHz, I'm hoping the low end is good for HF. Inside, the
>unit is beautifully made, they don't make them like that anymore.
>tnx
>hank wd5jfr

Hi Hank,

The connectors are good to 12GHz. The instrument is probably useful
through HF, and possibly out to 60MHz with some derating.

73's
Richard Clark, KB7QHC

2669. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 04:33:31 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bgskqr$6q0$0@208.207.71.135>
Source record: 111214
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

Tweetldee wrote:

>
> Allow me to infuse a different idea. Think about noise as a fairly
> broadband phenomenon. The same atmospheric noise that you hear on 21.500
> Mhz will also be heard on 21.510 Mhz. Consider the possibility of biulding
> two identical receivers, the main receiver tuned to the desired reception
> frequency, the other tuned just a few Khz away, but out of the received
> signal's bandwidth. Then, you detect the noise on the second receiver,
> invert it, and sum it into the first receiver's signal chain. This concept
> is used in ultra-low noise, high sensitivity deep space receivers to almost
> totally eliminate noise in the received signal.

It's also the same scheme widely used for years in VHF FM mobile receivers.
There is a completly separate receiver that receives the noise which is inverted and
applied out of phase to the signal channel to cancel the noise pulses received through the
receiver. The scheme obviously works much better with pulse type noise.

Dick

2670. Re: rsgb now posting their fantastic $2 membership offer

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 05:27:59 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <7oo3jvo5962p4135duclimgneg1aq74vc3@4ax.com>
Source record: 111182

On Wed, 06 Aug 2003 13:44:29 GMT, ian<g3zhi@hotmail.com> wrote:

>the rsgb are now posting their $2 memberships
>this includes the monthly radcom magazine
>i got my first copy yesterday and membership certificate
>so if you took advantage of the offer check your post
>the rsgb did accept JPG's despite what they said to put some people
>off
>so i think anyone who did not apply last month could still do so late
>its a fantastic offer
>
>
>73 Ian G3ZHI

I'm mailing mine in today, to see if they'll really honor this thing
for somebody from Texas !!

Bob
k5qwg

>
>
>http://www.qsl.net/g3zhi - has many ham radio links

2671. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 05:48:23 UTC
From: rgawtry@timewave.com
Message-ID: <vj3q1bhol1tm9d@corp.supernews.com>
Source record: 111215
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

In article <3F31B264.CAA78C3E@ieee.org>, Jerry Avins <jya@ieee.org> wrote:
>Tweetldee wrote:
>>
> ...
>>
>> Now, as to your concern to keep 100W of RF from blowing up your noise
>> canceller. That's what antenna changeover relays are for. They normally
>> connect the antenna to the receiver, but when the transmitter is keyed up,
>> the relay connects the antenna to the transmitter output, and disconnects it
>> from the receiver. Simple, but effective, and has been used for many many
>> years in amateur as well as commercial radio equipment.
>
>The line from the change-over relay to the receiver should be shorted
>when the receiver is disconnected and either short or a half wave, or
>else open when the receiver is disconnected and a quarter wave long.
>
>Jerry

It's important to protect the both the noise antenna input and the main antenna inputs on the noise canceller from RF - but trying to figure out if you should short or open the receiver input based on the wavelength is a little difficult when the frequency range covers a continuum of multiple octaves. Not to mention the problem with putting a quarter or half wave chunk of feedline between the changeover relay and the receiver input when the wavelength is 160 meters. That technique works well for any single frequency (or very narrow frequency band as a percentage of the center frequency) and is commonly used at VHF frequencies and above with diode and relay switching circuits for the additional isolation it affords.

An important consideration is the voltage on the changeover relay and the components connected to it. The obvious part is the 100 W and 50 Ohm situation, but consider what happens to the voltage when you have a high (SWR for the hams / VSWR for the engineers). Jason, since this is your project, I'll leave you with the research to figure out the potential range of reactive loads with various antennas as well as the calculation of the resultant voltages. Remember a good simulation models the real world, not just a convenient part of it. I will tell you the result if you don' t give this part of your design its due. Think about PCB traces vaporized, capacitors shorted, transistor "fuses", relay housings melted and what we used to call "essence of Allen Bradley" from the burned resistors. It's about the same as a lightning hit or running 1000 watts through a 100 watt unit! This can be a safety issue as well as causing unncessary delay and cost.

One of the other people noted that it was important to do a lot of reading, research and analysis of your own - I'll second that!

If you haven't run across it yet, start with the term "Null Steering".

'nuff said for now,

Randy Gawtry
Timewave Technology Inc.

2672. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 06:45:27 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0308062245.6d24f2c2@posting.google.com>
Source record: 111216

"Tim Conway" <n9hmg@mailhot.reversethatanddropthis.com> wrote in message
news:<pan.2003.08.06.18.30.31.605636@mailhot.reversethatanddropthis.com>...
> Good point - If I can get a dos or windows system up and running, I'll
> model it with that magloop4.exe program.

Hi Tim,
Reg's programs run well in a DOS window of a Win2k system. Any system
from 386 to Pentium III should work for you.

BR from Ivan

2673. Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 11:16:19 UTC
From: Geo <usenet@plus.net>
Message-ID: <20030807121610320+0100@news.btinternet.com>
Source record: 111217

Has anyone bought/ used/ worked this antenna?
http://www.g3tpw.ukgateway.net/index.html

I have a very small QTH, with not much room for HF antennas, but
with lots of scope for a good bit of TVI to the neighbors, so a
vert may not be the best solution.

The website is a bit sparse on tech details.

Can anyone comment on this one?

73
George...

2674. Re: PM magloop - Ideas, success/failure stories?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 12:46:55 UTC
From: Tim Conway <n9hmg@mailhot.reversethatanddropthis.com>
Message-ID: <pan.2003.08.07.12.46.05.709314@mailhot.reversethatanddropthis.com>
Source record: 111218

On Wed, 06 Aug 2003 23:45:27 -0700, OK1SIP wrote:

> Reg's programs run well in a DOS window of a Win2k system. Any system
> from 386 to Pentium III should work for you.

Thanks, Ivan. I'm sure they do. I just don't have a working microsoft-based system at the moment. I'm trying to get WINE up and running, but my role as "Mr. Mom" keeps me from any long projects. It took me two weeks to build a simple two-coil mobile HF antenna, just because I can work on it for only a few minutes at a stretch.

One of these days, I'm going to have to move beyond just talking about it and try to build one of these suckers.

73,

tcc

2675. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 14:35:12 UTC
From: Bill <wbryant@austin.rr.com>
Message-ID: <AstYa.168712$xg5.21576@twister.austin.rr.com>
Source record: 111119

Yes, I agree. I have used open wire dipoles and they work great over all bands. But, my problem is constrained by wife and housing subdivision requirements. So my antenna is confined to the attic. I tried to use a short version of the open wire dipole and it is not loading at all and the RFI is everywhere. So I guess traps are my only option at this point. I just never built one before or had experience with coaxial type traps either. Just need to know where to tune the traps for maximum impedance on the band of operation. Your explanation of pruning makes sense.

Thanks for your reply
73, Bill

"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bgs4of$s90vf$1@ID-134747.news.uni-berlin.de...
> When building a Trap dipole you start by building from the inside out.
> Lets say you want an dipole for 20 and 40. Cut a twenty meter dipole,
hang
> it up and adjust it for minimum SWR. Then add the traps and balance of
the
> antenna. You will obtain some loading from the coils in the traps so the
> 40 meter antenna will be somewhat shorter than you would expect. Prune
for
> operation on 40 meters. The problem with traps is that you need a set for
> each band you want to work. You can't sneak by on the odd multiple
> halfwave, the traps might be at a bad place on that 20/40 antenna used on
> 15. I have a great example of that on a trapped dipole I loaded on 12 to
> try the band out..
>
> I regret the years wasted with coaxial fed dipoles. Life is much easier
if
> you hang as much wire as you can, as high as you can get it, and feed with
> ladder line. I work all 80 through 10 with a 68' (34' a side) dipole fed
> with 460 ohm ladder line. For portable use I have 75 feet of AWG#22
> speaker wire. 34" is split and forms the doublet, the rest is the
> transmission line. It is usable from 80 to 10 and works great.
>
> --
> 73 es cul
>
> wb3fup
> a Salty Bear
>
> "Bill" <wbryant@austin.rr.com> wrote in message
> news:dTeYa.144468$TJ.8443056@twister.austin.rr.com...
> > Anybody tried to build this trap antenna yet?

> >
> > http://www.nerc.com/~jdegood/coaxtrap/
> > http://members.shaw.ca/ve6yp/
> > http://members.fortunecity.com/xe1bef/hf-antennas.htm
> >
> > Need some help on where to tune the traps for the bands of operation,
and
> > pruning the connection wiring. Can this be done with out a major test
> > equipment investment?
> >
> >
>
>

2676. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 14:38:45 UTC
From: fantbb@yahoo.com
Message-ID: <c2a65514.0308070638.4d3c0861@posting.google.com>
Source record: 111120

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f3076d0_3@corp.newsgroups.com>...
> Kristinn Andersen wrote:
> > Any comments, anyone, before I remove the vertical and turn to another
> > design?
>
> I spent considerable time and effort erecting a 33ft vertical 40m
> antenna with 8 elevated radials at 20ft. Average signal strengths were
> about 2 S-units below a dipole and the noise level was about 2 S-units
> higher than the dipole. At my QTH, it was a dog.

I had exactly the opposite results. It was 2-3 S units better at low angles of radiation compared to my low dipole. I've heard other experiences like this too. I just wonder if there some part of antenna theory that's missing that could explain why that happens. Murphy's law, blind luck, who knows. 8-)

73!

Jeff

2677. Re: Perth Plus Outbacker antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 14:46:21 UTC
From: J T <JJnospam@comuserve.com>
Message-ID: <bgtont$a83$1@ngspool-d02.news.aol.com>
Source record: 111121

Interesting antenna but the Hustler will do the same thing. I use 4
resonators on mine all the time and they have a much broader bandwidth.

I noticed the their spec page wasn't much of a spec page. Narrow swr curves
(Adjustable but you have to get out of the car to do so) and a questionable
200 watt handling capabililitiy. (It's hard to tell as there are no photos
only drawings and the coil diameters are hard to judge.)

With the Hustler, the standard resonators (rated at 400 watts and will do
500 with no problem as I have used them with 500 watts) once trimmed from
your center swr will cover the band with no more adjustments. I get 100
watts and acceptable swr with each band. 75 meters I opted for the "super"
resonator as it has a much wider bandwidth.

I have used hamsticks to bugcatchers to screwdirvers to outbacks and have
settled on the Hustler.

"helmsman" <helmsman@mindspring.com> wrote in message
news:89e4jvs6dc21m5krkqh7rgdim0gjrtml9n@4ax.com...
> On Wed, 6 Aug 2003 21:24:43 -0400, Fred <peerenbf@dma.org> wrote:
>
> >Are there any of you out there that are using or have used the Outbacker
> >antennas, especially the Perth Plus. I am getting tired of changing
> >resonators on my hustler whe I am mobile and I don't like the many quirks
> >that the screwdriver antennas have. I would like to hear from you guys
> >before I shoot a bunch of bucks on a piece of gear that may not work that
> >well. The hustler works like gangbusters. I would like to have another
> >antenna that works as well yet like the Outbacker all one has to do is
> >change the tap plug in and go with no more tuning required.
> >Thanks in advance
> >73 de KE8TQ
> >Fred
>
> Check this one out. http://www.spiderantenna.com/spec.html
> 4 HF bands at one time mobile, works for me.
> I also have 2 sets hooked together on a pole at home for a base
> antenna.
>
> .
> Boycott anything made in France & Germany & vacation somewhere else.

2678. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 14:53:41 UTC
From: Voice In Wilderness <VIW@forest.com>
Message-ID: <WJtYa.30940$ff.11941@fed1read01>
Source record: 111122

For horizontal antennas -- the radiation angle becomes lower as the height
of the antenna increases and vice versa (with caveats)
A layman's explanation at URL:
http://www.signalengineering.com/ultimate/angle_of_radiation.html

Excuse the CB reference -- but it has some nice pictorials.

Those mathematically inclined can model antennas at URL:
http://www.eznec.com/

==========

"Jeffdeham" <fantbb@yahoo.com> wrote in message
news:c2a65514.0308070638.4d3c0861@posting.google.com...
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f3076d0_3@corp.newsgroups.com>...
> > Kristinn Andersen wrote:
> > > Any comments, anyone, before I remove the vertical and turn to another
> > > design?
> >
> > I spent considerable time and effort erecting a 33ft vertical 40m
> > antenna with 8 elevated radials at 20ft. Average signal strengths were
> > about 2 S-units below a dipole and the noise level was about 2 S-units
> > higher than the dipole. At my QTH, it was a dog.
>
> I had exactly the opposite results. It was 2-3 S units better at low
> angles of radiation compared to my low dipole. I've heard other
> experiences like this too. I just wonder if there some part of antenna
> theory that's missing that could explain why that happens. Murphy's
> law, blind luck, who knows. 8-)
>
> 73!
>
> Jeff

2679. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 15:09:25 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <LfKdnWIiTvQ99q-iXTWJhg@comcast.com>
Source record: 111123

This looks like a VHF antenna, based on the length of the elements. May QST has a similar idea for ham use on page 33. If the 909 is to be used for SW, a pair of Hamsticks may be adaptable to a nearby SW band, although a loop could be simpler, cheaper and possibly less noise-prone.

Would 4 inch irrigation tubing be self-supporting at the 32-foot length?

Tom, N3IJ

"Joe Strain" <jstrain1@cfl.rr.com> wrote in message
news:WRXXa.16793$K4.867859@twister.tampabay.rr.com...
> Go to Fair Radio and check out their military surplus too, and if anybody
> can, check out this one and advise on it applicability for use with a ATS
> 909
> http://www.fairradio.com/0mk-12.htm 12' MILITARY MAST KIT $59.95
>
> Thanks
> Yodar
>
>
> ================
> "Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
> news:ebhviv87vg7b3tpk6oforub1ob7jeou1da@4ax.com...
> > On Tue, 05 Aug 2003 02:34:37 GMT, "Alan Caplan"
> > <alan.caplan@frontiernet.net> wrote:
> >
> > >Looking for a vertical like I used in Navy Communications. Base
insulator
> > >and heavy walled tubing 32 feet high. Surplus fine.
> > >
> > >Alan K4AVQ/ P40AV
> > >
> >
> > Try the web site for Surplus Sales of Nebraska; maybe give them a
> > call. I have one of their paper catalogs, about 2-3 years old. They
> > list a Collins vertical, 36' high, $149, part num. (ANT) AC-2811.
> >
> > Bob
> > k5qwg
> >
> >
> >
>

2680. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 15:49:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f327644_7@corp.newsgroups.com>
Source record: 111124

Jeffdeham wrote:
> I had exactly the opposite results. It was 2-3 S units better at low
> angles of radiation compared to my low dipole. I've heard other
> experiences like this too. I just wonder if there some part of antenna
> theory that's missing that could explain why that happens. Murphy's
> law, blind luck, who knows. 8-)

The vertically polarized noise in my neighborhood is the real killer
of verticals.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2681. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 16:58:58 UTC
From: Voice In Wilderness <VIW@forest.com>
Message-ID: <mzvYa.30956$ff.11934@fed1read01>
Source record: 111125

In a previous QTH -- wow was this ever true -- the big cross country
hi-tension lines were just behind me and S9++ noise all bands all the time.
When they got wet -- just turned off the radio -- sizzle sizzle -- you could
see a blue arc across the big insulators. Power company washed the
insulators every once and a while and had a low noise environment for about
a month -- then sizzle sizzle again -- clear up into the TV band.

But at my new QTH -- all utilities are below ground and it is fairly quiet.

Not to run out the brag tape -- but my Cushcraft R-7000 vertical using an
AL-80B amp has worked a lot and I mean a lot of DX.
(Brag stats on request -- hi hi)
Radiation seems to be fairly low as it appears to perform better on the long
haul.

Would prefer a beam or dipole at 48 feet -- but not allowed here.
Palm trees hide a vertical very well hi hi.

==========
> The vertically polarized noise in my neighborhood is the real killer
> of verticals.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2682. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 17:25:14 UTC
From: ketalar <F5LCI@wanadoo.fr>
Message-ID: <oprtjpccardah6kb@news.wanadoo.fr>
Source record: 111126

Tnx agn.
I already use coax (on coax input) whose shield is connected to mains
earth.
I'll try some ferrite. I'll have a look in my junk yard, there could be
ferrite sleeve baluns (as described by W2FMI). 73,

On Wed, 6 Aug 2003 07:31:48 -0500 (CDT), Richard Harrison
<richardharrison@webtv.net> wrote:
> Coax could be your bon ami in eliminating the computer display noise if
> used with FM/TV baluns. Ground the shield to the radio. Ferrite sleeves
> around the coax may reduce transport of the interference on the exterior
> of the shield to the radio.

2683. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 17:36:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2435jvk70n2qd5e75p034svab2s7js87u9@4ax.com>
Source record: 111127

On Thu, 07 Aug 2003 19:25:14 +0200, ketalar <F5LCI@wanadoo.fr> wrote:

>
>Tnx agn.
>I already use coax (on coax input) whose shield is connected to mains
>earth.
>I'll try some ferrite. I'll have a look in my junk yard, there could be
>ferrite sleeve baluns (as described by W2FMI). 73,
>
>On Wed, 6 Aug 2003 07:31:48 -0500 (CDT), Richard Harrison
><richardharrison@webtv.net> wrote:
>> Coax could be your bon ami in eliminating the computer display noise if
>> used with FM/TV baluns. Ground the shield to the radio. Ferrite sleeves
>> around the coax may reduce transport of the interference on the exterior
>> of the shield to the radio.

Hi OM,

I was listening to SW when I read your note above. As a test I put
the receiver against the display tube of my computer and didn't hear a
whisper of noise. The receiver's speaker magnet did affect the tube.
In fact, I run the audio through the computer's sound board to play
over my Hi-Fi speakers (three components to do one job). However, the
antenna is about 50 feet away with ferrites protecting it. I also use
the receiver on FM for stations about 10 miles away. No noise there
either.

You may need to put the ferrites on the computer leads (the source of
the noise rather than at the receiver of the noise).

73's
Richard Clark, KB7QHC

2684. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 17:47:26 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <PqKcnd9A-LwlDa-iXTWJhg@comcast.com>
Source record: 111128
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Randy,

Speaking of the horse's mouth! I am concerned that Jason might have too high an expectation of what the noise canceler can do. See if the below is right.

1. It can cancel out the noise from a single stationary noise source that is received via groundwave, and will in general do nothing for atmospheric noise as you would have on 75m.

2. For an automated adjustment method to work, and keep it within his means and time frame, he will have to tune to a frequency where there is no signal present. He should then be able to retune to a differenr frequency within a few KHz, and still have the nulling.

3. Consistent with 2, the receiver's AGC voltage is as good an indication of noise amplitude as any. In fact, it can't be measured AFTER the AGC, as for instance the audio output.

Tam/WB2TT
****
"Randall R. Gawtry" <rgawtry@timewave.com> wrote in message
news:vj3q1bhol1tm9d@corp.supernews.com...
> One of the other people noted that it was important to do a lot of
reading,
> research and analysis of your own - I'll second that!
>
> If you haven't run across it yet, start with the term "Null Steering".
>
> 'nuff said for now,
>
> Randy Gawtry
> Timewave Technology Inc.

2685. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 17:55:20 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Fa-cnVMgrZYJD6-iXTWJkw@comcast.com>
Source record: 111129

"Tom Coates" <tecoates@comcast.net> wrote in message
news:LfKdnWIiTvQ99q-iXTWJhg@comcast.com...
>
> Would 4 inch irrigation tubing be self-supporting at the 32-foot length?
>
> Tom, N3IJ

Probably overkill. If he tops it off with an 8 foot mobile whip, he only need to get to 24 feet. Three 10 foot lengths of telescoping Al tubing would allow for enough overlap.

Tam/WB2TT

2686. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 18:10:13 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <bgu4m6$2tc6$1@news1.tribune.com>
Source record: 111130

The RFI is probably due to the fact that your antenna is so close to the affected equipment. I used to make the bathroom flourescent light go on with my attic dipole.

A trap design will have its current nodes in different places than a simple dipole, but if it is working, the field strength in the house will be the same.

The ARRL antenna book should show you where to tune the traps.

Alternativly:
If your tuner (via balanced line, NOT coax) would not tune the antenna on multi bands, try making it into a loop. Follow around the house with the largest size you can. Just staple the wire to the rafters. Don't worry if your tuner does not have a balanced output, with the loop it won't make much difference. The "balun" in the tuner would just add losses.

My roof has shingles made from Steel Slag, not gravel. I suspect it has a much different RF charectaristic than the stone shingles do.

KA9CAR
John

"Bill" <wbryant@austin.rr.com> wrote in message
news:AstYa.168712$xg5.21576@twister.austin.rr.com...
> Yes, I agree. I have used open wire dipoles and they work great over all
> bands. But, my problem is constrained by wife and housing subdivision
> requirements. So my antenna is confined to the attic. I tried to use a
short
> version of the open wire dipole and it is not loading at all and the RFI
is
> everywhere. So I guess traps are my only option at this point. I just
never
> built one before or had experience with coaxial type traps either. Just
need
> to know where to tune the traps for maximum impedance on the band of
> operation. Your explanation of pruning makes sense.
>
> Thanks for your reply
> 73, Bill
>
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> "WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
> news:bgs4of$s90vf$1@ID-134747.news.uni-berlin.de...
> > When building a Trap dipole you start by building from the inside out.
> > Lets say you want an dipole for 20 and 40. Cut a twenty meter dipole,

> hang
> > it up and adjust it for minimum SWR. Then add the traps and balance of
> the
> > antenna. You will obtain some loading from the coils in the traps so
the
> > 40 meter antenna will be somewhat shorter than you would expect. Prune
> for
> > operation on 40 meters. The problem with traps is that you need a set
for
> > each band you want to work. You can't sneak by on the odd multiple
> > halfwave, the traps might be at a bad place on that 20/40 antenna used
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> > 15. I have a great example of that on a trapped dipole I loaded on 12
to
> > try the band out..
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> > I regret the years wasted with coaxial fed dipoles. Life is much easier
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> > you hang as much wire as you can, as high as you can get it, and feed
with
> > ladder line. I work all 80 through 10 with a 68' (34' a side) dipole
fed
> > with 460 ohm ladder line. For portable use I have 75 feet of AWG#22
> > speaker wire. 34" is split and forms the doublet, the rest is the
> > transmission line. It is usable from 80 to 10 and works great.
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> > a Salty Bear
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> > "Bill" <wbryant@austin.rr.com> wrote in message
> > news:dTeYa.144468$TJ.8443056@twister.austin.rr.com...
> > > Anybody tried to build this trap antenna yet?
> > >
> > > http://www.nerc.com/~jdegood/coaxtrap/
> > > http://members.shaw.ca/ve6yp/
> > > http://members.fortunecity.com/xe1bef/hf-antennas.htm
> > >
> > > Need some help on where to tune the traps for the bands of operation,
> and
> > > pruning the connection wiring. Can this be done with out a major test
> > > equipment investment?
> > >
> > >
> >
> >
>
>

2687. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 19:41:36 UTC
From: Geo <usenet@plus.net>
Message-ID: <20030807204131871+0100@news.btinternet.com>
Source record: 111131

In <LfKdnWIiTvQ99q-iXTWJhg@comcast.com> Tom Coates wrote:
> This looks like a VHF antenna, based on the length of the elements.
> May QST has a similar idea for ham use on page 33. If the 909 is to
> be used for SW, a pair of Hamsticks may be adaptable to a nearby SW
> band, although a loop could be simpler, cheaper and possibly less
> noise-prone.
>
> Would 4 inch irrigation tubing be self-supporting at the 32-foot
> length?
>
> Tom, N3IJ
>
> "Joe Strain" <jstrain1@cfl.rr.com> wrote in message
> news:WRXXa.16793$K4.867859@twister.tampabay.rr.com...
>> Go to Fair Radio and check out their military surplus too, and if
>> anybody can, check out this one and advise on it applicability for
>> use with a ATS 909 http://www.fairradio.com/0mk-12.htm 12'
>> MILITARY MAST KIT $59.95
>>
>> Thanks
>> Yodar
>>
>>
>> ================
>> "Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
>> news:ebhviv87vg7b3tpk6oforub1ob7jeou1da@4ax.com...
>> > On Tue, 05 Aug 2003 02:34:37 GMT, "Alan Caplan"
>> > <alan.caplan@frontiernet.net> wrote:
>> >
>> > >Looking for a vertical like I used in Navy Communications. Base
> insulator
>> > >and heavy walled tubing 32 feet high. Surplus fine.
>> > >
>> > >Alan K4AVQ/ P40AV
>> > >
>> >
>> > Try the web site for Surplus Sales of Nebraska; maybe give them a
>> > call. I have one of their paper catalogs, about 2-3 years old. They
>> > list a Collins vertical, 36' high, $149, part num. (ANT) AC-2811.
>> >
>> > Bob
>> > k5qwg
>> >
>> >

>> >
>>
>
>
>

This look like the beastie your after.
http://www.valcom-guelph.com/highfreq/as3772.html

George GM8VAM

2688. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 19:52:48 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vj5bivbto82045@corp.supernews.com>
Source record: 111132

Just to add to the confusion........

I'm on a hill in the country.
The 75S-3B S-meter usually rests on zero.
It's quiet.
I have a SteppIR vertical on a fence post.
The fence is 4000 feet long; steel posts.

I also have a resonant 40 meter dipole favoring the South Pacific.
For 20 I have a SteppIR 3 el Yagi at 70 feet over average terrain.

During the day the 40M traffic nets are useless on the vertical.

At 3AM the ZL's and VK's come in great on the vertical and I CAN'T HEAR THEM
on the dipole.

When I can get a word in I check in to the Spiderwebnet mornings on 14.347.
Comparing the vertical and the beam on 20 as the sun comes up while folks
from VT to Brazil talk is fun.
Try stereo; one polarization in one ear, the other in the other ear.

Fascinating.
H.
NQ5H

"Voice In Wilderness" <VIW@forest.com> wrote in message
news:mzvYa.30956$ff.11934@fed1read01...
> In a previous QTH -- wow was this ever true -- the big cross country
> hi-tension lines were just behind me and S9++ noise all bands all the
time.
> When they got wet -- just turned off the radio -- sizzle sizzle -- you
could
> see a blue arc across the big insulators. Power company washed the
> insulators every once and a while and had a low noise environment for
about
> a month -- then sizzle sizzle again -- clear up into the TV band.
>
> But at my new QTH -- all utilities are below ground and it is fairly
quiet.
>
> Not to run out the brag tape -- but my Cushcraft R-7000 vertical using an
> AL-80B amp has worked a lot and I mean a lot of DX.
> (Brag stats on request -- hi hi)
> Radiation seems to be fairly low as it appears to perform better on the
long
> haul.

>
> Would prefer a beam or dipole at 48 feet -- but not allowed here.
> Palm trees hide a vertical very well hi hi.
>
> ====================================
> >
> > The vertically polarized noise in my neighborhood is the real killer
> > of verticals.
> > --
> > 73, Cecil http://www.qsl.net/w5dxp
> >
> >
> >
> > -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> > http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> > -----== Over 80,000 Newsgroups - 16 Different Servers! =-----
>
>

2689. New amateur radio discussion forums

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 20:08:28 UTC
From: Shane <no@spam.com>
Message-ID: <UkyYa.2536$zB6.145754@newsfep2-gui.server.ntli.net>
Source record: 111133

Please take a moment to visit Hamchat Forums at
http://www.hamchat.futurewebhosting.co.uk/phpBB2/portal.php
A amateur radio discussion forum that needs new members to help get it off
to a good start.

Thanks

2690. HELP:Daiwa CN-410 M

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 20:23:38 UTC
From: Zeca <peixoto@ispwest.com>
Message-ID: <3F32B549.A8BD8954@ispwest.com>
Source record: 111135

Hi all,

Picked up a 2nd hand Daiwa CN-410m crossed needle SWR
meter the other day.
I want to re-calabrate it and check it out.
Can anyone help with a circuit diagram or know where I
can get one from?
Maybe the original manual had it in?

Tnx and 73

CMP

2691. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 20:25:30 UTC
From: yankneck696@aol.com
Message-ID: <a8791500.0308071225.13da2356@posting.google.com>
Source record: 111134

Geo <usenet@plus.net> wrote in message
news:<20030807121610320+0100@news.btinternet.com>...
> Has anyone bought/ used/ worked this antenna?
> http://www.g3tpw.ukgateway.net/index.html
>
> I have a very small QTH, with not much room for HF antennas, but
> with lots of scope for a good bit of TVI to the neighbors, so a
> vert may not be the best solution.
>
> The website is a bit sparse on tech details.
>
> Can anyone comment on this one?
>
> 73
> George...

Looks good to me. I might even try to build one, myself.
In theory, it should work, but I think that there will be a small null
where the ends come together, unless it's just a loop. Let the
"Experts" argue that matter. If you think it will suit your QTH, go
for it.

KB1DQX
Ed

2692. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 20:40:48 UTC
From: ? <Martin@NOSPAM.g1gyc.demon.co.uk>
Message-ID: <bgueac$ir3$1$8300dec7@news.demon.co.uk>
Source record: 111137

"Geo" <usenet@plus.net> wrote in message
news:20030807121610320+0100@news.btinternet.com...
> Has anyone bought/ used/ worked this antenna?
> http://www.g3tpw.ukgateway.net/index.html
>
> I have a very small QTH, with not much room for HF antennas, but
> with lots of scope for a good bit of TVI to the neighbors, so a
> vert may not be the best solution.
>
> The website is a bit sparse on tech details.
>
> Can anyone comment on this one?
>
> 73
> George...

I have used one at our radio club,
Not a bad aerial - in fact better performance than I though it
would be. it is basically a nest of dipoles bent round to form
a square. the ends DO NOT meet / touch and the feed point
has a balun on it.

Have fun TTFN Martin

2693. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 20:51:43 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F32BBA5.B4DAF6CC@shaw.ca>
Source record: 111136

Geo wrote:
>
> Has anyone bought/ used/ worked this antenna?
> http://www.g3tpw.ukgateway.net/index.html
>
> I have a very small QTH, with not much room for HF antennas, but
> with lots of scope for a good bit of TVI to the neighbors, so a
> vert may not be the best solution.
>
> The website is a bit sparse on tech details.
>
> Can anyone comment on this one?
>
> 73
> George...

I had a chum who built the same thing but for 10 meters only. It worked
well. I have no reason to think it wouldn't work in a multiband version.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2694. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 21:29:49 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f32c5e1_4@news1.prserv.net>
Source record: 111138

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:19098-3F3070A0-50@storefull-2312.public.lawson.webtv.net...
> Crazy George wrote:
> "---do a bibliographic search of Engineering Index, or Scientific
> Abstracts, or whatever that school has access to."
>
> Excellent advice from George. Motorola`s Extender usually included a
> switch on the radio control head to enable or defeat Extender operation.
> The only reason I can think of to defeat Extender operation is to
> demonstrate its effectiveness, which can be compelling.

Richard:

One of the problems with the first production Extenders was no limit on the
total duration blanking. Since the individual pulse length was fixed, it
was possible to get 100% blanking on a readable signal, with the right noise
pulse length and rate. Motorola figured this out about the same time we
did, and quietly modified the circuitry to limit total blanking percentage.
On the other hand, the salesmen with one noisy spark plug in their demo
vehicles loved the switch. But, that's been 40+ years ago, and the details
are hazy.

--
Crazy George
Remove NO and SPAM from return address
<snip>

> Best regards, Richard Harrison, KB5WZI
>

2695. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 22:03:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bguic3$97g$1@sparta.btinternet.com>
Source record: 111139

> > I'd rather wind a coil, "oatmeal tube carton"? and find a good
> > variable cap, and make a simple L network to feed a random wire.
==========

What are the dimensions of an "oatmeal tube carton ?

Are they made of plastic or cardboard?

Here on Euro-side, toilet paper tubes and aligator (crocodile) clips have been in vogue for many, many years.

Incidentally, my father, a survivor of the trenches, was probably the last person to make his own variable, air-spaced tuning condensers to be mounted behind ebonite panels. He drilled panel holes in front of the kitchen coal fire with an red-hot iron fire poker. All wiring was done with bare square brass wire. All corners were at angles of exacly 90-degrees. His radios were Works of Art, appropriately illuminated with a pair of bright-emitter valves protruding from the top of the cabinet. Circa 1922-30.

So began my early education.

Reg G4FGQ.

2696. Moonraker MTD-3 Dipole is it any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 22:06:04 UTC
From: Andy <dx90@blueyonder.co.uk>
Message-ID: <i3AYa.1998$DO4.157@news-binary.blueyonder.co.uk>
Source record: 111140

Hi All!

Just wondering if anyone has used the Moonraker MTD-3 Trapped Wire Dipole 40-80-160 mtrs. I am thinking of buying one but cannot find any reviews on it.

73 Andy - M1BEP

2697. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 22:28:58 UTC
From: Precious Pup <barking@wrongtree.org>
Message-ID: <3F32D2AA.9DB5E4AA@wrongtree.org>
Source record: 111142
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

"Dick Carroll;" wrote:
>
> Tweetldee wrote:
>
> >
> > Allow me to infuse a different idea. Think about noise as a fairly
> > broadband phenomenon. The same atmospheric noise that you hear on 21.500
> > Mhz will also be heard on 21.510 Mhz. Consider the possibility of biulding
> > two identical receivers, the main receiver tuned to the desired reception
> > frequency, the other tuned just a few Khz away, but out of the received
> > signal's bandwidth. Then, you detect the noise on the second receiver,
> > invert it, and sum it into the first receiver's signal chain. This concept
> > is used in ultra-low noise, high sensitivity deep space receivers to almost
> > totally eliminate noise in the received signal.
>
> It's also the same scheme widely used for years in VHF FM mobile receivers.
> There is a completly separate receiver that receives the noise which is inverted and
> applied out of phase to the signal channel to cancel the noise pulses received through
the
> receiver. The scheme obviously works much better with pulse type noise.

It even works for _on-channel_ jamming TX'ers off in another direction from the desired
signal (cable co's use
the technique). Separate directional antennas are used for the desired and the undesired
signals. The
undesired signal (jammer) is gain adjusted and phase shifted and then summed into the
"main" receiver signal
path at 180 degrees (and equal amplitude) from the same jammer entering into the main
antenna/rx'er path. The
obvious null for the undesired signal occurs. Nulling of the desired signal is highly
improbable given the
directional aspects of the antennas. The sum can occur in the rx'er front end. Yes, this is
signal
processing down at the microvolt level. One problem is tuning drift.

2698. Help needed with ARX220B

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 22:29:07 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030807182907.06382.00000202@mb-m02.aol.com>
Source record: 111141

Hello all. I recently bought an Icom IC-38A and a Cushcraft Ringo II ARX-220B antenna. When the previous owner was taking down the antenna, he accidentally snapped one of the radials at the thread. I put the antenna up without the extra piece of coax and the radials and the SWR is just fine. I can even hear a repeater about 50 miles north of me with the antenna only 10 feet off of the ground.

Will I benefit by having the radials? I was thinking of contacting Cushcraft to see what replacement radials would cost.

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

2699. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 23:08:25 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308071508.799e7bdb@posting.google.com>
Source record: 111143

"Alan Caplan" <alan.caplan@frontiernet.net> wrote in message
news:<1JEXa.27009$BF1.15390@news02.roc.ny>...
> Looking for a vertical like I used in Navy Communications. Base insulator
> and heavy walled tubing 32 feet high. Surplus fine.
>
> Alan K4AVQ/ P40AV

Alan,
Since you are going to put an insulator at the bottom I am
assuming that the 32 feet is for the antenna alone.

Crappie fishing pole on E bay/fishing store $25 for 20 foot
telescopic form

Aluminum tape with adhesive backing approx $6 from hardware store.

2 telescopic aluminum tubes from hardware store $17.

One coke bottle from store.

Assemble to length and stick aluminum tape to it end to end,
Rub down to remove air bubbles.

Drink coke.

Place coke bottle into hole and surround with concrete mix.

Place antenna into coke bottle.

2700. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 23:24:02 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <mcBYa.91575$o%2.41328@sccrnsc02>
Source record: 111144
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Tarmo Tammaru wrote:

> Randy,
>
> Speaking of the horse's mouth! I am concerned that Jason might have too high
> an expectation of what the noise canceler can do. See if the below is right.
>
> 1. It can cancel out the noise from a single stationary noise source that is
> received via groundwave, and will in general do nothing for atmospheric
> noise as you would have on 75m.

Correct!

>
> 2. For an automated adjustment method to work, and keep it within his means
> and time frame, he will have to tune to a frequency where there is no signal
> present. He should then be able to retune to a differenr frequency within a
> few KHz, and still have the nulling.

Correct!

>
> 3. Consistent with 2, the receiver's AGC voltage is as good an indication of
> noise amplitude as any. In fact, it can't be measured AFTER the AGC, as for
> instance the audio output.

Correct!

>
> Tam/WB2TT
> **********
> "Randall R. Gawtry" <rgawtry@timewave.com> wrote in message
> news:vj3q1bhol1tm9d@corp.supernews.com...
>
>>One of the other people noted that it was important to do a lot of
>
> reading,
>
>>research and analysis of your own - I'll second that!
>>
>> If you haven't run across it yet, start with the term "Null Steering".
>>
>>'nuff said for now,
>>
>>Randy Gawtry

>>Timewave Technology Inc.
>
>
>

2701. Re: HELP:Daiwa CN-410 M

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-07 23:27:36 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <IfBYa.91586$o%2.40755@sccrnsc02>
Source record: 111145

Mine came fully calibrated and remains calibrated after 6 years. There
was no real manual with it.

Why do you think it yours needs recalibration.

Deacon Dave, W1MCE

Zeca wrote:

> Hi all,
>
> Picked up a 2nd hand Daiwa CN-410m crossed needle SWR
> meter the other day.
> I want to re-calabrate it and check it out.
> Can anyone help with a circuit diagram or know where I
> can get one from?
> Maybe the original manual had it in?
>
> Tnx and 73
>
> CMP
>

2702. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 00:03:17 UTC
From: funkbastler <funkbastler@yahoo.com>
Message-ID: <o2o5jvgukf2a01d1vdakvmgq7clul9opch@4ax.com>
Source record: 111146

On Wed, 06 Aug 2003 21:59:37 GMT, "Bill" <wbryant@austin.rr.com>
wrote:

>Anybody tried to build this trap antenna yet?
>
>http://www.nerc.com/~jdegood/coaxtrap/
>http://members.shaw.ca/ve6yp/
>http://members.fortunecity.com/xe1bef/hf-antennas.htm
>
>Need some help on where to tune the traps for the bands of operation, and
>pruning the connection wiring. Can this be done with out a major test
>equipment investment?

I love those coax traps. About 20 years ago, I spent several hours
with a sweep generator and scalar network analyzer building a set
of traps for 40/20/15/10 meters. Then, I spent almost all day putting
up the antenna. The process is basically "put up one section, check
swr, drop antenna, trim antenna, raise it back up, and repeat until
the SWR is acceptable" (typical dipole scenario). Then, however, you
add a set of traps and the next section, and repeat the entire process
for the next lower (in frequency) band. Keep repeating till you have
all bands covered. Got a nice sunburn and a decent antenna out of the
deal.

The traps can be fairly light weight and compact - I used RG-174 and
wound 'em on empty pill bottles. For test equipment, a plain signal
generator and oscilloscope will suffice, or maybe even just a grid-dip
meter.... Heck - I even got so involved with coax traps that I wrote
a computer program to characterize the things and tell me how many
turns of what kind of coax on what size form would be resonant at
my frequency of interest.

Since that time, I've discovered how pointless it was. Like WB3FUP
suggests, just put up as much wire as you can, as high as you can.
Right now, I'm using a 130 foot inverted L, and it works every bit
as good as the trap dipole did (if not better) from 160 through
10 meters - and it was a *lot* easier to put up. The only drawback
is that you gotta have a tuner.

-fb-

2703. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 01:30:48 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030807213048.29674.00000140@mb-m14.aol.com>
Source record: 111147

>
>The vertically polarized noise in my neighborhood is the real killer
>of verticals.
>--
>73, Cecil http://www.qsl.net/w5dxp
>
>
>

Hmmm,
all the noisey appliances in the neighborhood are vertically polarized?
Trolling for another argument "threat" :-?

Yuri

2704. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 02:00:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj6123kftrsuc1@corp.supernews.com>
Source record: 111148

I've built a number of antennas with coax traps made from both RG-174 and RG-58. There are a couple of ways to connect the traps, with one (sort of cross-connecting the ends) giving a more favorable L/C ratio than the other. But after measuring the trap L, C, and Q and doing some EZNEC modeling, I discovered that it's often hard, even with the RG-58 versions, to get low loss on all bands the antenna is intended for. The loss might be low on the band the trap "traps", but relatively high (typically a couple of dB) on a lower band. Or vice-versa, depending on the combination of bands that the antenna is for. It depends on the combination of bands that the antenna is for -- some are ok, some not so good. The fact is that the effective inductor Q of coax traps made with RG-58 or smaller coax is mediocre.

For a lot of applications, a couple of dB is an acceptable trade for the simplicity of coax traps, but for some it's not. If it's not, I'd recommend doing some modeling, or careful comparison to a non-trapped antenna.

One other word of advice is to make sure you weatherproof the traps in a way that prevents any water from getting between the turns. Water between the turns can increase trap loss substantially.

Roy Lewallen, W7EL

funkbastler wrote:
> On Wed, 06 Aug 2003 21:59:37 GMT, "Bill" <wbryant@austin.rr.com>
> wrote:
>
>
>>Anybody tried to build this trap antenna yet?
>>
>>http://www.nerc.com/~jdegood/coaxtrap/
>>http://members.shaw.ca/ve6yp/
>>http://members.fortunecity.com/xe1bef/hf-antennas.htm
>>
>>Need some help on where to tune the traps for the bands of operation, and
>>pruning the connection wiring. Can this be done with out a major test
>>equipment investment?
>
>
> I love those coax traps. About 20 years ago, I spent several hours
> with a sweep generator and scalar network analyzer building a set
> of traps for 40/20/15/10 meters. Then, I spent almost all day putting
> up the antenna. The process is basically "put up one section, check
> swr, drop antenna, trim antenna, raise it back up, and repeat until

> the SWR is acceptable" (typical dipole scenario). Then, however, you
> add a set of traps and the next section, and repeat the entire process
> for the next lower (in frequency) band. Keep repeating till you have
> all bands covered. Got a nice sunburn and a decent antenna out of the
> deal.
>
> The traps can be fairly light weight and compact - I used RG-174 and
> wound 'em on empty pill bottles. For test equipment, a plain signal
> generator and oscilloscope will suffice, or maybe even just a grid-dip
> meter.... Heck - I even got so involved with coax traps that I wrote
> a computer program to characterize the things and tell me how many
> turns of what kind of coax on what size form would be resonant at
> my frequency of interest.
>
> Since that time, I've discovered how pointless it was. Like WB3FUP
> suggests, just put up as much wire as you can, as high as you can.
> Right now, I'm using a 130 foot inverted L, and it works every bit
> as good as the trap dipole did (if not better) from 160 through
> 10 meters - and it was a *lot* easier to put up. The only drawback
> is that you gotta have a tuner.
>
> -fb-
>
>

2705. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 02:12:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f330836$1_5@corp.newsgroups.com>
Source record: 111149

Yuri Blanarovich wrote:
>>The vertically polarized noise in my neighborhood is the real killer
>>of verticals.

> all the noisey appliances in the neighborhood are vertically polarized?

A very large power transformer mounted on a pole at the edge of my
property has a 35 foot ground wire running down the pole about 100 ft
from my vertical. I suspect that is the source of the vertically
polarized noise.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2706. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 02:42:35 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F330E1B.8AE77C4B@cwis.net>
Source record: 111150

Geo,
What's a 'confined electrical field'?
'Doc

2707. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 03:07:55 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030807230755.07745.00000950@mb-m14.aol.com>
Source record: 111152

>
>> all the noisey appliances in the neighborhood are vertically polarized?
>
>A very large power transformer mounted on a pole at the edge of my
>property has a 35 foot ground wire running down the pole about 100 ft
>from my vertical. I suspect that is the source of the vertically
>polarized noise.
>--
>73, Cecil http://www.qsl.net/w5dxp
>
>

and no horizontal wires attached to it?
Is transformer producing noise? Or bad connections, arcing?
Mabee vertical antenna due to its pattern is "seeing" more noise than your
ladder fed wunderdipole?

I think there is a major misconception that verticals are more sensitive to
noise because the noise is "vertically polarized". Man made, appliance or
otherwise produced noise is "all kinds" polarized. It is the antenna's location
and radiation pattern that determines the amount of noise or S/N pick up.

Yuri

2708. Re: Sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 03:41:38 UTC
From: dxlover <dxlover@adelphia.net>
Message-ID: <SZEYa.10985$jg.3307448@news1.news.adelphia.net>
Source record: 111153

>>>I am considering a sloper antenna. How will attaching it at the low end affect the reception/ transmission? I have a 75' oak for one point 78 ft. from the radio room, but only have a 20' mast outside the radio room. Other suggestions appreciated>>>

I don't know about the transmitting part, but I use an Alpha Delta DX sloper and it is a rock, what a great antenna. I run both my Hammarlunds off it. Mine is mounted rather high, but that's just me.

Get one, you'll be glad you did, really. :-)

--
~*~*~Monitoring the Spectrum~*~*~
GO BEARCATS
~*~*~Oct.15th Payback Begins~*~*~*~
~~~Hammarlund129X/140X~~~
Heathkit Q Multiplier
<><><><><><GE P-780<><><><><><><><><
~~~

2709. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 03:56:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj67r3fttfib63@corp.supernews.com>
Source record: 111154

One thing to keep in mind is that vertically polarized waves can
propagate by ground wave, while horizontally polarized waves can't.

Roy Lewallen, W7EL

Yuri Blanarovich wrote:
>>>all the noisey appliances in the neighborhood are vertically polarized?
>>
>>A very large power transformer mounted on a pole at the edge of my
>>property has a 35 foot ground wire running down the pole about 100 ft
>
>>from my vertical. I suspect that is the source of the vertically
>
>>polarized noise.
>>--
>>73, Cecil http://www.qsl.net/w5dxp
>>
>>
>
>
> and no horizontal wires attached to it?
> Is transformer producing noise? Or bad connections, arcing?
> Mabee vertical antenna due to its pattern is "seeing" more noise than your
> ladder fed wunderdipole?
>
> I think there is a major misconception that verticals are more sensitive to
> noise because the noise is "vertically polarized". Man made, appliance or
> otherwise produced noise is "all kinds" polarized. It is the antenna's location
> and radiation pattern that determines the amount of noise or S/N pick up.
>
> Yuri

2710. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 05:29:19 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <PyGYa.93552$o%2.42466@sccrnsc02>
Source record: 111155

Probably the concrete reinforcing.

"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
news:70e7jv8753tqgdcpnno03qsfken5l9l1up@4ax.com...
> On 7 Aug 2003 16:08:25 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
> wrote:
>

> What keeps the 32' mast from breaking out of the Coke bottle in the
> first wind? (I don't think they construct Coke bottles like they did
> in the old days with the thick, green glass.)
>
> Bob
> k5qwg
>

2711. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 05:29:46 UTC
From: dplatt@radagast.org
Message-ID: <vj6daab4eu32bd@corp.supernews.com>
Source record: 111156

In article <20030807230755.07745.00000950@mb-m14.aol.com>,
Yuri Blanarovich <k3bu@aol.comnoSaddam> wrote:

>I think there is a major misconception that verticals are more sensitive to
>noise because the noise is "vertically polarized". Man made, appliance or
>otherwise produced noise is "all kinds" polarized. It is the antenna's location
>and radiation pattern that determines the amount of noise or S/N pick up.

Well... yes and no (I think).

As I understand it, ground-wave / surface-wave propagation occurs for
vertically-polarized signals (or signal components), but not for
horizontally-polarized signals (or components). Even if manmade noise
is polarized in all planes with equal (or randomly distributed)
polarization senses, only the vertically polarized portion of it will
travel via groundwave propagation.

So, I suspect that the noise-proneness of vertical HF antennas
compared to horizontal dipoles, probably results from a "double
whammy". The horizontal antennas aren't exposed to anywhere near as
much energy propagating via groundwave (because horizontally-polarized
noise doesn't travel well in that mode), and they aren't as sensitive
to it because they often have fairly high radiation angles with a
substantial null towards the horizon.

The vertical antennas are hit with more noise energy, and due to their
low radiation angle they're pretty good at picking it up.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2712. Re: tuning a window frame

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 05:49:52 UTC
From: ketalar <F5LCI@wanadoo.fr>
Message-ID: <oprtkntejhdah6kb@news.wanadoo.fr>
Source record: 111157

Tnx fer info.
Different setup here : the antenna is only 3 to 5 feet over the computer,
which could explain the hash...
I have the same problem at home, where the TR-7 is just behind the CRT.
Ferrite over all leads helps only a little. Last nite I fed the window
frame in the middle and, yes, the S-meter jumped 2 points up !
To avoid hash I had to put the coax away from the screen.
Best regards to all,

On Thu, 07 Aug 2003 17:36:58 GMT, Richard Clark <kb7qhc@comcast.net> wrote:
> ...the antenna is about 50 feet away with ferrites protecting it. I also
> use
> the receiver on FM for stations about 10 miles away. No noise there
> either.
>

2713. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 06:25:02 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308072225.595fc694@posting.google.com>
Source record: 111158

Roy Lewallen <w7el@eznec.com> wrote in message news:<vj1jmeihva0m14@corp.supernews.com>...
> Mark Keith wrote:
> > . . .
> > Also, I suspect excess loss if the noise and signals drop compared to
> > any other antenna. If the coax is not bad, old or waterlogged, or thin
> > stuff like rg-58, then I'd suspect excess loss in the autotuner. . . .
>
> Out of curiosity, just how much loss do you think "thin stuff like
> RG-58", say 50 feet of it, has on 20 meters?
>
> Roy Lewallen, W7EL

Normally it shouldn't be too much. But if the "thin" stuff is old, or
has been damaged , it might be more than usual. MK

2714. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 06:46:28 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308072246.3927a895@posting.google.com>
Source record: 111159

fantbb@yahoo.com (Jeffdeham) wrote in message
news:<c2a65514.0308070638.4d3c0861@posting.google.com>...
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f3076d0_3@corp.newsgroups.com>...
> > Kristinn Andersen wrote:
> > > Any comments, anyone, before I remove the vertical and turn to another
> > > design?
> >
> > I spent considerable time and effort erecting a 33ft vertical 40m
> > antenna with 8 elevated radials at 20ft. Average signal strengths were
> > about 2 S-units below a dipole and the noise level was about 2 S-units
> > higher than the dipole. At my QTH, it was a dog.
>
> I had exactly the opposite results. It was 2-3 S units better at low
> angles of radiation compared to my low dipole. I've heard other
> experiences like this too. I just wonder if there some part of antenna
> theory that's missing that could explain why that happens. Murphy's
> law, blind luck, who knows. 8-)
>
> 73!
>
> Jeff

It's simple. Cecil did not use enough radials for the low height he
mounted the vertical. Also, he didn't use it to work much long haul or
dx, which is what the vertical is best for. His antenna was just a bit
higher than an 1/8 wave. For an antenna that high to equal a GP at 1/2
wave with 4 radials, he really needed nearly 40-50-60 radials. A 1/2
wave high GP with 4 radials = a 1/4 wave high GP with 8-10 radials = a
1/8 wave high GP with 50-60 radials = a ground mount with 120 radials.
They all have the same appx ground loss. Now look at Cecils GP at a
bit over 1/8 wave and only 8 radials. Thats not much better than a
ground mount with 16-20 radials. No one will ever confuse a vertical
with 120 radials against one with appx 16-20 in the real world. I ran
a 40m GP at 36 ft, which is a bit over a 1/4 wave up. I used only 4
radials, but my antenna was appx equal to a ground mount with about 60
radials. My ground cdx are better than his also, so if anything he
should need more radials than I did. To me, his results are about as
to be expected. Heck, on 40m at night, my mobile vertical antenna will
outdo my home dipole at 42 ft to anyone at least 1000 miles away. I've
tested it many times. And my mobile antenna was a peanut whistle
compared to the full size GP I ran here at the house. To VK, Japan,
EU, etc, my GP would always be 3-4 S units better than my dipole at 36
ft. Heck, I'd give Tokyo a 20 db over 9 window rattling when I ran
that GP and a full KW. My dipole would be lucky to be S 8-9 with the

same power. MK

2715. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 06:57:53 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308072257.25132105@posting.google.com>
Source record: 111160

"Alan Caplan" <alan.caplan@frontiernet.net> wrote in message
news:<1JEXa.27009$BF1.15390@news02.roc.ny>...
> Looking for a vertical like I used in Navy Communications. Base insulator
> and heavy walled tubing 32 feet high. Surplus fine.
>
> Alan K4AVQ/ P40AV

I made one from an old heavy duty 5/8 CB antenna, which by itself was
appx 19-20 ft tall. I then added inner wall tubing to the lower pieces
to make it stronger, and then added thinner tubing to extend to about
29-30 ft. The last piece to extend to 32 ft was a automotive whip with
a small ball on top. Worked well, and was totally self supporting. I
had it mounted at 36 ft at the base of the antenna.
MK

2716. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 06:58:51 UTC
From: rgawtry@timewave.com
Message-ID: <vj6ihgflnd3m09@corp.supernews.com>
Source record: 111161
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Tam,

Dave Schrader gave you the right short answers to your questions in a parallel post to this one; however, question number 2 is a bit constraining. Consider the fact that there are some substantial variations of the ANC-4 and MFJ noise cancellers that others have built as well as few that are floating around in my head and, I am certain, a lot of other peoples' heads. Nobody has mentioned these on this thread yet. Also think about the fact that armed with the same information and skill sets, engineers tend to simultaneously invent the same thing about the same time. Jason seems to have a pretty good tool box and a good understanding of how to add tools to it - witness this thead and his last project. So he may figure out a way to completely avoid a situation like the one you describe, maybe even costing less and being quicker to develop! If he cannot for some reason, then the challenge is to figure out a quick and easy way to do something like what you describe. The only problem is finding a different frequency a few kHz away with no signal present - especially on the ham bands! So maybe a little more reaching question is how does he find a better way to null a noise canceller? Of course, having said all that, sometimes the best engineering approach is brute force - do the obvious the way you already understand and get it shipped (or turned in to the instructor)!

Randy Gawtry, K0CBH
Timewave Technolgy Inc.

In article <PqKcnd9A-LwlDa-iXTWJhg@comcast.com>, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:
>Randy,
>
>Speaking of the horse's mouth! I am concerned that Jason might have too high
>an expectation of what the noise canceler can do. See if the below is right.
>
>1. It can cancel out the noise from a single stationary noise source that is
>received via groundwave, and will in general do nothing for atmospheric
>noise as you would have on 75m.
>
>2. For an automated adjustment method to work, and keep it within his means
>and time frame, he will have to tune to a frequency where there is no signal
>present. He should then be able to retune to a differenr frequency within a
>few KHz, and still have the nulling.
>
>3. Consistent with 2, the receiver's AGC voltage is as good an indication of
>noise amplitude as any. In fact, it can't be measured AFTER the AGC, as for
>instance the audio output.

>
>Tam/WB2TT
>**********
>"Randall R. Gawtry" <rgawtry@timewave.com> wrote in message
>news:vj3q1bhol1tm9d@corp.supernews.com...
>> One of the other people noted that it was important to do a lot of
>reading,
>> research and analysis of your own - I'll second that!
>>
>> If you haven't run across it yet, start with the term "Null Steering".
>>
>> 'nuff said for now,
>>
>> Randy Gawtry
>> Timewave Technology Inc.
>
>

2717. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 07:29:01 UTC
From: Tom <somebody@nOpam.com>
Message-ID: <3F33513D.7FF1BAC5@nOpam.com>
Source record: 111163
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design,sci.electronics

Tweetldee wrote:

> "Jason Hsu" <jason_hsu@my-deja.com> wrote in message
> news:f7d9a152.0308051412.54d4c913@posting.google.com...
> > THE BIG QUESTION: How do you measure the audio noise level in a
> > receiver? Does anyone here know of any circuits that show the overall
> > audio noise level?
> >
> > Let me tell you what this is all about.
> >
> > SIDE NOTE: Thanks again to those of you who helped me with the
> > SWR/wattmeter project I worked on last semester. This project taught
> > me more about ferrite cores, op amps, and diodes than ANY class
> > possibly could. I learned about stray capacitance and what rails
> > mean. I also learned that not all 1N34A diodes are alike.
> >
> > In this coming semester, I will be working on an even more ambitious
> > project - an automatic noise canceller for 160m to 10m. It will
> > definitely be a control system, and it may even use DSP. The device
> > will also require a motor for automatically adjusting the controls.
> > The idea is to design and build an automatic version of the Timewave
> > ANC-4 or the MFJ-1025/1026 RF noise cancellers.
> >
> > The ANC-4 and MFJ-1025/1026 are manual devices. There are automatic
> > noise cancellation devices, but their adjustments are at the audio
> > level rather than the RF level.
> >
> > The back panel of my device will contain:
> > 1. Connector for the signal antenna
> > 2. Connector for the transceiver
> > 3. Connector for the noise antenna
> > 4. DC power connector
> >
> > The front panel of my device will contain:
> > 1. Power switch and the obligatory idiot light to show that the power
> > is on
> > 2. 2 audio connectors: one connects to the transceiver, and the other
> > connects to an external speaker
> > 3. Frequency range control for choosing the inductance values, as the
> > proper inductance values in the RF noise cancelling circuit varies
> > with frequency
> > 4. Phase range knob so that the phase shifter can cover all 360
> > degrees

> > 5. Manual noise phase knob
> > 6. Manual noise gain knob
> > 7. LED display to show the noise level
> > 8. Noise phase adjustment push-button: Pressing this button activates
> > the control system to adjust the phase shift of the noise.
> > 9. Noise gain adjustment button: Pressing this button activates the
> > control system to adjust the gain of the noise.
> >
> > Other features:
> > 1. I need to design my automatic noise canceller so that parts won't
> > blow up if I transmit 100W through it. This probably requires some
> > type of automatic bypass circuitry.
> > 2. Transmitted power must not reach the noise antenna (at least not
> > without a great deal of attenuation)
> > 3. It also needs a low insertion loss.
> > 4. A preamplifier would be desirable.
> >
> > How it would work:
> > 1. You manually turn the phase and gain controls to the minimum
> > settings. (Or I could put in a reset button to do that. No, that
> > would add too much complexity to the circuit.)
> > 2. You select the band using the band inductance switch.
> > 3. You move the phase polarity switch to the negative setting. If
> > the noise cancellation procedure does not work, it probably means the
> > opposite setting is required.
> > 4. Press the noise gain adjustment button. The device adjusts the
> > noise gain until a change in the signal level (or the S meter) is just
> > noted. (Some type of derivative function would come into play.)
> > 5. Press the noise phase adjustment button. The device adjusts the
> > noise phase shift so as to produce a null in the signal level (or the
> > S meter).
> > 6. Steps 4 and 5 could be repeated to make further adjustments.
> > There might be away to activate the control system with just one
> > button.
> >
> > Does anyone know of circuits that measure audio noise? Making the RF
> > noise canceller automatic requires an audio circuit to monitor the
> > noise level. This noise level needs to be converted into a large DC
> > voltage, which feeds the motors that turn the variable capacitor and
> > potentiometer.
> >
> > Jason Hsu, AG4DG
> > usenet@@@@jasonhsu.com
>
> Allow me to infuse a different idea. Think about noise as a fairly
> broadband phenomenon. The same atmospheric noise that you hear on 21.500
> Mhz will also be heard on 21.510 Mhz. Consider the possibility of biulding
> two identical receivers, the main receiver tuned to the desired reception
> frequency, the other tuned just a few Khz away, but out of the received
> signal's bandwidth. Then, you detect the noise on the second receiver,

> invert it, and sum it into the first receiver's signal chain.

Hmmm.... surely the noise will be phase shifted and altered in amplitude by a time-varying transfer function?You will need to estimate this first.

Tom

2718. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 07:35:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj6kmbl6a3taac@corp.supernews.com>
Source record: 111162

Well, 50 feet of RG-58 has about 3/4 dB loss at 14 MHz. And when it's old. . . I've got RG-58 that's well over 20 years old, and can't measure the difference in loss between it and new cable. If it's damaged, it might create an impedance bump, which you might or might not notice. But that's true of larger diameter cable, too.

I'm bemused to find that today's hams have somehow gotten convinced they all need BIG cable for a BIG signal. Maybe they've been listening to the same ads that sell people on monster audio cables and SUVs. But I sure hate to see this misleading concept being passed along to newcomers. They'll fall for the ads soon enough without help.

Roy Lewallen, W7EL

Mark Keith wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vj1jmeihva0m14@corp.supernews.com>...
>
>>Mark Keith wrote:
>>
>>>. . .
>>>Also, I suspect excess loss if the noise and signals drop compared to
>>>any other antenna. If the coax is not bad, old or waterlogged, or thin
>>>stuff like rg-58, then I'd suspect excess loss in the autotuner. . . .
>>
>>Out of curiosity, just how much loss do you think "thin stuff like
>>RG-58", say 50 feet of it, has on 20 meters?
>>
>>Roy Lewallen, W7EL
>
>
> Normally it shouldn't be too much. But if the "thin" stuff is old, or
> has been damaged , it might be more than usual. MK

2719. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 08:29:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3360a7_6@corp.newsgroups.com>
Source record: 111164

Yuri Blanarovich wrote:
> I think there is a major misconception that verticals are more sensitive to
> noise because the noise is "vertically polarized". Man made, appliance or
> otherwise produced noise is "all kinds" polarized. It is the antenna's location
> and radiation pattern that determines the amount of noise or S/N pick up.

I'm just reporting what conditions exist at my QTH. There is approximately
two S-units higher noise on the vertical than on the horizontal. After weeks
of A/B comparisons, there was never a time or signal where the vertical appreciably
beat the horizontal. There were a few times when they were nearly equal. Two extra
S-units of noise is hard to overcome. I really wish the outcome had been different.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2720. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 08:34:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3361d5$1_6@corp.newsgroups.com>
Source record: 111165

Roy Lewallen wrote:
> One thing to keep in mind is that vertically polarized waves can
> propagate by ground wave, while horizontally polarized waves can't.

There are locations around my home town where the power line noise
completely blanks out WTAW, a 10KW AM station 30 miles away.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2721. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 08:46:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f33648d_6@corp.newsgroups.com>
Source record: 111166

Mark Keith wrote:
> It's simple. Cecil did not use enough radials for the low height he
> mounted the vertical.

I used *twice as much wire* for radials in the vertical as I used for
the entire horizontal antenna. :-) In addition, the top of the vertical
was 15 feet higher than the horizontal and was a lightning rod. In
addition, the RG-213 cost three times as much as ladder-line. Anyone
need a 33 ft aluminum tubing vertical? Come haul it away.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2722. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 08:54:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f33667f$1_6@corp.newsgroups.com>
Source record: 111167

Jayne Medley wrote:
> What to some of you think about a Windom Ant .
> Looking to put one up . Can I work all bands with no tuner like they say ?

The original (true) Windom uses a single-wire feedline and requires
a matching network.
--
73, Cecil http://www.qsl.net/w5dxp

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------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2723. Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 11:21:48 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308080321.7a75efd@posting.google.com>
Source record: 111168

Hi,

I looked through Albert Shadowitz's "The Electromagnetic Field",
and found on page 554 support for my original statement that antennas
"match" to the impedance of free space (377 Ohms).

I didn't buy the book, but professor Shadowitz did write on this
page about how creating antennas to most efficiently transfer power to
free space is a similar problem to matching a circuits source to its
load. He goes on to make a short comparison between source/load
impedances to an antenna matching to the impedance of free-space.

Food for thought and no doubt, debate.

Slick

2724. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 13:37:32 UTC
From: richardharrison@webtv.net
Message-ID: <21284-3F33A79C-366@storefull-2312.public.lawson.webtv.net>
Source record: 111071

Cecil, W5DXP wrote:
"I`m just reporting conditions at my QTH."

Every installation is unique, but horizontal power lines are often long in terms of h-f waves. At a distance, one receives radiation from the wires which tends to make a zero sum. This happens even though the h-f is likely common-mode on the wires.

Every power pole is supposed to be grounded. Radiation induced and other spurious currents in the power lines drains to the earth through this multitude of earth connections. Though the phase of these currents to earth varies in the various ground wires, you are often closer to one than the others. Radiation phase from that particular ground wire is usually not a jumble at a given frequency due to limited height of the pole. Your proximity to one pole often derives from being served with electricity from that pole.

As horizontally polarized signals don`t propagate via ground wave and suffer extreme attenuation due to cross-polarization when sweeping vertical wires, inducing little energy in them, and due to vertically polarized radiation from vertical wires on power poles, vertically polarized radiation is all you get from the poles.

For an Idea of r-f currents in the ground wire on a power pole, explore close to the pole the signals it radiates with a transistor battery operated portable radio. They can be intense.

Best regards, Richard Harrison, KB5WZI

2725. Re: Moonraker MTD-3 Dipole is it any good?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 13:41:48 UTC
From: Andy <dx90@blueyonder.co.uk>
Message-ID: <xMNYa.3578$hd6.1747@news-binary.blueyonder.co.uk>
Source record: 111069

This antenna is also known as ECO Trapped Wire Dipole for 40-8-160 from Italy. But I still can not find any reviews on it. Good or Bad.

73 Andy - M1BEP

"Andy" <dx90@blueyonder.co.uk> wrote in message news:i3AYa.1998$DO4.157@news-binary.blueyonder.co.uk...
> Hi All!
>
> Just wondering if anyone has used the Moonraker MTD-3 Trapped Wire Dipole
> 40-80-160 mtrs. I am thinking of buying one but cannot find any reviews on
> it.
>
> 73 Andy - M1BEP
>
>

2726. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 13:48:16 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <_NCcnQzSmcO2N66iU-KYuQ@comcast.com>
Source record: 111070
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Randy,

Thanks for your response. The obvious thing you would like to do is to have the software be smart enough to distinguish between signal and noise. But then the hardware becomes moot, and you have invented a better DSP noise reduction circuit.

BTW, I am considering getting an ANC4 to get rid of power line noise on 6 meters. Fortunately, the noise is coming from the North, a very seldom used beam heading.

Tam/WB2TT

2727. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 13:59:58 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <VkednXpaUqt1Ma6iXTWJkg@comcast.com>
Source record: 111072

There was/is a picture in the ARRL manual of a self supporting vertical.
They show the tubing supported by ceramic standoffs from the side of a
wooden post, eg an 8 foot fence post buried half way in the ground.

In the Coke bottle version, the pipe does not go into the bottle, rather the
top of the bottle goes into the pipe; you now need 3 guy ropes to keep the
thing upright. I would first fill the bottle with concrete.

You could combinethe two methods to keep the vertical load off the
standoffs. Don't need the guys.

Tam/WB2TT

2728. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 14:09:01 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh0au1$sa33i$1@ID-134747.news.uni-berlin.de>
Source record: 111073

And another good reason the folded dipole FM antenna works so great. There is actually science to support use of a 300 ohm antenna. who'd a thunk it.

--
73 es cul

wb3fup
a Salty Bear

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308080321.7a75efd@posting.google.com...
> Hi,
>
> I looked through Albert Shadowitz's "The Electromagnetic Field",
> and found on page 554 support for my original statement that antennas
> "match" to the impedance of free space (377 Ohms).
>
> I didn't buy the book, but professor Shadowitz did write on this
> page about how creating antennas to most efficiently transfer power to
> free space is a similar problem to matching a circuits source to its
> load. He goes on to make a short comparison between source/load
> impedances to an antenna matching to the impedance of free-space.
>
> Food for thought and no doubt, debate.
>
>
> Slick

2729. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 14:11:48 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <EcOYa.65732$lt4.35429@rwcrnsc51.ops.asp.att.net>
Source record: 111074
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

My ANC-4 is sitting on top of the ICOM 746. I have a short piece of coax, 7 to 8 feet, to a doublet with a total length of 8 feet on the floor against an outside wall.

Works Great!

I've used the ANC-4 for almost two years. While in Massachusetts the QTH was 100 meters from the New England Power Grid with three sets of high tension [> 67,000 volts] three phase power lines [nine wires total]. The power lines were generally quite quiet but during summer humidity and/or thunderstorms they would get 'noisy'. The ANC-4 reduced the noise to S1 typical levels.

Here in New Hampshire, my local noise source is the local LAN where the router is four feet from my receiver. Similar results with the ANC-4.

BTW, it was given to me as a gift by W1KSZ who picked it up on e-bay for about $60.00. Thanks many times over, Dick.

DD, W1MCE
+ + +

Tarmo Tammaru wrote:

> Randy,
>
> Thanks for your response. The obvious thing you would like to do is to have
> the software be smart enough to distinguish between signal and noise. But
> then the hardware becomes moot, and you have invented a better DSP noise
> reduction circuit.
>
> BTW, I am considering getting an ANC4 to get rid of power line noise on 6
> meters. Fortunately, the noise is coming from the North, a very seldom used
> beam heading.
>
> Tam/WB2TT
>
>

2730. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 14:32:48 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030808103248.00866.00000201@mb-m11.aol.com>
Source record: 111075

>
>One thing to keep in mind is that vertically polarized waves can
>propagate by ground wave, while horizontally polarized waves can't.
>
>Roy Lewallen, W7EL
>

True, but at close distances in which we have our man made noise sources, and power lines contributing to conduct arcing, there is not that much of "propagating" going on (almost near field). Our antennas "see" the noise sources in their full "beauty" of "all kinds" polarization. Major factor is the radiation pattern of the vertical (main lobe close to horizon) and its height (lower to ground - "looking" straight at the noise sources).
Snooping with AM radio with ferite antenna can be very revealing in seeing the polarization at particular point. Broadband noise source (spark transmitter) can be very "ingenious" in producing and propagating the arcs over the wires and air.

Back in Toronto I was plagued by 90% of the time with 20 over 9 from HV power line noise. On 160 and 80 m, even from horizontals the "background" noise was around S8. But having vertical whip stuck at the beach at Cape Hatteras, NC, allowed me to hear rare DX at the opening and closing of the bands and getting reports like "only or first NA station" with barefoot TX. Simply amazing. Oh, and background noise is just non existent, S-meter needle sits at ZERO except when static crashes.
One has to consider and select antenna systems based on requirements, geography and noise situation. If local noise masks the signals, then fuggetabout it. Some gadgets like noise cancellers can help in certain situations (single source, phasing) also by positioning nulls in the antenna pattern at the noise source can help, but it is royal pain in the butt especially for the contester. I am willing to travel to no noise territory to enjoy hearing the band breathe.

So, saying that verticals are no good because they pick noise, is like saying that Ferrari is no good to haul manure :-)

Yuri, K3BU, VE3BMV

2731. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 14:46:35 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030808104635.00866.00000202@mb-m11.aol.com>
Source record: 111076

>
>Hi,
>
> I looked through Albert Shadowitz's "The Electromagnetic Field",
>and found on page 554 support for my original statement that antennas
>"match" to the impedance of free space (377 Ohms).
>
> I didn't buy the book, but professor Shadowitz did write on this
>page about how creating antennas to most efficiently transfer power to
>free space is a similar problem to matching a circuits source to its
>load. He goes on to make a short comparison between source/load
>impedances to an antenna matching to the impedance of free-space.
>
> Food for thought and no doubt, debate.
>
>
>Slick
>
>

Yep,
I tried to question that few moons back, but was "convinced" here that it is not important.
Generally antenna exhibits all kinds of impedances along its length. I was reasoning that antenna having its lowest impedance higher or closer to 377 ohm should have better efficiency in coupling to the space (air). So loops and folded dipoles should be better in that respect. K8CFU et al, when doing experiments with verticals and radials, found that folded monopole measured higher signal levels (over simple monopole) than expected.
Any progress since then?

Yuri, K3BU

2732. Re: Need Vertical 32 feet self supporting

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 14:52:11 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <70e7jv8753tqgdcpnno03qsfken5l9l1up@4ax.com>
Source record: 111151

On 7 Aug 2003 16:08:25 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
wrote:

>"Alan Caplan" <alan.caplan@frontiernet.net> wrote in message
news:<1JEXa.27009$BF1.15390@news02.roc.ny>...
>> Looking for a vertical like I used in Navy Communications. Base insulator
>> and heavy walled tubing 32 feet high. Surplus fine.
>>
>> Alan K4AVQ/ P40AV
>
>Alan,
>Since you are going to put an insulator at the bottom I am
>assuming that the 32 feet is for the antenna alone.
>
>Crappie fishing pole on E bay/fishing store $25 for 20 foot
> telescopic form
>
>Aluminum tape with adhesive backing approx $6 from hardware store.
>
>2 telescopic aluminum tubes from hardware store $17.
>
>One coke bottle from store.
>
>Assemble to length and stick aluminum tape to it end to end,
>Rub down to remove air bubbles.
>
>Drink coke.
>
>Place coke bottle into hole and surround with concrete mix.
>
>
>
>Place antenna into coke bottle.

What keeps the 32' mast from breaking out of the Coke bottle in the
first wind? (I don't think they construct Coke bottles like they did
in the old days with the thick, green glass.)

Bob
k5qwg

2733. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 15:00:38 UTC
From: richardharrison@webtv.net
Message-ID: <1992-3F33BB16-312@storefull-2313.public.lawson.webtv.net>
Source record: 111077

Dr. Slick wrote:
"---creating antennas to most efficiently transfer power to free space is a similar problem to matching a circuit`s source to its load. (Quote from Shadowitz)"

Reciprocity rules in antennas. Kraus has an Apendix D (Absorbing Materials) to his "Antennas For All Applications".

Kraus says:
"The use of space cloth (Z=377 ohms per square) placed lambda/4 from a reflecting plane was invented by Winfield Salisbury (1) at Harvard Radio Research Laboratory during WW-2 ---." (Shades of stealth)

However, a century of antenna experimentation has not revealed a practical need to especially design an antenna to match its radiation to a resistive 377 ohms.

Most effective radiation occurs when the antenna circuit is matched and has no loss. 100% of the energy accepted is radiated.

Best regards, Richard Harrison, KB5WZI

2734. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 15:35:51 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh0g0n$qt9$1@sparta.btinternet.com>
Source record: 111078

An antenna's radiating efficiency has nothing whatever to do with the impedance of its feedline, or whether it's matched to it or not.

Now I suppose somebody will drag in the irrelevant matter of SWR on the feedline.

Reg, G4FGQ

2735. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 16:10:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f33cc0a$1_2@corp-news.newsgroups.com>
Source record: 111079

Richard Harrison wrote:
> Most effective radiation occurs when the antenna circuit is matched and
> has no loss. 100% of the energy accepted is radiated.

In the real world for the same size wire on HF, a folded dipole should
be slightly more efficient than a dipole because of lower I^2*R losses.
--
73, Cecil, W5DXP

2736. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 16:18:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f33cdd8$1_2@corp-news.newsgroups.com>
Source record: 111080

Reg Edwards wrote:
> An antenna's radiating efficiency has nothing whatever to do with the
> impedance of its feedline, or whether it's matched to it or not.
>
> Now I suppose somebody will drag in the irrelevant matter of SWR on the
> feedline.

Actually, you brought up the subject. :-) The feedline's power transfer efficiency is just as important as the antenna's radiating efficiency.
--
73, Cecil, W5DXP

2737. calculate mutual inductance of two wires

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 16:36:24 UTC
From: jxwang@sympatico.ca
Message-ID: <25029d62.0308080836.b498925@posting.google.com>
Source record: 111081

Hi:

To calculate mutual inductance of two wires, people refer to
the formula in the papaer provided by G. A. Campbell
(Physics Review Vol 5 pp452, 1915, available at
http://prola.aps.org/pdf/PR/v5/i6/p452_1
or send an e-mail to me and I'll send you a copy)

It's a nice piece of work. The book of F. W. Grover
(Inductance Calculation (1962)) used his formula as well.

But I have a question on the case if the common perpendicular
Pp is within one or two wires. They both said the formula
is for 'any' case, but it seems to me it applys only to case
like "/\" (not in same plane). I don't see how to apply it to these cases:

case 1: two wires, one lays over the other, making a 'X', any angle,
not 90 degree, not necessary centered. You raise the top one to a
distance.

case 2: two wires making a 'T' but with any angle, not 90 degree,
not necessary touched. You raise one of the two to a distance.

If you know how to use his formula into above two cases, please
advise me. Thank you in advance.

Jian

2738. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 16:39:25 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bh0jnt$k3q$0@208.207.71.144>
Source record: 111082

Reg Edwards wrote:

>An antenna's radiating efficiency has nothing whatever to do with the
>impedance of its feedline, or whether it's matched to it or not.
>
>Now I suppose somebody will drag in the irrelevant matter of SWR on the
>feedline.
>
>

The reason they might do that would be concern for the antenna *system*
efficiency and not
just that of the antenna.

Dick

2739. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 17:04:17 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308080904.15328ae8@posting.google.com>
Source record: 111083

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bgol4leb1@hercules.btinternet.com>...
> "Jayne Medley" wrote
> > What to some of you think about a Windom Ant .
> > Looking to put one up. Can I work all bands
> > with no tuner like they say ?
> >
> ============================
>
> Jayne,
>
> No you can't.
>
> Who are "they" anyway ? Antenna salesmen ? Old-wives ?
>
> There is NO antenna which will allow high radiating efficiency on all bands
> without a tuner.

Just out of interest but what do you consider to be the low limit of a
" high radiating efficiency" for the HF bands? With a tuner,
without a tuner?
Art

>
> In fact, there is NO antenna which will allow high radiating efficiency on
> all bands even WITH a tuner, taking radiation pattern into account!
>
> And to complete the depressing story there is no commercial tuner which will
> cover all bands from 160 to 10 meters.
>
> To work all bands efficiently, in any geographical direction, you need an
> antenna farm containing at least 3 separate antennas, a reasonable ground
> radial system, a number of transmission lines, with availability in the
> shack of 3 different tuners.
>
> However, the original Windom, which must have first been used 65 or 75 years
> ago, well before it acquired a name from the first person to take the
> trouble to describe it in a ham magazine, is a good all round performer. It
> has to be - it's so simple.
>
> The original Windom is a half-wave dipole, resonant at the the design
> frequency, fed by a single wire transmission line of random length, the line
> being tapped off-centre into the dipole. Radiation from the single-wire
> feedline is intentional. Only a moderate sort of ground-radial system is
> needed. But a tuner is needed to match any particular band to a 50-ohm

> transmitter. In the olden-days a 50-ohm transmitter was unheard of.
>
> Relatively modern versions of Windoms are bugged by the sales gimmicks of
> supposedly balanced twin feedlines and baluns which do nothing but degrade
> efficiency compared with the original simplicity. There is just as much
> radiation from the off-centre-fed twin feedline. Antenna salesmen don't
> mention the subject.
>
> For performance of the original Windom, download in a few seconds and run
> immediate;y program WINDOM2 from website below
> ----
> ========================
> Regards from Reg, G4FGQ
> For Free Radio Design Software
> go to http://www.g4fgq.com
> ========================

2740. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 17:14:41 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <O66cneyeEL0WR66iXTWJhQ@comcast.com>
Source record: 111084
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Dave,

Thanks for the info. In my case, the source seems to be a bank of 4 transformers on a pole about 300 feet away. Weirdest thing I had was S9 white noise from about 40 to 55 MHz with about 50% amplitude modulation at around 50 KHz. Turned out to be a 60 amp cartridge fuse in my fuse box about to go bad. I think the 50 KHz was a mechanical resonance in the fuse.

I don't know about the 746, but my 756 has dual watch capability, which lets you listen to two frequencies at the same time. It would be interesting if they would let you vary the phase of the secondary channel..

Tam/WB2TT
"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:EcOYa.65732$It4.35429@rwcrnsc51.ops.asp.att.net...
> My ANC-4 is sitting on top of the ICOM 746. I have a short piece of
> coax, 7 to 8 feet, to a doublet with a total length of 8 feet on the
> floor against an outside wall.
>
> Works Great!
>
> I've used the ANC-4 for almost two years. While in Massachusetts the QTH
> was 100 meters from the New England Power Grid with three sets of high
> tension [> 67,000 volts] three phase power lines [nine wires total].
> The power lines were generally quite quiet but during summer humidity
> and/or thunderstorms they would get 'noisy'. The ANC-4 reduced the noise
> to S1 typical levels.
>
> Here in New Hampshire, my local noise source is the local LAN where the
> router is four feet from my receiver. Similar results with the ANC-4.
>
> BTW, it was given to me as a gift by W1KSZ who picked it up on e-bay for
> about $60.00. Thanks many times over, Dick.
>
> DD, W1MCE

2741. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 17:31:25 UTC
From: Jerry Avins <jya@ieee.org>
Message-ID: <3F33DE6D.F02314ED@ieee.org>
Source record: 111085
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Tarmo Tammaru wrote:
>
> Dave,
>
> Thanks for the info. In my case, the source seems to be a bank of 4
> transformers on a pole about 300 feet away. Weirdest thing I had was S9
> white noise from about 40 to 55 MHz with about 50% amplitude modulation at
> around 50 KHz. Turned out to be a 60 amp cartridge fuse in my fuse box about
> to go bad. I think the 50 KHz was a mechanical resonance in the fuse.
>
...

There are lots of weird noise sources. As a kid in the 40s, I was part of a family visit to an old farm west of Bethlehem Pa., in what was definitely "fringe area" TV reception. The man of the house was telling my father about the strong zig-zag pattern that sometimes showed up on the screen, blanking out the video and often lousing up vertical synch. He wanted to know if the FCC would track down the interference; he thought it was a ham about half a mile away. Just then, the interference started, and right after, his son came downstairs to join us. A little while later, his daughter went upstairs, and the interference cleared when she got to the top. Without saying anything, I went over to the stairway switch and turned it on and off a few times. "On" caused the interference. When we swapped the bulb with one in a floor lamp, the floor lamp caused the same interference. It has been one of my enduring regrets that I didn't ask to keep the bulb. It was probably thrown out.

Jerry
--
Engineering is the art of making what you want from things you can get.
ï¿½ï¿½ï¿½

2742. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 18:04:03 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh0omj$5hp$1@titan.btinternet.com>
Source record: 111086

"Art Unwin wrote
> "Reg Edwards" wote
> > "Jayne Medley" wrote
> > > What to some of you think about a Windom Ant .
> > > Looking to put one up. Can I work all bands
> > > with no tuner like they say ?
> > >
> >
> > No you can't.
> >
> > Who are "they" anyway ? Antenna salesmen ? Old-wives ?
> >
> > There is NO antenna which will allow high radiating efficiency on all
bands
> > without a tuner.
>
> Just out of interest but what do you consider to be the low limit of a
> " high radiating efficiency" for the HF bands? With a tuner,
> without a tuner?

============================

Ask the Antenna salesmen and Old-wives who Jayne listens to.

Reg.

2743. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 18:23:14 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh0pqibpi1@sparta.btinternet.com>
Source record: 111087

> > Now I suppose somebody will drag in the irrelevant matter of SWR on the
> > feedline.
>
> Actually, you brought up the subject. :-) The feedline's power transfer
> efficiency is just as important as the antenna's radiating efficiency.
> --
==========
Cecil, you forgot the efficiency of the PA DC power supply. There's much
more energy wasted there than what's lost in the feeder.

Sort out your power budget. ;o)

Reg.

2744. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 18:40:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <chr7jvkdnbtsqfqe3krr3rhbhtv2i9iprv@4ax.com>
Source record: 111088

On Fri, 8 Aug 2003 18:04:03 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:
>"Art Unwin wrote
>> "Reg Edwards" wote
>>> There is NO antenna which will allow high radiating efficiency on all
>>>bands without a tuner.
>>
>> Just out of interest but what do you consider to be the low limit of a
>> " high radiating efficiency" for the HF bands? With a tuner,
>> without a tuner?
>
>Ask the Antenna salesmen and Old-wives who Jayne listens to.
>---
>Reg.
>
he did....

2745. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 18:53:31 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <e4s7jvsi0rphgq4du5jauknda95odmrpbo@4ax.com>
Source record: 111089

On Fri, 8 Aug 2003 10:09:01 -0400, "WB3FUP \(Mike Hall\)"
<wb3fup@msn.com> wrote:

>And another good reason the folded dipole FM antenna works so great. There
>is actually science to support use of a 300 ohm antenna. who'd a thunk it.

Hi Mike,

What you describe is the feedpoint Z not the antenna Z which to all
intents and purposes is not far from the original, single-wire dipole.

73's
Richard Clark, KB7QHC

2746. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 19:08:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f33f5b9$1_2@corp-news.newsgroups.com>
Source record: 111090

Reg Edwards wrote:
>>Actually, you brought up the subject. :-) The feedline's power transfer
>>efficiency is just as important as the antenna's radiating efficiency.

> Cecil, you forgot the efficiency of the PA DC power supply. There's much
> more energy wasted there than what's lost in the feeder.

My DC power supply is a 12 VDC marine battery charged by a solar
panel. What's the efficiency of free energy? :-)

> Sort out your power budget. ;o)

Actually, I don't much care about the efficiency of the electronics.
60 Hz energy is cheap. I am much more interested in getting the
generated RF into the ï¿½ther.
--
73, Cecil, W5DXP

2747. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 19:21:39 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <7LSYa.1047$Nf3.611@newsread4.news.pas.earthlink.net>
Source record: 111091

Hi Bill -

I tried to find the specific antenna you are considering using your links, but I wasn't able to do so with a reasonable amount of effort.

However, there is no doubt at all that a well-designed trap antenna could do a good job for you.

I am rather bemused by the responses you got suggesting a one-size-fits-all ladder-line doublet instead. I'm sure these can be good antennas; but they usually seem to be presented by their advocates as having no draw-backs at all. That would be an incorrect view, as those antennas have their own tradeoffs--just like other antennas.

The biggest tradeoff is the tuner, of course. If you're planning on running power, this is about a $600 +/- item (commercial models), and it takes up space at your operating position. But you're not done when you buy it and find a space for it... you also have to TUNE it every time you make a significant QSY. (I won't mention tuner losses unless someone brings up trap losses.)

I friend of mine took a look at my array of two W9INN trap/fan dipoles (6-band coverage); but he decided that he wanted to go with the ubiquitous 135-foot doublet-plus-tuner. (He bought the tuner from me, which was great... I don't need it!)

When I asked him how he was doing with his new setup, he reported that it gets out fine on 80m and 40m, but is such a pain in the a*s to tune on the higher bands that he doesn't bother with them. (That's just his experience, other users seem to have less trouble.) Oh, and if he ever decides to run power, he'll have to buy a BIGGER tuner, and probably re-sell the low-power tuner he bought from me.

Meanwhile, I'm enjoying six bands, instant QSY, no tuner needed, and I run power when I want to. Because of the loading effects of the traps, my antennas fit in a very compact space... which is all the space I've got. I hear well,and my reports are excellent. Not bad, not bad at all. All I really want that I haven't got is the ability to get these antennas straighter and HIGHER.

Good luck with your selection, and I hope whatever you choose works great for you.

73,

Ed W6LOL

"Bill" <wbryant@austin.rr.com> wrote in message
news:dTeYa.144468$TJ.8443056@twister.austin.rr.com...
> Anybody tried to build this trap antenna yet?
>
> http://www.nerc.com/~jdegood/coaxtrap/
> http://members.shaw.ca/ve6yp/
> http://members.fortunecity.com/xe1bef/hf-antennas.htm
>
> Need some help on where to tune the traps for the bands of operation, and
> pruning the connection wiring. Can this be done with out a major test
> equipment investment?
>
>

2748. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 19:23:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh0tb7$s94$1@hercules.btinternet.com>
Source record: 111092

> >
> >Ask the Antenna salesmen and Old-wives who Jayne listens to.
> >---
> >
> Tricky Dick said - he did ....
>
Hi Tricky Dicky, you've been keeping a low profile just lately. What
tempted *you* above the parapet?

2749. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 19:47:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f33fedb$1_2@corp-news.newsgroups.com>
Source record: 111093

Ed Senior wrote:
> I am rather bemused by the responses you got suggesting a one-size-fits-all
> ladder-line doublet instead. I'm sure these can be good antennas; but
> they usually seem to be presented by their advocates as having no draw-
> backs at all. That would be an incorrect view, as those antennas have
> their own tradeoffs--just like other antennas.
>
> The biggest tradeoff is the tuner, of course.

I use the transmission line to tune my 130 ft. dipole, no tuner needed.

> Meanwhile, I'm enjoying six bands, instant QSY, no tuner needed, and
> I run power when I want to.

I'm enjoying eight bands, throw a couple of knife switches to QSY,
no tuner needed, and I run power when I want to. Also no messing
with the interaction of multiple legs of dipoles.
--
73, Cecil http://www.qsl.net/w5dxp

2750. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 19:58:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh0vch$fb9$1@titan.btinternet.com>
Source record: 111094

> I am much more interested in getting the
> generated RF into the ether.
> ---
>
Cec, Good, now we're back on track. But what's the 377 ohms of nothingness to do with a random length of wire which has any impedance you fancy just by connecting to it. Even without making a connection and just using your imagination. Could the person who confidently raised this subject from the dead please give us some clues about calculating the turns ratio. I don't have ready access to the works of Maxwell and there's no mention of it in my 1992 edition of the ARRL Handbook.

And I think my smiley is better than yours!

2751. Re: new ant

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 20:13:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <d118jvo46h892igm5341bgg37v3lk3t2g4@4ax.com>
Source record: 111095

On Fri, 8 Aug 2003 19:23:19 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>> >
>> >Ask the Antenna salesmen and Old-wives who Jayne listens to.
>> >---
>> >
>> Tricky Dick said - he did ....
>>
>Hi Tricky Dicky, you've been keeping a low profile just lately. What
>tempted *you* above the parapet?
>
I don't suffer the same low threshold of boredom as you. ;-)

2752. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 20:17:16 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <gzTYa.1059$Nf3.756@newsread4.news.pas.earthlink.net>
Source record: 111096

Hi Cecil -

I'm glad your antenna is working well for you!
A few more comments below...

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f33fedb$1_2@corp-news.newsgroups.com...
> Ed Senior wrote:
> > I am rather bemused by the responses you got suggesting a
one-size-fits-all
> > ladder-line doublet instead. I'm sure these can be good antennas; but
> > they usually seem to be presented by their advocates as having no draw-
> > backs at all. That would be an incorrect view, as those antennas have
> > their own tradeoffs--just like other antennas.
> >
> > The biggest tradeoff is the tuner, of course.
>
> I use the transmission line to tune my 130 ft. dipole, no tuner needed.
>
Well, perhaps I should have said something like

"...no tuner needed, implemented either as the traditional box with
tunable L and C, OR implemented in distributed fashion as a switchable-
length transmission-line transformer, usually including a current balun."

But that would have been a heck of a mouthful; and most of the users
of this antenna type seem to advocate the traditional form of the tuner.

Actually, I rather LIKE the switchable-length transmission line idea.
Could you refresh me on many different lengths do you find you need to
be able to get the SWR below, say, 2:1 at every point in those 8 bands?
(I think we talked about this in an earlier thread, but I don't remember
all the details.) How do you stow the tuning lengths, and how many
physical switches (or plug-ins) are needed? When you do a typical
band change, does "a couple" of switch operations literally mean two,
or several? Any safety issues with the switches if you're running power?

> > Meanwhile, I'm enjoying six bands, instant QSY, no tuner needed, and
> > I run power when I want to.
>
> I'm enjoying eight bands, throw a couple of knife switches to QSY,
> no tuner needed, and I run power when I want to. Also no messing
> with the interaction of multiple legs of dipoles.

I would only add that I found the W9INN dipoles to be extremely easy
to tune, with no troublesome interactions. Also, there is no "messing"

with either a traditional tuner, or switching a tunable transmission-line
transformer.

> --
> 73, Cecil http://www.qsl.net/w5dxp
>

2753. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 20:17:17 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh10gd$mc2$1@sparta.btinternet.com>
Source record: 111097

Tricky Dick Sez -
>What you describe is the feedpoint Z not the antenna Z which to all
>intents and purposes is not far from the original, single-wire dipole.
>
>
Tricky,
After all these years you're catching on. What you really meant to say was
that the feedpoint impedance is not the same thing as the radiation
resistance.

'Antenna' impedance' in the present context is not a phrase known to radio
engineering. Please define.

Reg

2754. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 20:17:43 UTC
From: Bob <bcnntp@optusnet.com.au>
Message-ID: <7h01hb-0lf.ln@p400bob.lse.com.au>
Source record: 111113

Hi NG

Couldnt resist

Rather than arguing about it why dont all of you construct many kinds of dipoles and folded dipoles, then measure the radiated field strength. You could then collate the info between you all and present it to the NG

<grin>

Bob VK2YQA

> I didn't buy the book, but professor Shadowitz did write on this
> page about how creating antennas to most efficiently transfer power to
> free space is a similar problem to matching a circuits source to its
> load. He goes on to make a short comparison between source/load
> impedances to an antenna matching to the impedance of free-space.
>
> Food for thought and no doubt, debate.
>
>
> Slick

2755. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 21:01:16 UTC
From: dplatt@radagast.org
Message-ID: <vj83ssbnbdih8e@corp.supernews.com>
Source record: 111098

In article <bh0vch$fb9$1@titan.btinternet.com>,
Reg Edwards <g4fgq.regp@btinternet.com> wrote:

>Cec, Good, now we're back on track. But what's the 377 ohms of nothingness
>to do with a random length of wire which has any impedance you fancy just by
>connecting to it. Even without making a connection and just using your
>imagination. Could the person who confidently raised this subject from the
>dead please give us some clues about calculating the turns ratio.

I think you have to measure the diameter of free space first, before
you can calculate the turns ratio.

Do write, when you get to the far side, and let us know how the
weather is, OK? ;-)

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2756. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 21:08:27 UTC
From: Keyboard In The Wilderness <KITW@forest.com>
Message-ID: <fjUYa.31252$ff.5358@fed1read01>
Source record: 111099

Jav -- asked many times before -- for the answers go to Groups Google.com
http://groups.google.com/

Search for Oil For Cantenna or Oil For Dummy Load

Mineral Oil works well for me.

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:863cgbdfxq.fsf@skylane.kjsl.com...
> I got a Heathkit Cantenna recently, sans oil.
>
> Where do I find transformer oil? The few industrial suppliers in my
> area (Monterey, CA) want to sell me drums of the stuff. I only need
> a gallon...
>
> Is motor oil OK to use?
>
> 73,
> -jav w6vms

2757. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 21:18:27 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <DsUYa.158$dj3.18889@nnrp1.ptd.net>
Source record: 111100

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:863cgbdfxq.fsf@skylane.kjsl.com...
> I got a Heathkit Cantenna recently, sans oil.
>
> Where do I find transformer oil? The few industrial suppliers in my
> area (Monterey, CA) want to sell me drums of the stuff. I only need
> a gallon...
>
> Is motor oil OK to use?
>
> 73,
> -jav w6vms

I would NOT use motor oil.

I would suggest mineral oil if you can't find transformer oil (used to
have PCBs in it, but I believe they've been banned).

Carl - wk3c

2758. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 21:53:54 UTC
From: david <d.london@ntlworld.com>
Message-ID: <VZUYa.897$Yu.33@newsfep1-gui.server.ntli.net>
Source record: 111101

"Geo" <usenet@plus.net> wrote in message
news:20030807121610320+0100@news.btinternet.com...
> Has anyone bought/ used/ worked this antenna?
> http://www.g3tpw.ukgateway.net/index.html
>
> I have a very small QTH, with not much room for HF antennas, but
> with lots of scope for a good bit of TVI to the neighbors, so a
> vert may not be the best solution.
>
> The website is a bit sparse on tech details.
>
> Can anyone comment on this one?
>
> 73
> George...

Hi George

I have 2, one used portable and the other is at my qth, contacts as good as it gets from a dipole, worked japan, india, pakistan, argentina, brazil, other south america countries & all over europe from NE England, usually on cw. funnily enough can only contact/hear east coast USA.
get one and have some fun !!!
steve webb also a great guy to speak too, he is also mine of information.

david

2759. Arm for antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 21:55:50 UTC
From: Michalkun <buranko2000@yahoo.com>
Message-ID: <Xns93D1A1A5F77D2michalkunyahoocom@128.233.192.251>
Source record: 111102

I want to install a discone atenna on my balcony. I want it to be about 30cm or further from the balcony rim. Are there any arms or brackets that would support the discone's mast, in that way? If yes, what should I be looking for?

2760. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 21:59:49 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308081359.3dd38304@posting.google.com>
Source record: 111103

Roy Lewallen <w7el@eznec.com> wrote in message news:<vj6kmbl6a3taac@corp.supernews.com>...
> Well, 50 feet of RG-58 has about 3/4 dB loss at 14 MHz. And when it's
> old. . . I've got RG-58 that's well over 20 years old, and can't measure
> the difference in loss between it and new cable. If it's damaged, it
> might create an impedance bump, which you might or might not notice. But
> that's true of larger diameter cable, too.
>
> I'm bemused to find that today's hams have somehow gotten convinced they
> all need BIG cable for a BIG signal. Maybe they've been listening to the
> same ads that sell people on monster audio cables and SUVs. But I sure
> hate to see this misleading concept being passed along to newcomers.
> They'll fall for the ads soon enough without help.
>
> Roy Lewallen, W7EL

I don't think I've really promoted the cause of excess loss in thin coax, but it is worse than thick cable. By damaged, I mean waterlogged generally. There are not too many other ways to damage it to make it overly lossy. I've seen some old thin coax that was pretty bad as far as loss. Quite noticable on 10m anyway...Maybe not 20m as much. I do prefer larger coax any day of the week, but thats mainly to reduce the losses when I have a fairly large mismatch. IE: warc band use with tuner, etc. Also less loss on higher freq's. In this case, I only mentioned it in case the tuner ends up not being the problem. The coax needs to at least be considered. But I think the tuner is the likely culprit. MK

2761. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 22:07:09 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <haVYa.100055$o%2.44246@sccrnsc02>
Source record: 111104

You could always use Google to search this group for the hundreds of post on
this very subject.
"Javier Henderson" <javier@KJSL.COM> wrote in message
news:863cgbdfxq.fsf@skylane.kjsl.com...
> I got a Heathkit Cantenna recently, sans oil.
>
> Where do I find transformer oil? The few industrial suppliers in my
> area (Monterey, CA) want to sell me drums of the stuff. I only need
> a gallon...
>
> Is motor oil OK to use?
>
> 73,
> -jav w6vms

2762. Re: Poor vertical performance on metal sheet roof - comments?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 22:08:13 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308081408.302fb491@posting.google.com>
Source record: 111105

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f33648d_6@corp.newsgroups.com>...
> Mark Keith wrote:
> > It's simple. Cecil did not use enough radials for the low height he
> > mounted the vertical.
>
> I used *twice as much wire* for radials in the vertical as I used for
> the entire horizontal antenna. :-)

Unfortunately, that was not enough.

In addition, the top of the vertical
> was 15 feet higher than the horizontal and was a lightning rod.

The top of mine was nearly 70 ft in the air. It was never struck once
the whole time I had it up, and went through some radical t-storms.
Funny part? After I took it down, I've had that mast struck twice,
with much less height.

In
> addition, the RG-213 cost three times as much as ladder-line.

You are a retired injuneer. You should able able to afford it. :/

Anyone
> need a 33 ft aluminum tubing vertical? Come haul it away.

I would, if I were closer. Then I could put up two of them, phase
them, and really kick some butt. I'd take that overpriced 213 off your
hands too. :) MK

2763. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 22:10:11 UTC
From: Michael Melland <w9wis@charter.net>
Message-ID: <vj883k1tp6rg5a@corp.supernews.com>
Source record: 111107

Your local power company has it. Generally at their transformer maintenance shop.... I got 2 gallons which will last me a lifetime free. They buy it by the rail tanker and said the cost to figure out what to charge for 1 - 2 gals was more then it was worth <grin>. They use the stuff in transformers. It's highly refined mineral oil and has anti oxidation additives etc. so it's not "just" mineral oil. There are several makers and brand names but the stuff I got is made by Shell and is called Shell Diala (apparently named ala dialectric oil).

Mike, W9WIS

2764. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 22:10:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ois7jvouhaeu1coah68ah5ub7s5m315vsm@4ax.com>
Source record: 111106

On 08 Aug 2003 14:46:35 GMT, k3bu@aol.comnoSaddam (Yuri Blanarovich)
wrote:

>
>Yep,
>I tried to question that few moons back, but was "convinced" here that it is
>not important.

It is only an academic exercise as long as you use wire.

>Generally antenna exhibits all kinds of impedances along its length.

Very true, but that is simply an observation of fact that has nothing
to do with purpose.

>I was
>reasoning that antenna having its lowest impedance higher or closer to 377 ohm
>should have better efficiency in coupling to the space (air).

Just by virtue of using a conductor that can support its weight in
suspension (or compression if a vertical); this generally guarantees
little Ohmic loss which is the only source (other than ground) of
degrading efficiency.

> So loops and
>folded dipoles should be better in that respect. K8CFU et al, when doing
>experiments with verticals and radials, found that folded monopole measured
>higher signal levels (over simple monopole) than expected.
>Any progress since then?
>
>Yuri, K3BU

Hi Yuri,

Like Mike, you are confusing feedpoint Z with radiation Z. For simple
designs like the half wave dipole and the quarter wave monopole, the
two (feedpoint Z and radiation Z) are nearly identical. Fold these
with extra wire, and all you are doing is Z transforming that value to
another value and doing nothing about the inherent loss (which is
trivial in the first place if your antenna is built from a conductor).

The forced debate that an antenna is/is-not an Impedance transformer
seems myopic in the extreme when simple requirements are violated.
Namely, you cannot offer a simple description of any component whose
dimension exceeds a tenth wavelength (and even that is too long for
these "debates"). It is absurd to think of the antenna somehow ending
at the tips of the wire as though alligator clips there would normally

be expected to connect it to the ï¿½ther. This is like thinking a speaker emanates sound only from the fringe ring of the cone. Neither example could be more absurd (but I've no doubt there will be many attempts to shatter that illusion).

An antenna is a transformer (or transducer for those who prefer) which is immersed in a medium, not connected to it at the ends of the wire. There is a continuum of connectivity that is moderated by complex voltage and current relationships that are in turn intertwined with complex field relationships (all being irrevocably related). This complexity does not negate the transformer (or transduction) operation. In fact the statement of the complexity is the answer to the transform.

An antenna is a leaky transmission line. That the spreading of a transmission line transforms its Z is a commonplace of long standing. That a principle requirement be that this transition occur over a long interval (again, the nature of wavelength is central) is also long understood. Combine the spreading, over a long distance, with deliberate intent to leak the "confined" fields is also a principle found in practice. A notable example is found in the V antenna described in other threads, and the venerable Rhombic is another.

Now, to retract those provisos of long distance (wavelength) and simply look at the standard dipole or monopole; it is obvious that they are violated, and yet this is only to the notion of a simple transform. The short transition, leaky, transmission lines simply have a more complex transform - not the absence of a transform. The first obvious evidence is the notable STANDING WAVE found on the short elements in glaring contrast to the bigger designs.

For some reason, many want to dismiss the arguments against standing waves on transmission lines (the circulating currents are lost to the Ohmic resistance of the line) as not being applicable to the radiating (leaky) elements. Such magic. The simple fact of the matter is that these radiating elements are often many, many times larger that the leads that feed them and offer very much less loss for the exhibited SWR. The path to dismissing the concern is less magic than the simple practicality of having more copper.

A visual correlative of these points are illustrated at:
http://home.comcast.net/~kb7qhc/antennas/Fields/index.htm
Where I show not the far field characteristics, but the near field interaction where the transformer operation takes place. The visual element portrays the near fields in terms of Z in relation to that of free space Z (regardless of what "Ohms" is thought to mean for whatever context).

A point in example with a vertical
http://home.comcast.net/~kb7qhc/antennas/Fields/Vertical/index.htm
reveals that fields in the proximity about half way up the radiator are nearly matched to the Z of free space. The complex transformer

has established a locality of no reflection. Likewise, at the base of the same monopole, the local fields are in high turmoil. At a remote distance where the far field characteristics are felt, these two characteristics are washed out to present the standard radiation pattern.

So what does it mean to have high values or low values? If we were to consider the example of the dipole
http://home.comcast.net/~kb7qhc/antennas/Fields/Dipole/index.htm
We would see the monopole turned on its side, and mirrored with the twin radiator. And then we would notice more, like ground (which was part of the monopole but invisibly balanced). One should notice that ground exhibits high SWR regions in its vicinity directly below the feed point of the radiator. A bit of slight of hand here, because ground is not magic either; and is simply another, albeit lossier, radiator. At this wavelength spacing, the fact that there is high SWR in the nearby fields, and that ground is reflective should come at no great surprise.

To extend this observation we need only lift that dipole to half wave to see if ground follows in its wavelength relationships as radiator. It does. The near fields close to ground are obviously different in nature, but what does this have to do with high or low values? Let's slip a conductive ground mat below the dipole. The result is illustrated as a radiator in a virtually calm space of field interaction (and efficiency measurements show a ground screen improves this quality).

The variations of physical structure all obviously impact near fields and present every bit of evidence to the action of transformation (or transduction). There are fields that create localities of low SWR or high SWR and these are immaterial to the argument of reducing the description of an antenna to transformer (or transducer) because the nature of size imposes no "point" which answers where the transform (or transduction) occurs except at the obvious feedpoint.

But I can well imagine there are those who still linger with the question "what significance is there in these Hi/Low SWR values?"

Think back to your experience of driving a hot summer road, where the shimmer ahead of you presented the vision of a blank blue in place of the black asphalt. A common experience of the mirage, or temperature inversion for those less inclined to the mystical explanation. It is tempting to offer this media dislocality to the analogy of lensing the radiation. For an antenna, this would be to the neglect of the same requirement that the lens be much larger than the source however and such is not the case with these smaller local effects. Instead, they could be argued to be atropic aberrations (like a cloudy distorted lens or sheet of glass, to extend the metaphor). As such, the ground mat offers a means to remove some of the clouding (and is demonstrated by an overall increase in radiation - better efficiency).

73's
Richard Clark, KB7QHC

2765. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 22:24:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3d88jvc4g6910jq1vqek0u3t8gooejpuce@4ax.com>
Source record: 111108

On Fri, 8 Aug 2003 17:10:11 -0500, "Michael Melland"
<w9wis@charter.net> wrote:

>Your local power company has it. Generally at their transformer maintenance
>shop.... I got 2 gallons which will last me a lifetime free. They buy it by
>the rail tanker and said the cost to figure out what to charge for 1 - 2
>gals was more then it was worth <grin>. They use the stuff in transformers.
>It's highly refined mineral oil and has anti oxidation additives etc. so
>it's not "just" mineral oil. There are several makers and brand names but
>the stuff I got is made by Shell and is called Shell Diala (apparently named
>ala dialectric oil).
>
>Mike, W9WIS
>
>

Hi All,

Jav, this is the best advice you will get for what you asked for,
mineral oil comes in second. Other advice insisting you locate this
"dielectric oil" to the exclusion of other liquids is time lost when
you could be pursuing the Grail or writing the great modern novel.

Oddly enough, water (H2O) is the best coolant (think about filling
your car radiator with ANY oil), but in all practicality the worst
advice. This is because it is an oxidant, and worse with temperature,
it becomes a conductor when it becomes fouled with oxidation
byproducts.

73's
Richard Clark, KB7QHC

2766. Re: Yet another "what antenna to get" thread (this about slopers)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 22:54:51 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <Loidneq8ot6kt6miXTWJjg@crocker.com>
Source record: 111109

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:867k5ndg0o.fsf@skylane.kjsl.com...
> So, I got the MQ-2 coming in and hopefully will have it up over the
> weekend. That gives me 20 through 6 meters.
>
> I'd like to get something up for at least 40m, preferrably for 80m as
well.
>
> About the only thing I can do is to string a piece of wire between two
> points about 35 to 40 feet apart.
>
> Any brilliant ideas?
>
> 73,
> -jav w6vms

just the standard answer... as long a dipole as you can fit, as high as you
can get it, fed with whatever feedline you have that reaches, with a tuner
to make your radio happy.... works fine, lasts a long time, doesn't cost
much.

2767. Re: Arm for antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 23:10:52 UTC
From: nbr <nobodyreally@hotmail.com>
Message-ID: <96b8jvg7motl0229fo3nrr8li5c5r43rhb@4ax.com>
Source record: 111110

On Fri, 8 Aug 2003 21:55:50 +0000 (UTC), Michalkun
<buranko2000@yahoo.com> wrote:

>I want to install a discone atenna on my balcony. I want it to be about
>30cm or further from the balcony rim. Are there any arms or brackets that
>would support the discone's mast, in that way? If yes, what should I be
>looking for?

Can we assume this discone ins't huge, ie approx 3' tall typical of
VHF/UHF scanner antennas? And can we assume you have vertical rails on
your balcony? If yes to both, a couple 10' pieces of schedule 40 or
schedule 80 PVC pipe will not cost you much. These can be cut to the
desired length and attached to the balcony rails by u-bolts or pipe
clamps, and the discone attached to the PVC with similar bolts or
clamps. Using two pieces of PVC pipe will stablize the antenna and
provide a place for the coax to be taped as it comes into you home.

good luck

2768. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 23:25:09 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <KpCcnciKj9vCrKmiXTWJhg@comcast.com>
Source record: 111111

This came up about a month ago. Several people mentioned that they are using automatic transmission fluid.

Tam/WB2TT
"Javier Henderson" <javier@KJSL.COM> wrote in message
news:863cgbdfxq.fsf@skylane.kjsl.com...
> I got a Heathkit Cantenna recently, sans oil.
>
> Where do I find transformer oil? The few industrial suppliers in my
> area (Monterey, CA) want to sell me drums of the stuff. I only need
> a gallon...
>
> Is motor oil OK to use?
>
> 73,
> -jav w6vms

2769. Re: Homebrew tuners

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-08 23:52:43 UTC
From: larry <larya24@hotmail.com>
Message-ID: <fJWYa.131066$rsJ.55063@news04.bloor.is.net.cable.rogers.com>
Source record: 111112

I read some of the return messages and I noticed that the message initially openned by saying that many hams still use a long wire and tuner. He comments to say that the long wire is cheap but the tuner is not.
That kinda hit a cord with me because of my antenna experiences. I have been an amateur since 1964, thats not a brag just a comment. Besides using a random wire antenna, I have tried multi-band dipoles, quads, beams, folded dipoles and others. However, I still keep coming back to my old reliable random wire, about 60ish feet and an L network (the coil connecting to the transmitter and the capacitor connecting between the ground and the common connection of the coil and antenna). Though a very simple circuit, it works very well. Recently I put up a 30ish foot random wire and found that it didn't work on 80, using the L network. After some thought, I broke the random wire and inserted a coil. I now gives me a good swr on 80 meters.
I just wanted to defend cheap, but highly functional, antenna couplers and cheap but useful random wires.
Larry ve3fxq
Sorry if I have come accross a little rough sounding.

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message news:85ed38d.0307290750.345d3abf@posting.google.com...
> Seems like a lot of hams with limited resources are still compelled
> to operate on many bands with just a long wire and a tuner.
> The wire is inexpensive but the tuners are not. Thus my present
> project.
> I was given a Palomar enginnering balun with 5 female connenection
> which by selection can match a antenna in steps from 5 ohms to over
> 450 ohms
> in a series of steps. I am presently rigging it up so that all
> steps can be switched thru remotely by a single motor. The switching
> arrangement
> is the main challenge since inexpensive means simple.
> Now I have not measured losses of the balun before hand because the
> switching
> challenge is what is driving me.
> Anybody have any thoughts about what I should expect from this
> balun other than knowing that it is not a tuner as is generally known
> since
> it does not have the ability to obtain the priceless 1:1 condition
> that so many desire?
> Regards
> Art

2770. Re: HELP:Daiwa CN-410 M

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 00:19:21 UTC
From: NN7K@reno.rmci.net
Message-ID: <yYWYa.3020$u44.1339@fe01.atl2.webusenet.com>
Source record: 111114

First, find out if it NEEDS recalibration! Easiest way I know if to place it in forward direction (normal hookup), in series with a BIRD (or other wattmeter). Measure forward, and reverse power on the DIAWA, and compare with the readings from the Bird. then REVERSE the DIAWA, (OUT put from xmitter, INput to the load, and again read. 1), the output meter should read the same power level that the input did originally, 2), same for the Input meter, read as the output (SWR) meter previously did, and 3) All tests should read within 5%-10% of the Bird. If all 3 tests are met, then forget the recalibration bit!
Jim NN7K

"Zeca" <peixoto@ispwest.com> wrote in message
news:3F32B549.A8BD8954@ispwest.com...
>
> Hi all,
>
> Picked up a 2nd hand Daiwa CN-410m crossed needle SWR
> meter the other day.
> I want to re-calabrate it and check it out.
> Can anyone help with a circuit diagram or know where I
> can get one from?
> Maybe the original manual had it in?
>
> Tnx and 73
>
> CMP
>

2771. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 00:20:31 UTC
From: larry <larya24@hotmail.com>
Message-ID: <j7XYa.131253$rsJ.131240@news04.bloor.is.net.cable.rogers.com>
Source record: 111115

When I first started out, in amateur radio, my antenna was a random wire about 75 feet long. About 15 ish feet was in the basement and the wire went though a hole drill through the window frame of the basement window. My antenna coupler was an L network. My tansmitter was a dx-60 and receiver was a gr-91, for the first 6 months and then a hr-10 for a few years after that. I did quite well with that arrangement.
Larry ve3fxq

"gil" <gilpi@mindspring.com> wrote in message
news:bg86dh$mq3$1@slb4.atl.mindspring.net...
> My antenna setup is nothing but a random wire going from a tree/ tuner/
rig
> in the basement about 60-70 feet total, I know it could be better but its
> all I can get away with for the moment. The ground is a rod thru the
bottom
> of the sump where is always wet and I feel is good for RF, I hook the end
of
> that to the back of the random wire tuner.
> My concern is...the wire coming from window to tuner/rig is about 15 feet
> and due to placement I cant shorten it much more,
> Should I use a coax from window to rig?
> Or just leave it alone?
> BTW I use low power about 30-40 watts CW and the setup seems to work
fairly
> well on most bands..just concerned about loss and RF inside the shack.
> Any input appreciated, and thanks for reading
>
> gil
>
>
>

2772. Re: Which is better?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 00:24:48 UTC
From: larry <larya24@hotmail.com>
Message-ID: <kbXYa.131275$rsJ.45804@news04.bloor.is.net.cable.rogers.com>
Source record: 111116

Feedline length will be important.
> IMO, use a 1:1 balun/choke at the tuner output.

Please excuse my ignorance, on this one, but why would you need a balun
after an antenna coupler?
Larry ve3fxq

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f28456b_7@corp.newsgroups.com...
> Ken Bessler wrote:
> > Should I feed it with 300 ohm HD twinlead, 450 ohm ladder line with or
> > without a Bal-Un or rg58 coax with or without a Balun?
>
> If you want to approach the limits of efficiency, feed it with open-wire
> line, usually around a Z0 of 600 ohms. Feedline length will be important.
> IMO, use a 1:1 balun/choke at the tuner output.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2773. Re: Help needed with ARX220B

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 00:35:45 UTC
From: NN7K@reno.rmci.net
Message-ID: <UbXYa.3024$u44.2360@fe01.atl2.webusenet.com>
Source record: 111117

Tis possible-- reason the ground radials / extra piece of coax was there is because the *(^$%(antenna was poorly designed- didn't decouple the coax from the antenna. Now what did this have to do with the price of tea in China? well, when AEA created the iso-pole, (really a 1/2 wave coaxial antenna, decoupled with 2- 1/4 wavelength cones), and the antenna , down to the end of the first cone (if memory serves me correct) radiated, giving it , it's stated gain. NO RADIATION FROM THE COAX RESULTED (or very little), to distort the verticle patern.
This was demonstrated at a ARRL convention many years ago, in side by side demo, with the CUSHCRAFT. a sampleing loop next to the coax on the ISOPOLE showed NO RADIATION, while the CUSHCRAFT lit a #43 lamp to almost full brilliance (both these on a loop held next to the coax, about 10 feet down the run.) That EXTRA PIECE OF COAX/GROUND RADIALS was cushcrafts answer to eliminate that radiation (and by corolary, recieve distortion) of the antenna pattern! In other words, without it, your coax is radiating (and also acting as a recieve antenna. If you want the TRUE antenna pattern, put those pieces back on -the one busted radial probably doesnt make that much diff, but as a whole, without it will distort the antenna pattern. As info, Jim NN7K

Andy sent:> Hello all. I recently bought an Icom IC-38A and a Cushcraft Ringo II ARX-220B
> antenna. When the previous owner was taking down the antenna, he accidentally
> snapped one of the radials at the thread. I put the antenna up without the
> extra piece of coax and the radials and the SWR is just fine. I can even hear a
> repeater about 50 miles north of me with the antenna only 10 feet off of the
> ground.
>
> Will I benefit by having the radials? I was thinking of contacting Cushcraft to
> see what replacement radials would cost.
> =-
> 73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)

2774. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 00:54:27 UTC
From: NN7K@reno.rmci.net
Message-ID: <qtXYa.3029$u44.1714@fe01.atl2.webusenet.com>
Source record: 111118
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Tam- never had much luck with one got (also 6 meter op), but , also, BEWARE if into weak signal stuff - has 6 dB LOSS on recieve (DC bands, who cared, background noise worse than that, but at VHF ???) If you want one, make you good deal! Jim NN7K

Tam wrote:
> Randy,
>
> Thanks for your response. The obvious thing you would like to do is to have
> the software be smart enough to distinguish between signal and noise. But
> then the hardware becomes moot, and you have invented a better DSP noise
> reduction circuit.
>
> BTW, I am considering getting an ANC4 to get rid of power line noise on 6
> meters. Fortunately, the noise is coming from the North, a very seldom used
> beam heading.
>
> Tam/WB2TT
>
>

2775. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 01:32:13 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bh1itr$sg4$1@slb6.atl.mindspring.net>
Source record: 111019

DO NOT USE MOTOR OIL. DO NOT USE TRANSFORMER OIL.

Use MINERAL OIL ONLY. It is fine for 'normal' Amateur radio powerlevels.
However it WILL cook a bit at 1300 watts if you keep it up a while.

You can get it at a standard drug store.

Dan/W4NTI

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:863cgbdfxq.fsf@skylane.kjsl.com...
> I got a Heathkit Cantenna recently, sans oil.
>
> Where do I find transformer oil? The few industrial suppliers in my
> area (Monterey, CA) want to sell me drums of the stuff. I only need
> a gallon...
>
> Is motor oil OK to use?
>
> 73,
> -jav w6vms

2776. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 02:31:58 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh1mf2$saup6$1@ID-134747.news.uni-berlin.de>
Source record: 111021

Gee I spent not more than 2 hours with my MFJ259, my MFJ Tuner (I think it cost me 129.95 and is good for 300 watts, which is three times the power I will ever need, and 600 times the power that I used most of the time), and a pencil and paper. I am old fashioned and maintain a log. In the log I have recorded tuner settings for each of the ham bands. (75 and 80 are separate bands) QSY is a matter of referring to log, presetting dials, and changing bands. If I feel the burning need a quick touch up of the capacitor and I am matched. My transceiver, and the DIP unit sit side by side on top of the tuner, so there is no significant footprint problem at the operating position.

You failed to mention the only major drawback to the ladder line fed doublet that I am aware of. It develops some strange lobes as it gets longer. I have heard that the 44' length of the NorCal "Crappie" dipole was chosen as a compromise between 80 meter efficiency and 10 meter lobes. I have been scared of "fan" dipoles for years. I worry that given a reasonable radiator I put enough 7.810 signal on the air to upset the FCC when I was on 3.905. Of course the tuner you seem to refuse to run would help with that somewhat, but I still do not like having the nearly resonate antenna connected to the transmitter any way. I have found out just how far I can talk with a couple of watts (halfway around the world, after that it is shorter going the other way). I never have run an amplifier, there was a time I put 225 plus watts out on 80, and 40 (TR4) but since I got my first ICOM never more than 100, seldom that much. Still worried about harmonics where I have no business radiating, and the FT817 has dramatically demonstrated just how little power is required for a QSO. Amplify the harmonic, and couple it to a nearly resonate antenna, no thank you, I like my license to much, and do not have all that much money for fines laying around the house.

--
73 es cul

wb3fup
a Salty Bear

"Ed Senior" <eseniorsREMOVE@earthlink.net> wrote in message
news:7LSYa.1047$Nf3.611@newsread4.news.pas.earthlink.net...
> Hi Bill -
>
> I tried to find the specific antenna you are considering using your
links,
> but I wasn't able to do so with a reasonable amount of effort.
>
> However, there is no doubt at all that a well-designed trap antenna

> could do a good job for you.
>
> I am rather bemused by the responses you got suggesting a
one-size-fits-all
> ladder-line doublet instead. I'm sure these can be good antennas; but
> they usually seem to be presented by their advocates as having no draw-
> backs at all. That would be an incorrect view, as those antennas have
> their own tradeoffs--just like other antennas.
>
> The biggest tradeoff is the tuner, of course. If you're planning on
running
> power, this is about a $600 +/- item (commercial models), and it takes
> up space at your operating position. But you're not done when you buy
> it and find a space for it... you also have to TUNE it every time you
make
> a significant QSY. (I won't mention tuner losses unless someone brings
> up trap losses.)
>
> I friend of mine took a look at my array of two W9INN trap/fan dipoles
> (6-band coverage); but he decided that he wanted to go with the
ubiquitous
> 135-foot doublet-plus-tuner. (He bought the tuner from me, which was
> great... I don't need it!)
>
> When I asked him how he was doing with his new setup, he reported
> that it gets out fine on 80m and 40m, but is such a pain in the a*s to
> tune on the higher bands that he doesn't bother with them. (That's just
> his experience, other users seem to have less trouble.) Oh, and if he
> ever decides to run power, he'll have to buy a BIGGER tuner, and
> probably re-sell the low-power tuner he bought from me.
>
> Meanwhile, I'm enjoying six bands, instant QSY, no tuner needed, and
> I run power when I want to. Because of the loading effects of the traps,
> my antennas fit in a very compact space... which is all the space I've
got.
> I hear well,and my reports are excellent. Not bad, not bad at all.
> All I really want that I haven't got is the ability to get these antennas
> straighter and HIGHER.
>
> Good luck with your selection, and I hope whatever you choose works
> great for you.
>
> 73,
>
> Ed W6LOL
>
> "Bill" <wbryant@austin.rr.com> wrote in message
> news:dTeYa.144468$TJ.8443056@twister.austin.rr.com...
> > Anybody tried to build this trap antenna yet?
> >

> > http://www.nerc.com/~jdegood/coaxtrap/
> > http://members.shaw.ca/ve6yp/
> > http://members.fortunecity.com/xe1bef/hf-antennas.htm
> >
> > Need some help on where to tune the traps for the bands of operation,
and
> > pruning the connection wiring. Can this be done with out a major test
> > equipment investment?
> >
> >
>
>
>
>

2777. Re: Help needed with ARX220B

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 02:44:11 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030808224411.03117.00000290@mb-m12.aol.com>
Source record: 111022

>In other words, without it, your coax is radiating (and
>also acting as a recieve antenna. If you want the TRUE antenna pattern, put
>those pieces back on -the one busted radial probably doesnt make that much
>diff, but as a whole, without it will distort the antenna pattern. As
>info, Jim NN7K

Thanks for the info. The SWR is fine and I was talking to another station on a repeater about 30 miles away with the antenna only 10 feet above the ground. Guess it's at least working somewhat. I'll need to get the antenna higher up if I want to use that extra piece of coax. I was thinking of contacting Cushcraft and asking if I could by a new radial.

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-

73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

2778. Re: My antenna setup, comments please

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 02:49:35 UTC
From: Patrick <psenospam@here.com>
Message-ID: <C9ZYa.42580$Qe5.16672@fe12.atl2.webusenet.com>
Source record: 111023

When I first stated, I found an old roll of fence wire and ran it out the window. It was probably 50 feet long and I brought it right into the shack. I had an old crystal-controlled (7120 Khz and 3740 Khz) homebrew transmitter my dad built and a Realistic DX-100 (bad bandspread). This was in 1982 so better stuff was available, I just didn't have any money (I was 15). My dad had let his license lapse back in the 60's when he was a General. This transmitter was all he had left and the receiver was a Christmas gift. I used it for about two years and worked all around the world (upgraded the receiver after about 6 months).

I have found that to an extent, patience and perseverance (and a good receiver) more than make up for high dollars.

Patrick

2779. 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 05:03:46 UTC
From: Mitch <mitch@nospam.net>
Message-ID: <c309jvggil9i534taq90rrt21g4u24cumn@4ax.com>
Source record: 111024

http://www.mitchsantennas.cjb.net

2780. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 06:59:42 UTC
From: eric.jacobsen@ieee.org
Message-ID: <3f349bc1.209493334@news.earthlink.net>
Source record: 111025
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

On Fri, 08 Aug 2003 13:31:25 -0400, Jerry Avins <jya@ieee.org> wrote:

>Tarmo Tammaru wrote:
>>
>> Dave,
>>
>> Thanks for the info. In my case, the source seems to be a bank of 4
>> transformers on a pole about 300 feet away. Weirdest thing I had was S9
>> white noise from about 40 to 55 MHz with about 50% amplitude modulation at
>> around 50 KHz. Turned out to be a 60 amp cartridge fuse in my fuse box about
>> to go bad. I think the 50 KHz was a mechanical resonance in the fuse.
>>
> ...
>
>There are lots of weird noise sources. As a kid in the 40s, I was part
>of a family visit to an old farm west of Bethlehem Pa., in what was
>definitely "fringe area" TV reception. The man of the house was telling
>my father about the strong zig-zag pattern that sometimes showed up on
>the screen, blanking out the video and often lousing up vertical synch.
>He wanted to know if the FCC would track down the interference; he
>thought it was a ham about half a mile away. Just then, the interference
>started, and right after, his son came downstairs to join us. A little
>while later, his daughter went upstairs, and the interference cleared
>when she got to the top. Without saying anything, I went over to the
>stairway switch and turned it on and off a few times. "On" caused the
>interference. When we swapped the bulb with one in a floor lamp, the
>floor lamp caused the same interference. It has been one of my enduring
>regrets that I didn't ask to keep the bulb. It was probably thrown out.
>
>Jerry

I think that one may have been intended for an embassy somewhere...

Eric Jacobsen
Minister of Algorithms, Intel Corp.
My opinions may not be Intel's opinions.
http://www.ericjacobsen.org

2781. Cushcraft MA5B problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 08:50:06 UTC
From: Andy <dx90@blueyonder.co.uk>
Message-ID: <_A2Za.13579$hd6.4732@news-binary.blueyonder.co.uk>
Source record: 111026

Hi all!

Just got my new Cushcraft MA5B. The problem is that part number MA5BEF, description MA5B element EF (1-1/8" x 84") is slightly bent. This piece is the longest in the box. Has anyone else had this problem? Should I ask for a replacement or will is work o.k. as it is? Will it be as strong as one without a slight bend?

Any help on this matter would be appreciated.

Andy

2782. Subreflector of Cassegrain dish

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 09:50:03 UTC
From: Tom <truckdrivingman@hotmail.com>
Message-ID: <bh2g4e$97o$06$1@news.t-online.com>
Source record: 111027

Hi NG
How do you calculate the shape of a Cassegrain subreflector ? Can anybody
give me some formulas ?

73
Tom,DL7JSK

2783. Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 10:11:45 UTC
From: John <my-callsign@qsl.net>
Message-ID: <rN3Za.1074$r21.83626@newsfep2-gui.server.ntli.net>
Source record: 111028

Does coax have a shelf life?

I was rummaging around my father's garage the other day and came across a roll of URM43 that I know to be over 20 years old. It looks OK and the copper is shiny. However, can I be confident that it will not have lost any of its electrical or physical properties? I intend to take it on holiday with me soon and don't want it to fail.

Advice please!!

Thanks
John/G4IRN

2784. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 10:38:06 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <OE-dnVhJo6SSUqmiU-KYgg@crocker.com>
Source record: 111029

"John" <my-callsign@qsl.net> wrote in message
news:rN3Za.1074$r21.83626@newsfep2-gui.server.ntli.net...
> Does coax have a shelf life?
>
> I was rummaging around my father's garage the other day and came across a
> roll of URM43 that I know to be over 20 years old. It looks OK and the
> copper is shiny. However, can I be confident that it will not have lost
any
> of its electrical or physical properties? I intend to take it on holiday
> with me soon and don't want it to fail.
>
> Advice please!!
>
> Thanks
> John/G4IRN
>

as long as it was kept dry and not exposed to excessive heat or chemicals (oil or gasoline in a garage) it should be ok. give it a good flexing and check end to end to be sure the jacket isn't cracked. a quick electrical test is to hook it up to a dummy load, transmit on the highest frequency band you can and measure the power in and out (if you only have one meter you can make two separate measurements). as long as you aren't loosing too much it should be fine.

2785. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 11:07:12 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vj9lf92p1do35d@corp.supernews.com>
Source record: 111030

I'll second the advice. I've got plenty of coax well over 20 years old
that still measures the same as new coax.

You can also determine the loss by measuring the input impedance or SWR
of an open or short circuited piece of cable -- the better the SWR, the
higher the loss. Loss in dB = 10 * log[(SWR + 1) / (SWR - 1)].

I've seen just a couple of examples of very old, WWII vintage cable
whose dielectric had gotten brittle and cracked. That would probably
impact the characteristic impedance as well as the maximum
power-handling capability. But I haven't seen anything like that for
more recently manufactured cable -- others may have.

Roy Lewallen, W7EL

David Robbins wrote:
> "John" <my-callsign@qsl.net> wrote in message
> news:rN3Za.1074$r21.83626@newsfep2-gui.server.ntli.net...
>
>>Does coax have a shelf life?
>>
>>I was rummaging around my father's garage the other day and came across a
>>roll of URM43 that I know to be over 20 years old. It looks OK and the
>>copper is shiny. However, can I be confident that it will not have lost
>
> any
>
>>of its electrical or physical properties? I intend to take it on holiday
>>with me soon and don't want it to fail.
>>
>>Advice please!!
>>
>>Thanks
>>John/G4IRN
>>
>
>
> as long as it was kept dry and not exposed to excessive heat or chemicals
> (oil or gasoline in a garage) it should be ok. give it a good flexing and
> check end to end to be sure the jacket isn't cracked. a quick electrical
> test is to hook it up to a dummy load, transmit on the highest frequency
> band you can and measure the power in and out (if you only have one meter
> you can make two separate measurements). as long as you aren't loosing too
> much it should be fine.
>

>
>

2786. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 11:24:47 UTC
From: Frank Dinger <gm0csz.kn6wh@ntlworld.com>
Message-ID: <O3cZa.597$fZ3.484489@newsfep1-win.server.ntli.net>
Source record: 111058
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

>>Without saying anything, I went over to the
> >stairway switch and turned it on and off a few times. "On" caused the
> >interference. When we swapped the bulb with one in a floor lamp, the
> >floor lamp caused the same interference. It has been one of my enduring
> >regrets that I didn't ask to keep the bulb. It was probably thrown out.
==========
That bulb was probably an old coiled 'Edison' type . They were /are known to
form a tuned circuit resonating in the old TV band 1 (about 48 - 62 MHz)
acting as a TX when power is applied.

Frank GM0CSZ / KN6WH

2787. Re: Help needed with ARX220B

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 12:33:01 UTC
From: Jim Leder <jleder@cinci.rr.com>
Message-ID: <g6q9jvs2oros2238qgubj236rkdltegb8r@4ax.com>
Source record: 111031

I have the 2 meter version and had 2 of the 3 radials snapped off by a wayward tree limb during a big storm. Both broke at the end of the thread. My neighbor was able to re-thread THE OTHER END, and as a bonus, re-threaded the broken off end. The radials may be a little short (by less than an inch), but they still work as well as ever. Also, 36 inch aluminum rods can be purchased at Home Depot for around $4 per rod. These could also be threaded and cut to length.

2788. Re: GPS Active patch antenna 5v

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 12:34:20 UTC
From: "Gareth (G1LVN)" <gareth@mycallsign.freeserve.co.uk>
Message-ID: <bh2q2r$9t3$1@news8.svr.pol.co.uk>
Source record: 111032
Cross-posted to: rec.radio.amateur.antenna,uk.radio.amateur

"Gareth (G1LVN)" <gareth@mycallsign.freeserve.co.uk> wrote in message
news:bg3uagvtu1@news8.svr.pol.co.uk...
> "Gareth (G1LVN)" <gareth@mycallsign.freeserve.co.uk> wrote in message
> news:bg3oho$r8a$1@news8.svr.pol.co.uk...
> > Looking for a GPS magnetic mount antenna with say 10' of lead (SMB
connector).
> > What would be really nice if anyone knows where I can get one with an
> additional
> > fitting to take a (second) vhf type antenna. I've found fixed dual antennas
of
> > this type on the web use for vehicle tracking but ideally looking for a mag
> > mount, and surplus not new.
> >
> > - for an APRS project.
> >
> > .
> >
>
> to all the people who emailed me (including those with duff return emails???)
> wanting to know where the surface mount VHF/GPS antennas are, go here:
> http://www.mobilemark.com/GPS_Tracking_antennas.html (SM-150/1575)
>
> I am still looking for a similar dual band antenna that is Magnetic mounted,
if
> anyone can help.
>
> substitude mycallsign for g1lvn to reply by email
>

Just went for a cheap magmount GPS antenna in the end.

I'd recommend:

http://www.lynks.co.uk/antenna.html

They seem very efficient at ordering and dispatch an accept any kind of payment.
You get a real person on email not a robot (even at 2am!!!)

£37.95 (inc. P&P UK only) which seems a fair price for an active 5V magmount
with 3 m of cable and any connector you like. Lots of combined GPS GSM
antennas, but Combined V.H.F (2m) and you have to pay custom built prices (300
plus dollars).

2789. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 13:24:13 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <u9t9jvg6vn83qfaf95a9momaeuv1doc2vc@4ax.com>
Source record: 111020

On 08 Aug 2003 13:58:57 -0700, Javier Henderson <javier@KJSL.COM>
wrote:

>I got a Heathkit Cantenna recently, sans oil.
>
>Where do I find transformer oil? The few industrial suppliers in my
>area (Monterey, CA) want to sell me drums of the stuff. I only need
>a gallon...
>
>Is motor oil OK to use?
>
>73,
>-jav w6vms

I used drug store mineral oil in my Cantenna. Worked fine for 100
watts, but kind of expensive, buying it by the pint :-)

MFJ sells a gallon of transformer oil, by itself (they also sell their
version of the Cantenna). Check their website.

Bob
k5qwg

2790. Force 12 C-4

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 13:24:47 UTC
From: jerryz <jerryz@comcast.net>
Message-ID: <Us2cndOK7v6Ja6miXTWJjQ@comcast.com>
Source record: 111033

New Force 12 C-4 for sale. Never put up. NJ only please.

2791. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 14:01:10 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <G87Za.1290$Nf3.938@newsread4.news.pas.earthlink.net>
Source record: 111034

Hi Mike -

Thank you for your perspective and added comments.

I am well aware of the goofy patterns on the higher bands
exhibited by the one-size-fits-all dipoles; and I assume that
most other hams are also aware of this.

Said patterns do not seem to bother the advocates of this antenna type,
however. And it didn't seem worthwhile to me to get into an un-
provable debate as to whether those patterns are, or are not, a problem.

As for poring over the log and tweaking the knobs when you QSY,
that is certainly your right. But the instant-QSY guy may have bagged
the DX and moved on the next one while you're doing all that.

You may be stuck in a bit of a time warp as regards FCC monitoring--
even if your rig does not have good harmonic performance. As I hear
the CB-type operators polluting our bands with their profanities and
deliberate jamming--every day--I would WELCOME closer scrutiny
by some authority. If I ever get an OO notice (or call from another ham)
complaining about harmonics, then I'll start worrying about harmonics.

As for the joys of QRP, that's really OT for this thread. If you enjoy it,
that's great. Personally, I incline more towards the guys who say
"Life is too short for QRP."

73, Ed

"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bh1mf2$saup6$1@ID-134747.news.uni-berlin.de...
> Gee I spent not more than 2 hours with my MFJ259, my MFJ Tuner (I think it
> cost me 129.95 and is good for 300 watts, which is three times the power I
> will ever need, and 600 times the power that I used most of the time), and
> a pencil and paper. I am old fashioned and maintain a log. In the log I
> have recorded tuner settings for each of the ham bands. (75 and 80 are
> separate bands) QSY is a matter of referring to log, presetting dials,
and
> changing bands. If I feel the burning need a quick touch up of the
> capacitor and I am matched. My transceiver, and the DIP unit sit side by
> side on top of the tuner, so there is no significant footprint problem at
> the operating position.
>
> You failed to mention the only major drawback to the ladder line fed
> doublet that I am aware of. It develops some strange lobes as it gets
> longer. I have heard that the 44' length of the NorCal "Crappie" dipole
> was chosen as a compromise between 80 meter efficiency and 10 meter lobes.

> I have been scared of "fan" dipoles for years. I worry that given a
> reasonable radiator I put enough 7.810 signal on the air to upset the FCC
> when I was on 3.905. Of course the tuner you seem to refuse to run would
> help with that somewhat, but I still do not like having the nearly
resonate
> antenna connected to the transmitter any way. I have found out just how
> far I can talk with a couple of watts (halfway around the world, after
that
> it is shorter going the other way). I never have run an amplifier, there
> was a time I put 225 plus watts out on 80, and 40 (TR4) but since I got my
> first ICOM never more than 100, seldom that much. Still worried about
> harmonics where I have no business radiating, and the FT817 has
> dramatically demonstrated just how little power is required for a QSO.
> Amplify the harmonic, and couple it to a nearly resonate antenna, no thank
> you, I like my license to much, and do not have all that much money for
> fines laying around the house.
>
> --
> 73 es cul
>
> wb3fup
> a Salty Bear
>

2792. Re: Subreflector of Cassegrain dish

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 14:12:03 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F34FF10.7A77C81F@gte.net>
Source record: 111035

Tom wrote:

> Hi NG
> How do you calculate the shape of a Cassegrain subreflector ? Can anybody
> give me some formulas ?
>
> 73
> Tom,DL7JSK

Hi Tom,
From memory I recall that the subreflector is hyberboloid- Y=A/X.
I also recall from real world experience that these can be a nightmare to
align/optimize and one has to deal with significant aperture blockage.
Why would you want to use this system- are the feed/electronics too heavy to
mount out in front as in a prime focus dish?

Dale W4OP

2793. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 14:26:49 UTC
From: arrow146@aol.com
Message-ID: <20030809102649.03186.00001061@mb-m01.aol.com>
Source record: 111036

```
<< Subject: 2 meter / 440 antenna for sale ***NEW***
From: Mitch mitch@nospam.net
Date: Fri, Aug 8, 2003 10:03 PM
Message-id: <c309jvggil9i534taq90rrt21g4u24cumn@4ax.com>

http://www.mitchsantennas.cjb.net >>

>9-10dbi Gain on 440
>6.8dbi gain on 2 meters
ï¿½
>Antenna is a full Wave on 440
>and almost a full wave on 2 meters.
--------------------------------
Wow, must be magic copper water pipe.
Wish I could get that kind of gain from
my antennas.

73 Al Lowe N0IMW
<A HREF="http://ArrowAntennas.com">ArrowAntenna.com</A>
```

2794. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 14:49:16 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308090649.58de8f41@posting.google.com>
Source record: 111037

"Keyboard In The Wilderness" <KITW@forest.com> wrote in message
news:<fjUYa.31252$ff.5358@fed1read01>...
> Jav -- asked many times before -- for the answers go to Groups Google.com
> http://groups.google.com/

I don,t fully understand why motor oil should not be used
in a dummy load! I need to make one so I can calibrate
one of my instruments. I intend to use one of the uptodate
gallon paint cans that has a PTFE liner and solder the lid on.
Since we now have the means to use low wattage signals for
tuning up purposes there is obviously no reason to store it
in the shack . So what really is the problem with using
available oil instead of emulating the aproach of industrial
transformers or regurgitating old thoughts ?
Art

>
> Search for Oil For Cantenna or Oil For Dummy Load
>
> Mineral Oil works well for me.
>
>
> "Javier Henderson" <javier@KJSL.COM> wrote in message
> news:863cgbdfxq.fsf@skylane.kjsl.com...
> > I got a Heathkit Cantenna recently, sans oil.
> >
> > Where do I find transformer oil? The few industrial suppliers in my
> > area (Monterey, CA) want to sell me drums of the stuff. I only need
> > a gallon...
> >
> > Is motor oil OK to use?
> >
> > 73,
> > -jav w6vms

2795. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 15:28:00 UTC
From: Keyboard In The Wilderness <KITW@forest.com>
Message-ID: <4q8Za.31351$ff.14186@fed1read01>
Source record: 111038

From the Google Group Search Engine: For what it is worth

The Handbook (at least my 1990 edition) has some information on this
subject.
In the Station Accessories chapter there are plans to build a couple of
Cantenna type dummy loads. They mention an oil sold by Texaco (if I remember
correctly) for turbine lubrication that is, according to the author, the
same
oil as is used in transformers. They quote the exact product designation.
Apparently, it's sold in minimum 5 gallon quantities and I think it's about
$5 per gallon. If anyone's interested, let me know and I'll look up the
information and pass it along. It's supposed to be PCB-free, also.

The article also cautions against using motor oil for various reasons, among
which is that it attacks the resistor (actually, I think it's the additives
that cause the problem).

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
news:85ed38d.0308090649.58de8f41@posting.google.com...
> "Keyboard In The Wilderness" <KITW@forest.com> wrote in message
news:<fjUYa.31252$ff.5358@fed1read01>...
> > Jav -- asked many times before -- for the answers go to Groups
Google.com
> > http://groups.google.com/
>
> I don,t fully understand why motor oil should not be used
> in a dummy load! I need to make one so I can calibrate
> one of my instruments. I intend to use one of the uptodate
> gallon paint cans that has a PTFE liner and solder the lid on.
> Since we now have the means to use low wattage signals for
> tuning up purposes there is obviously no reason to store it
> in the shack . So what really is the problem with using
> available oil instead of emulating the aproach of industrial
> transformers or regurgitating old thoughts ?
> Art
>
>
>
>
>
>
>
> >
> > Search for Oil For Cantenna or Oil For Dummy Load
> >

> > Mineral Oil works well for me.
> >
> >
> > "Javier Henderson" <javier@KJSL.COM> wrote in message
> > news:863cgbdfxq.fsf@skylane.kjsl.com...
> > > I got a Heathkit Cantenna recently, sans oil.
> > >
> > > Where do I find transformer oil? The few industrial suppliers in my
> > > area (Monterey, CA) want to sell me drums of the stuff. I only need
> > > a gallon...
> > >
> > > Is motor oil OK to use?
> > >
> > > 73,
> > > -jav w6vms

2796. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 16:02:26 UTC
From: k9sqg@aol.com
Message-ID: <20030809120226.07279.00001005@mb-m12.aol.com>
Source record: 111039

Mineral oil from the drugstore works just fine, is easy to get, and is inexpensive. BUT keep the dummy load in a small plastic pail/pan. When it overheats, it vents to the top and then down the sides.

2797. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 16:12:51 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh36i7$uga2g$1@ID-134747.news.uni-berlin.de>
Source record: 111040

Ran it on EZNEC. Over a "Perfect Ground" 10 feet up it showed a beautiful
Omni pattern on two with 9.87 dbi gain, and on 440 the pattern had some
lack of uniformity in the horizontal pattern but an 11.82 dbi gain. Guess
copper pipe can be "magic". and since bandwidth is directly proportional
to conductor diameter it probably would cover the entire band very nicely.

--
73 es cul

wb3fup
a Salty Bear

"Arrow146" <arrow146@aol.com> wrote in message
news:20030809102649.03186.00001061@mb-m01.aol.com...
> << Subject: 2 meter / 440 antenna for sale ***NEW***
> From: Mitch mitch@nospam.net
> Date: Fri, Aug 8, 2003 10:03 PM
> Message-id: <c309jvggil9i534taq90rrt21g4u24cumn@4ax.com>
>
> http://www.mitchsantennas.cjb.net >>
>
> >9-10dbi Gain on 440
> >6.8dbi gain on 2 meters
>
> >Antenna is a full Wave on 440
> >and almost a full wave on 2 meters.
> --------------------------------
> Wow, must be magic copper water pipe.
> Wish I could get that kind of gain from
> my antennas.
>
> 73 Al Lowe N0IMW
> <A HREF="http://ArrowAntennas.com">ArrowAntenna.com</A>

2798. Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 16:23:10 UTC
From: Stuart <srumley@sbcglobal.net>
Message-ID: <Od9Za.117$ou4.68@newssvr29.news.prodigy.com>
Source record: 111041

Antenna Group~

The squirrels here the my neighborhood have suddenly decided they like to eat my coax and control cables. They seem to be particularly attracted to the self-vulcanizing rubber used to seal the connections but they have eaten some coax cables as well. Anyone know of a cure for this problem?

Thanks

Stuart, ki6qp

2799. Re: Help needed with ARX220B

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 16:28:16 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030809122816.20257.00001349@mb-m29.aol.com>
Source record: 111042

>Also, 36 inch aluminum rods can be purchased at Home Depot for around
>$4 per rod. These could also be threaded and cut to length.

That's a good suggestion, but unfortunately I lack the tools to do that job..
:(
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

2800. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 16:29:40 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030809122940.20257.00001350@mb-m29.aol.com>
Source record: 111043

You could always try this:

http://www.harrietcarter.com/Detail.cfm?prod=5320&UDC=Y
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

2801. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 17:08:39 UTC
From: Joe Strain <jstrain1@cfl.rr.com>
Message-ID: <rU9Za.21947$qg3.1496036@twister.tampabay.rr.com>
Source record: 111044

Wildlife biologists have the problem of squirrels getting into their bird-boxes and they use a product called tanglefoot in a 1 gallon paint can that you trowel onto the post ot tree the squirrels(and raccons) use to make their raids ...Those that fail to ignore this stick sh*t become irrevocably glued where they step

It also is used to make glueboards for rodent trapping by troweling it onto cardboard panels...Try a pest control product supplier

Be wary, that stuff is really STICKY and I don't know YET how to get it off, and I been using it for years

Yodar
"Stuart" <srumley@sbcglobal.net> wrote in message
news:Od9Za.117$ou4.68@newssvr29.news.prodigy.com...
> Antenna Group~
>
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables.
Anyone know of a cure for this problem?
>
> Thanks
>
> Stuart, ki6qp
>
>
>

2802. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 17:13:37 UTC
From: John DeGood <nu3e@arrl.net>
Message-ID: <XJCcnd0uCYLgtqiiXTWJjQ@comcast.com>
Source record: 111045

> I tried to find the specific antenna you are considering using
> your links, but I wasn't able to do so with a reasonable amount
> of effort.

Sorry, my ISP recently ceased operation. You can find the page
originally referenced, at least in the near term, at:

http://users.tellurian.com/jdegood/coaxtrap/

It's simply a six-band trap dipole. The 5 pairs of coaxial-cable traps
provide significant physical shortening, although to fit in an attic
some or all of the outermost (80 meter) portion will probably have to be
run at right angles to the main dipole. The advantages of such a
resonant antenna include a decent match to a coax feedline and no-tune
operation (but over limited bandwidth, a side-effect of the reduced size.)

Another alternative for multi-band operation in a restricted space
situation such as an attic is a physically shortened dipole in
conjunction with a tuner and open wire feedline. For details, see:

http://www.arrl.org/tis/info/HTML/limited_space/limited1.html

73,

John NU3E

2803. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 17:22:07 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <35aZa.71328$cF.22640@rwcrnsc53>
Source record: 111046

T-C 17 Varminter!!

AKA: Thompson-Center, 17mm, handgun for killing rodents and other
pests. :-)

DD, W1MCE

Stuart wrote:

> Antenna Group~
>
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables. They seem to be particularly attracted to
> the self-vulcanizing rubber used to seal the connections but they have eaten
> some coax cables as well. Anyone know of a cure for this problem?
>
> Thanks
>
> Stuart, ki6qp
>
>

2804. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 17:27:13 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F352EB8.23A705D2@shaw.ca>
Source record: 111047

John wrote:
>
> Does coax have a shelf life?
>
> I was rummaging around my father's garage the other day and came across a
> roll of URM43 that I know to be over 20 years old. It looks OK and the
> copper is shiny. However, can I be confident that it will not have lost any
> of its electrical or physical properties? I intend to take it on holiday
> with me soon and don't want it to fail.
>
> Advice please!!
>
> Thanks
> John/G4IRN

I've never had new coax in fourty five years of hamming! I get old
stuff at flea markets or wherever and have used it with great success!
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2805. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 18:05:26 UTC
From: oldtime radio <nospam@spam.net>
Message-ID: <mudajvobatgrrpg6kkk6ugq9l2kr5bq3mj@4ax.com>
Source record: 111048

pellet gun

2806. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 18:11:52 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh3dh8$5pt$1@sparta.btinternet.com>
Source record: 111049

"Roy Lewallen" wrote
> You can also determine the loss by measuring the input impedance or SWR
> of an open or short circuited piece of cable -- the better the SWR, the
> higher the loss. Loss in dB = 10 * log[(SWR + 1) / (SWR - 1)].

==========

The above formula may be correct but it's not of any practical use.

(1) It applies only when SWR is measured by running alongside a slotted line with a voltmeter, stopping to make a note of the voltmeter readings at the max and min points, and then calculating Vmax/Vmin. It is of academic interest and is entirely unrelated to line Zo.

(2) The error in application arises from the confusion caused by the old-wives incorrect assumption that the TLI (Transmitter Loading Indicator) actually measures SWR. It doesn't.

(3) If the ordinary TLI did measure SWR then the measurement would apply only to 50-ohm lines. On any other line, such as old coax when Zo is unknown, the measurement would be meaningless.

(4) If the cable to be checked was really 50 ohms and the so-called SWR meter was standardised on 75 ohms then the measurement would be equally meaningless.

(5) If the shack 50-ohm SWR meter can be relied upon (and most of them can't) then the ONLY information to be gleaned is to measure both the short-circuit and open-circuit SWRs. If they are in the same ball park then the unknown cable is probably not far from 50 ohms.

(6) Line attenuation is a very small quantity. It is the most difficult of all line parameters to measure accurately. The last instrument to choose is the SWR meter in the shack. The most attrocious mechanical damage can be caused over a short length without hardly any effect on attenuation over a longer length. To detect the presence of other than catastrophic cable faults is not possible by attenuation tests. There are far more sensitive ways of detecting and locating faults.

(7) To check an old length of line just test for DC continuity and look at the ends. If all is bright and clean there's nothing wrong with it.

Reg, G4FGQ

2807. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 18:13:06 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bh3djingi0@208.206.142.110>
Source record: 111050

Irv Finkleman wrote:

> John wrote:
> >
> > Does coax have a shelf life?
> >
> > I was rummaging around my father's garage the other day and came across a
> > roll of URM43 that I know to be over 20 years old. It looks OK and the
> > copper is shiny. However, can I be confident that it will not have lost any
> > of its electrical or physical properties? I intend to take it on holiday
> > with me soon and don't want it to fail.
> >
> > Advice please!!
> >
> > Thanks
> > John/G4IRN
>
> I've never had new coax in fourty five years of hamming! I get old
> stuff at flea markets or wherever and have used it with great success!

One of the worst mistakes I ever made was a new roll of 9913! :-)

(Took it a couple years but it did fill with water)

2808. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 18:17:58 UTC
From: Keyboard In The Wilderness <KITW@forest.com>
Message-ID: <pVaZa.31372$ff.15802@fed1read01>
Source record: 111051

A Squirrel Terrier ?

Our Char-Peis did a good job on the varmits.

Heard there is some stuff to keep horses from chomping up fences -- and any other critter -- check the horse stores.

"oldtime radio" <nospam@spam.net> wrote in message news:mudajvobatgrrpg6kkk6ugq9l2kr5bq3mj@4ax.com...
> pellet gun

2809. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 18:54:18 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bh3fvojln1@slb6.atl.mindspring.net>
Source record: 111052

"oldtime radio" <nospam@spam.net> wrote in message
news:mudajvobatgrrpg6kkk6ugq9l2kr5bq3mj@4ax.com...
> pellet gun

I can guarantee a pellet rifle works wonders. Does good with stray mutts
too.

Dan/W4NTI

2810. Hygain 18AVT/WB Parts Traps, 80m coil whip etc.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 19:00:04 UTC
From: Alan Caplan <alan.caplan@frontiernet.net>
Message-ID: <UwbZa.51395$uj6.30459@news02.roc.ny>
Source record: 111053

I have traps for the 18AVT/WB.

10 Meter trap

15 Meter trap

20 meter trap

80 Loading coil, with whip assembly top hat plate with four radials.

Whip on 80 Meter is set for the phone band.

NO BASE ASSEMBLY

Have the M-1 tube and interconnecting tubing with clamps.

Use about 3 years and stored. Also have the conductive grease
which I also used on all antenna connections.

Condition is good coils are okay and 80 Meter coil has a
Q of 200 which is correct for this coil.

Interested email. $80 plus postage.

ex: Customer Service Hy-gain and Telex-Hy-gain these are hard to find items.

Alan K4AVQ ex: W0RIC

2811. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 19:10:29 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <A-ucnYeddKSy2qiiXTWJjw@comcast.com>
Source record: 111054

"Dick Carroll;" <dixie@townsqr.com> wrote in message
news:bh3djingi0@208.206.142.110...
> One of the worst mistakes I ever made was a new roll of 9913! :-)
>
> (Took it a couple years but it did fill with water)
>
A friend of mine saw a puddle of water under his rig. Closer examination showed it was coming out of the 9913. I think the flexible version is OK though. Still, I bought LMR400 at work. I use 9913 indoors only.

Tam/WB2TT

2812. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 19:10:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f354877_8@corp.newsgroups.com>
Source record: 111056

Reg Edwards wrote:

> Cec, Good, now we're back on track. But what's the 377 ohms of nothingness
> to do with a random length of wire which has any impedance you fancy just by
> connecting to it.

The ratio of the radiated E-field to H-field has no other choice.
If you stuff EM radiation into free space, the ratio of E-field to
H-field is 376.7 ohms. Zero energy is lost from the EM spectrum when
an electron throws off a photon (until that photon is annihilated).
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2813. Need HF / Mobile Antenna Recommendation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 19:11:51 UTC
From: Jim <jim@tovet.com>
Message-ID: <XHbZa.71981$cF.22414@rwcrnsc53>
Source record: 111055

Hi. I just purchased an FT-100 mobile rig. I want to put it in my 2003 Nissan Xterra. I am thinking of two antennas. One for HF / 6 Meters and the other for the VHF/UHF stuff. I'm trying to keep this as simple as possible, and I'm looking for recommendations. Right now I'm looking at the Outbacker for HF/6. Anyone using that? Any other suggestions? Do you recommend a mobile antenna tuner?
thanks
Jim KA1EUI
jim@tovet.com

2814. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 19:36:40 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjaja6meh6bcd6@corp.supernews.com>
Source record: 111057

Only at some distance from the antenna. You can create local E/H ratios
of nearly any value (magnitude and phase).

Roy Lewallen, W7EL

W5DXP wrote:
>
> The ratio of the radiated E-field to H-field has no other choice.
> If you stuff EM radiation into free space, the ratio of E-field to
> H-field is 376.7 ohms. Zero energy is lost from the EM spectrum when
> an electron throws off a photon (until that photon is annihilated).

2815. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 20:32:01 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjamh3pe3ooi40@corp.supernews.com>
Source record: 111059

Roy Lewallen wrote:
> Only at some distance from the antenna. You can create local E/H ratios
> of nearly any value (magnitude and phase).
>
> Roy Lewallen, W7EL
>
> W5DXP wrote:
>
>>
>> The ratio of the radiated E-field to H-field has no other choice.
>> If you stuff EM radiation into free space, the ratio of E-field to
>> H-field is 376.7 ohms. Zero energy is lost from the EM spectrum when
>> an electron throws off a photon (until that photon is annihilated).
>
>

The near field has a reactive component to the
impedance. But is it true that the real part of
that complex impedance must be 376.7 ohms resistive?

Bill W0IYH

2816. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 20:57:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjao1bor2l8u6c@corp.supernews.com>
Source record: 111060

William E. Sabin wrote:
> Roy Lewallen wrote:
>
>> Only at some distance from the antenna. You can create local E/H
>> ratios of nearly any value (magnitude and phase).
>>
>> Roy Lewallen, W7EL
>>
>> W5DXP wrote:
>>
>>>
>>> The ratio of the radiated E-field to H-field has no other choice.
>>> If you stuff EM radiation into free space, the ratio of E-field to
>>> H-field is 376.7 ohms. Zero energy is lost from the EM spectrum when
>>> an electron throws off a photon (until that photon is annihilated).
>>
>>
>>
>
> The near field has a reactive component to the impedance. But is it true
> that the real part of that complex impedance must be 376.7 ohms resistive?
>
> Bill W0IYH

Not at all. For example, the magnitude of of the wave impedance E/H is much lower than 377 ohms very close to a small loop, and much higher than 377 ohms very close to a short dipole. Interestingly, as you move away from a small loop, the magnitude of E/H actually increases to a value greater than 377 ohms, then slowly approaches 377 ohms from the high side as you move even farther away. The opposite happens for a short dipole -- the E/H ratio drops below 377 ohms some distance away (a fraction of a wavelength), then increases to 377 ohms as you go farther yet.

Roy Lewallen, W7EL

2817. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 21:15:36 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <YvdZa.2123$Nf3.181@newsread4.news.pas.earthlink.net>
Source record: 111061

Hi John -

I checked your link... It worked, and the article is excellent!

The antenna described looks very neat, and would be a
fun project for someone who enjoys home-brewing.

For someone preferring a minimum of home-brewing, W9INN
has about eight similar models (SSD series and MDX series),
ranging in length from 46 to 71 feet. I haven't tried them all,
but my experience with his MBD-847 and SSD-021-5 antennas
has been excellent.

73, Ed W6LOL

"John DeGood" <nu3e@arrl.net> wrote in message
news:XJCcnd0uCYLgtqiiXTWJjQ@comcast.com...
> > I tried to find the specific antenna you are considering using
> > your links, but I wasn't able to do so with a reasonable amount
> > of effort.
>
> Sorry, my ISP recently ceased operation. You can find the page
> originally referenced, at least in the near term, at:
>
> http://users.tellurian.com/jdegood/coaxtrap/
>
> It's simply a six-band trap dipole. The 5 pairs of coaxial-cable traps
> provide significant physical shortening, although to fit in an attic
> some or all of the outermost (80 meter) portion will probably have to be
> run at right angles to the main dipole. The advantages of such a
> resonant antenna include a decent match to a coax feedline and no-tune
> operation (but over limited bandwidth, a side-effect of the reduced size.)
>
> Another alternative for multi-band operation in a restricted space
> situation such as an attic is a physically shortened dipole in
> conjunction with a tuner and open wire feedline. For details, see:
>
> http://www.arrl.org/tis/info/HTML/limited_space/limited1.html
>
> 73,
>
> John NU3E
>

2818. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 21:30:40 UTC
From: Jerry Avins <jya@ieee.org>
Message-ID: <3F356800.1BEC0FBD@ieee.org>
Source record: 111062
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Eric Jacobsen wrote:
>
> On Fri, 08 Aug 2003 13:31:25 -0400, Jerry Avins <jya@ieee.org> wrote:
>
> > ... It has been one of my enduring regrets
> >that I didn't ask to keep the bulb. It was probably thrown out.
> >
> >Jerry
>
> I think that one may have been intended for an embassy somewhere...
>
About a year later, I read about such a bulb in QST. The author believed that Edison-effect electrons excited a self broad-band resonance in the doubly coiled filament, sustaining oscillation by a mechanism I forget, but that seemed reasonable at the time. Incandescent lamps are filled with low-pressure nitrogen to avoid damage from the Edison effect, and interaction with the gas figured in his explanation. It was that explanation that led me to build an open-air triode. I was surprised as anyone when that worked, and I took it as a confirming instance for the now-forgotten explanation.

Jerry
--
Engineering is the art of making what you want from things you can get.
ï¿½ï¿½ï¿½

2819. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 21:35:45 UTC
From: Jerry Avins <jya@ieee.org>
Message-ID: <3F356931.50C9C226@ieee.org>
Source record: 111063
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Frank Dinger wrote:
>
> >>Without saying anything, I went over to the
> > >stairway switch and turned it on and off a few times. "On" caused the
> > >interference. When we swapped the bulb with one in a floor lamp, the
> > >floor lamp caused the same interference. It has been one of my enduring
> > >regrets that I didn't ask to keep the bulb. It was probably thrown out.
> ================
> That bulb was probably an old coiled 'Edison' type . They were /are known to
> form a tuned circuit resonating in the old TV band 1 (about 48 - 62 MHz)
> acting as a TX when power is applied.
>
> Frank GM0CSZ / KN6WH

Thank you thankyouthankyou! I've been called a crazy liar more than once over that bulb. There was no channel 1 when that incident happened, but I suppose that a small change of geometry could raise the frequency. The explanation in QST had it that the frequency was swept over a fairly large range as the voltage varied during a cycle.

Jerry
--
Engineering is the art of making what you want from things you can get.
ï¿½ï¿½ï¿½

2820. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 21:41:34 UTC
From: Jim Thompson <Jim-T@analog_innovations.com>
Message-ID: <0iqajvcfdbrqbtf8qiqh0ld3006nceae19@4ax.com>
Source record: 111064
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

On Sat, 09 Aug 2003 17:35:45 -0400, Jerry Avins <jya@ieee.org> wrote:

> Engineering is the art of making what you want from things you can get.

Love that byline.

...Jim Thompson
--
James E.Thompson, P.E.	mens
Analog Innovations, Inc.	et
Analog/Mixed-Signal ASIC's and Discrete Systems	manus
Phoenix, Arizona Voice:(480)460-2350	
Jim-T@analog_innovations.com Fax:(480)460-2142	Brass Rat
http://www.analog-innovations.com	1962

For proper E-mail replies SWAP "-" and "_"

Why is it that Democrats can't debate politely?
And are only rude and interruptive.
Lack of mental capacity?

2821. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 22:35:08 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vjatp01v6saf6a@corp.supernews.com>
Source record: 111065

Squirrels aka Tree Rats ate a hole in my roof twice and got into the attic..
Best solution is kill em with whatever it takes..
They have no natural enemies here and multiply like rats..
They're cute but destructive rodents..
good luck
hank wd5jfr
"Stuart" <srumley@sbcglobal.net> wrote in message
news:Od9Za.117$ou4.68@newssvr29.news.prodigy.com...
> Antenna Group~
>
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables. They seem to be particularly attracted to
> the self-vulcanizing rubber used to seal the connections but they have
eaten
> some coax cables as well. Anyone know of a cure for this problem?
>
> Thanks
>
> Stuart, ki6qp
>
>

2822. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 22:48:25 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <5YKdncZqka6Q5qiiXTWJkA@ctc.net>
Source record: 111066

> Ran it on EZNEC. Over a "Perfect Ground" 10 feet up it showed a beautiful
> Omni pattern on two with 9.87 dbi gain, and on 440 the pattern had some
> lack of uniformity in the horizontal pattern but an 11.82 dbi gain. Guess
> copper pipe can be "magic". and since bandwidth is directly proportional
> to conductor diameter it probably would cover the entire band very nicely.
>
> --
> 73 es cul
>
> wb3fup
> a Salty Bear
>
> "Arrow146" <arrow146@aol.com> wrote in message
> news:20030809102649.03186.00001061@mb-m01.aol.com...
> > << Subject: 2 meter / 440 antenna for sale ***NEW***
> > From: Mitch mitch@nospam.net
> > Date: Fri, Aug 8, 2003 10:03 PM
> > Message-id: <c309jvggil9i534taq90rrt21g4u24cumn@4ax.com>
> >
> > http://www.mitchsantennas.cjb.net >>
> >
> > >9-10dbi Gain on 440
> > >6.8dbi gain on 2 meters
> >
> > >Antenna is a full Wave on 440
> > >and almost a full wave on 2 meters.
> > --------------------------------
> > Wow, must be magic copper water pipe.
> > Wish I could get that kind of gain from
> > my antennas.
> >
> > 73 Al Lowe N0IMW

He must be using some of the Monster pipe. Could be some of the oxygen free copper pipe :-)

2823. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 22:55:40 UTC
From: Jerry Avins <jya@ieee.org>
Message-ID: <3F357BEC.F75543CF@ieee.org>
Source record: 111067
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Jim Thompson wrote:
>
> On Sat, 09 Aug 2003 17:35:45 -0400, Jerry Avins <jya@ieee.org> wrote:
>
> > Engineering is the art of making what you want from things you can get.
>
> Love that byline.
>
> ...Jim Thompson

Thanks. As its author, I give you permission to use it freely.

Jerry
--
Engineering is the art of making what you want from things you can get.
ï¿½ï¿½ï¿½

2824. Re: Distance to Link Coupling in a Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 23:22:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh3vnlcuv1@hercules.btinternet.com>
Source record: 111068

"AL KA5JGV" wrote -
> Reg, thank you for the detailed explanation. You have given me plenty to
> work with and to contemplate on for my next loop project.
>
==========

Al, I was able to respond in some detail to your query because you gave me a clear idea of your objectives. It was also a topic likely to be of interest to other readers. I do appreciate that many questioners are unable to descibe a problem in terms which people like me (I'm no genius. Neither am I a mind-reader) are unable to understand sufficiently clearly. Furthermore, I have to be aware the enquirer is as likely to be just as unable to understand my reply as I am in understanding him. I have to guess a person's circumstances from an extremely limited amount of 'data'.

If we're not careful a thread continues with further questions, is extended interminably by well-intentioned and other 'do-gooders' and eventually fizzles out with everybody suffering from raised hackles. I mention these aspects of newsgroup info-exchange, or often mis-information exchange, for the benefit of other readers. Everybody has a different motive for joining in.
.....

Just to complete our technical discussion, if program RJELOOP3 does not make itself clear, then if you have N turns on the main loop and one turn closely-coupled turn of the same diameter connected to the receiver, then the Q of the main L-&-C tuned loop is damped with a resistance across it equal to N-squared times the receiver input resistance.

So, if there are 6 turns on the main loop and the receiver input resistance is 1000 ohms (a bipolar transistor) then the equivalent resistance shunting the main loop is 36,000 ohms. If the parallel resistance of the main loop is 100,000 ohms (a typical MF value) then the resulting operating Q of the circuit is reduced to roughly 1/3rd of its intrinsic value. This is over-coupling but may be acceptable.

But if the receiver input resistance is 50 ohms then you will feel obliged to do something about it. As you cannot reduce the number of turns on the coupling coil to less than 1 then, as described in my original reply, there is no alternative but to reduce the diameter of the coupling coil, either a square or circular, and locate it inside the main loop in the same plane. Using 12 or 10 gauge enamelled wire (a better appearance) it will be self-supporting.

Reply not needed. Just make an entry in your notebook. I have volumes A to S. The bookcase shelf is sagging. You are sure to be successful with your

experiments. It is impossible for an experiment to fail. ;o)

Reg, G4FGQ

2825. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-09 23:26:29 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh3vv9$u5e88$1@ID-134747.news.uni-berlin.de>
Source record: 110969

Ok. Go to EZNEC.COM and download the Demo and build the model yourself.
That is if you have any interest in participating, or you just want to
behave like lids, and mock. BTW the original poster should not have posted
his request for business here, but that is another story, and neither of
you chose to address that question.

I have been dealing with lids since 1976, and know how to do that. I am
about to demonstrate

--
73 es cul

wb3fup
a Salty Bear

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:5YKdncZqka6Q5qiiXTWJkA@ctc.net...
> > Ran it on EZNEC. Over a "Perfect Ground" 10 feet up it showed a
beautiful
> > Omni pattern on two with 9.87 dbi gain, and on 440 the pattern had some
> > lack of uniformity in the horizontal pattern but an 11.82 dbi gain.
Guess
> > copper pipe can be "magic". and since bandwidth is directly
proportional
> > to conductor diameter it probably would cover the entire band very
nicely.
> >
> > --
> > 73 es cul
> >
> > wb3fup
> > a Salty Bear
> >
> > "Arrow146" <arrow146@aol.com> wrote in message
> > news:20030809102649.03186.00001061@mb-m01.aol.com...
> > > << Subject: 2 meter / 440 antenna for sale ***NEW***
> > > From: Mitch mitch@nospam.net
> > > Date: Fri, Aug 8, 2003 10:03 PM
> > > Message-id: <c309jvggil9i534taq90rrt21g4u24cumn@4ax.com>
> > >
> > > http://www.mitchsantennas.cjb.net >>
> > >
> > > >9-10dbi Gain on 440
> > > >6.8dbi gain on 2 meters
> > >

> > > >Antenna is a full Wave on 440
> > > >and almost a full wave on 2 meters.
> > > --------------------------------
> > > Wow, must be magic copper water pipe.
> > > Wish I could get that kind of gain from
> > > my antennas.
> > >
> > > 73 Al Lowe N0IMW
>
>
> He must be using some of the Monster pipe. Could be some of the oxygen
free
> copper pipe :-)
>
>

2826. Bobtail Curtain Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 00:18:49 UTC
From: DOUGLAS SNOWDEN <snowden@peoplepc.com>
Message-ID: <vjblrrdjunf9f4@corp.supernews.com>
Source record: 110997

If one were to use aluminum tubing for the vertical elements on a bobtail curtain what would that do to the bandwidth and lengths of the elements as compared to a all wire curtain? I would like to use 2 inch tubing supported at the bottoms with a wooden post. I guess I might want to put extra insulation on the pipes since there would be a lot of voltage there ...

Doug N4IJ

2827. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 00:38:29 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <9ugZa.2190$Nf3.1694@newsread4.news.pas.earthlink.net>
Source record: 110970

I hope you're joking, Dan, and that you'd really try to get a
stray dog to your local rescue group or Humane Society.

But if you're NOT joking, I would just advise you not to
try shooting dogs in our neck of the woods.

"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
news:bh3fvojln1@slb6.atl.mindspring.net...
>
> "oldtime radio" <nospam@spam.net> wrote in message
> news:mudajvobatgrrpg6kkk6ugq9l2kr5bq3mj@4ax.com...
> > pellet gun
>
> I can guarantee a pellet rifle works wonders. Does good with stray mutts
> too.
>
> Dan/W4NTI
>
>

2828. Re: Need HF / Mobile Antenna Recommendation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 00:39:22 UTC
From: Craig Buck <k4ia@cox.net>
Message-ID: <4vgZa.11589$ug.4008@lakeread01>
Source record: 110971

Don't fool around with the OB. Who wants to get out of the car and switch
taps to change bands? Get the ATAS 120 from Yaesu. For VHF/UHF get a
separate mag mount antenna. The combination will keep you happy.
--
Radio K4ia
Craig "Buck"
Fredericksburg, VA USA
FISTS 6702 cc 788 Diamond 64
"Jim" <jim@tovet.com> wrote in message
news:XHbZa.71981$cF.22414@rwcrnsc53...
> Hi. I just purchased an FT-100 mobile rig. I want to put it in my 2003
> Nissan Xterra. I am thinking of two antennas. One for HF / 6 Meters and
> the other for the VHF/UHF stuff. I'm trying to keep this as simple as
> possible, and I'm looking for recommendations. Right now I'm looking at
the
> Outbacker for HF/6. Anyone using that? Any other suggestions? Do you
> recommend a mobile antenna tuner?
> thanks
> Jim KA1EUI
> jim@tovet.com
>
>

2829. Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 00:49:36 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308091649.2f83eed3@posting.google.com>
Source record: 110972

Hey,

I've been getting different readings on my power meter that depend on the length of coax that i use to the meter (into a Cantenna).

This is a push-pull VHF 300 watt transmitter with a coax stub harmonic filter on the output. My digital Daiwa will read about 310 watts incident power using a 4 foot RG-8X jumper coax (from filter to meter), and about 240 watts using a 12 foot section of RG-8X!!?? VSWR stays the same at about 1.4:1 .

There is the old ham wife's tale that you can tune your transmitter for a better match if you adjust the legnth of your coax to the antenna. And from a theoretical point of view, it _should_ be only a tale, because if your antenna is not a perfect 50 Ohms, the length of the coax should still not matter, because the constant VSWR circles around the center of the Smith Chart have just that, the same SWR independant of the wavelengths away from the antenna (assuming 50 Ohm transmission lines are used).

OTOH, the actual series equivalent complex impedance will be alternating from inductive to capacitive, every 1/2 wavelength. So perhaps this will tune/detune the amplifier?

Any non-bullsh** advice/explainations appreciated.

Dr. Slick

2830. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:08:24 UTC
From: k9sqg@aol.com
Message-ID: <20030809210824.24129.00001302@mb-m16.aol.com>
Source record: 110973

With a non-resistive load, the length of the coax and placement of an inexpensive (e.g. non-Bird) meter will cause different readings.

2831. Proposal : SWR meter - TLI

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:15:14 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh46b2lsv1@hercules.btinternet.com>
Source record: 110974

In view of the many years of confusion, misunderstandings, heated arguments, caused amonst radio amateurs by referring to that essential instrument, located between the transmitter output and its tuner/matching network, as an SWR meter, it is proposed its NAME be changed to the TLI.

ie., - the TRANSMITTER LOADING INDICATOR - which it what it actually is.

Reg, G4FGQ.

2832. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:21:08 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh46m4$3od$1@titan.btinternet.com>
Source record: 110975

Are squirrels edible ?

2833. Re: Proposal : SWR meter - TLI

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:27:01 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F359F65.85EFEB2E@cwis.net>
Source record: 110976

Reg,
Sure, why not.
'Doc

2834. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:29:30 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F359FFA.3841B722@cwis.net>
Source record: 110977

"Dr. Slick",
Sure, for the CB crowd, it's in increments of 3 feet.
'Doc

2835. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:37:45 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F35A1E9.22F71244@cwis.net>
Source record: 110978

Stuart,
Most of the other suggestions will probably work just
fine, but I have a suggestion which is much more satisfying.
The first part is the only dificult part, catching the little
buggers. That 'tangle foot' should work pretty slick, though.
Next, visit your local hardware store and buy a 4 oz. ball-pean
hammer. (Light ones are for squirrels and such, the heavier
ones are for bigger game.) Now, when you have one of the little
buggers caught, beat it to death with the hammer. Lot of work,
I know, but much more satisfying than shooting them.
'Doc

PS - An 18 oz. ball-pean hammer is legal for deer here.

2836. Re: GR 1710-P2 ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:42:23 UTC
From: nx7u@arrl.net
Message-ID: <3f35a282.3973371@news.west.cox.net>
Source record: 110979

The instrument you have goes with a GR1710 vector network analyzer
system, rated 400kHz-500MHz.
It is likely 50 ohms as the 75 ohm versions were clearly marked "75
ohms" all over the place.
RF IN is from the VNA sweeper,
REFLECT OUT is the reflected signal from the device under test,
REFERENCE OUT is the reference signal from the VNA
UNKNOWN is the DUT port.
Just a directional bridge arrangement, but set up for coherent
(vector, phase-referenced) measurements.

On Mon, 4 Aug 2003 17:00:48 -0500, "Henry Kolesnik"
<wd5jfr@oklahoma.net> wrote:

>I just got a General Radio 1710-P2 Transmission/Reflection Bridge with 4
>ports. On the front, RF IN, REFLECTION OUT, REFERENCE OUT (-12dB), and on
>the left side, UNKNOWN B. I can't find any docs on google so can anyone
>please tell me the frequency range, impedance and how the 4th port is used,
>or perhaps where to find more info.
>tnx
>hank wd5jfr
>
>

2837. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:53:01 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vjb9c0c8j2lgb7@corp.supernews.com>
Source record: 110980

In Oklahoma squirrels are consider game animals and have a season and bag limit. When I was in college about forty years one of my room mate was shot and squirrels every chnace he got. He also roasted possum! I didn't care for the taste of either.
hank wd5jfr
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:bh46m4$3od$1@titan.btinternet.com...
> Are squirrels edible ?
>
>
>

2838. Re: Trap dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 01:57:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f35a7ce$1_5@corp.newsgroups.com>
Source record: 110981

Ed Senior wrote:
> Actually, I rather LIKE the switchable-length transmission line idea.
> Could you refresh me on many different lengths do you find you need to
> be able to get the SWR below, say, 2:1 at every point in those 8 bands?

I use 5 different lengths in a binary pattern. It's described on my
web page. 0-32 total feet is needed to cover all of 75m.

> (I think we talked about this in an earlier thread, but I don't remember
> all the details.) How do you stow the tuning lengths, and how many
> physical switches (or plug-ins) are needed? When you do a typical
> band change, does "a couple" of switch operations literally mean two,
> or several? Any safety issues with the switches if you're running power?

The loops are about six inches apart on the outside of my window. I have
five 4PDT knife switches but I don't bother with the lower two on 75m.
I don't bother with the upper two on 10m. The knife switches handle 500
watts just fine.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2839. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:13:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f35ab81_5@corp.newsgroups.com>
Source record: 110982

Dr. Slick wrote:
> This is a push-pull VHF 300 watt transmitter with a coax stub
> harmonic filter on the output. My digital Daiwa will read about 310
> watts incident power using a 4 foot RG-8X jumper coax (from filter to
> meter), and about 240 watts using a 12 foot section of RG-8X!!?? VSWR
> stays the same at about 1.4:1 .

Remember the maximum power transfer theorem? The transmitter probably works
better into some impedances than into others. With an SWR of 1.4:1, the
transmitter will see a resistance between 35.7 ohms and 70 ohms with a reactance
between zero and about plus or minus j15. Knowing the frequency and VF of the
RG-8X, you should be able to estimate the two impedances seen by the transmitter.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2840. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:17:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f35ac6f_5@corp.newsgroups.com>
Source record: 110983

Reg Edwards wrote:
> Are squirrels edible ?

In Texas, we have a legal squirrel hunting season. They are not
bad eatin' around a campfire after a day of clearing land.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2841. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:28:25 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <FNWdnR3iCYsgM6iiXTWJig@ctc.net>
Source record: 110985

"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bh36i7$uga2g$1@ID-134747.news.uni-berlin.de...
> Ran it on EZNEC. Over a "Perfect Ground" 10 feet up it showed a beautiful
> Omni pattern on two with 9.87 dbi gain, and on 440 the pattern had some
> lack of uniformity in the horizontal pattern but an 11.82 dbi gain. Guess
> copper pipe can be "magic". and since bandwidth is directly proportional
> to conductor diameter it probably would cover the entire band very nicely.
>
> --
> 73 es cul
>
> wb3fup
> a Salty Bear
>
I don't have to run a program. Either the program is wrong, you entered
the wrong information, or there is no such thing as a perfect ground.
Just as if I know if I hold a rock in my hand and drop it , I know it will
fall, I know there is no way a 3 foot long antenna will have any gain over a
dipole in an omnidirectional patern. The dipole will not have a gain of
over 9 dbi in an omni patern.

2842. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:29:20 UTC
From: Keyboard In The Wilderness <KITW@forest.com>
Message-ID: <46iZa.31654$ff.1363@fed1read01>
Source record: 110984

Ya all betcha yor Grandaddy's plow

See Maisie's favorite rabbit, squirrel & raccoon recipes

http://www.funlinked.com/maisie/msrabbit.html

But posssum N Taters be a tut better

http://bertc.com/possum.htm

==========
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bh46m4$3od$1@titan.btinternet.com...
> Are squirrels edible ?
>
>
>

2843. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:34:58 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <P3KdnWWiZMPLLaiiU-KYgg@ctc.net>
Source record: 110987

> Are squirrels edible ?
>
Yes they are. Many have hunted them to eat. There are times of the year that you do not want to eat them as they could have parasites in them. As the temperature turns cold they are fine to eat.

Deer are thought of as varmints the same as rats are to some farmers when they eat their corn fields. Permits can be had to shoot them any time of year (out of the normal hunting season) if they become a nuisance.

Too many of any animal in the wrong area is bad and they must be eliminated by killing or moving.

2844. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:38:19 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh4b6u$tnld8$1@ID-134747.news.uni-berlin.de>
Source record: 110986

Yes they are. They are also probably protected during most of the year.
Here in Delaware the season on squirrel is in late September early October
if I recall correctly. Also in Delaware, do not know about other locales,
unless you are a farmer, living on a farm that provides a substantial
portion of your income it would get to be awfully expensive to shoot
squirrels, and get caught at it. There is an exception to most game laws
for farmers in the State - but thinking about it now it might just be an
exception from a license, not seasons.

--
73 es cul

wb3fup
a Salty Bear

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bh46m4$3od$1@titan.btinternet.com...
> Are squirrels edible ?
>
>
>

2845. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:45:22 UTC
From: Keyboard In The Wilderness <KITW@forest.com>
Message-ID: <5liZa.31662$ff.16959@fed1read01>
Source record: 110988

Now I do wanna tell ya, you jest ain't lived til you all had Squirrel Stew.

And that thar be why we got them Squirrel Terrers Dawgs down yonder.
==========
> > Are squirrels edible ?
> >
>

2846. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 02:55:19 UTC
From: Ed Senior <eseniorsREMOVE@earthlink.net>
Message-ID: <ruiZa.2240$Nf3.1648@newsread4.news.pas.earthlink.net>
Source record: 110989

Well, you sure started something, Stuart.
Alas, it doesn't look like much of it would be
very useful to you.

As for your responders who propose eating
squirrels, one has to accept it, I suppose.
Predation of larger animals on smaller animals
is part of nature's plan, like it or not.

But as for the folks who say they like to kill or
torture animals just for enjoyment, I hope they
are merely trying to be funny--in a bad taste way.

If they are serious, my revised hope is that they get
to meet some of their victims again--accompanied
by much larger friends from the animal kingdom--
at some point in the afterlife.

But this is probably a faint hope, even if there is
an afterlife. Most of the animals would be going
UP, and most sadistic animal-abusers would be
going DOWN. So their paths wouldn't cross.

"Stuart" <srumley@sbcglobal.net> wrote in message
news:Od9Za.117$ou4.68@newssvr29.news.prodigy.com...
> Antenna Group~
>
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables. They seem to be particularly attracted to
> the self-vulcanizing rubber used to seal the connections but they have
eaten
> some coax cables as well. Anyone know of a cure for this problem?
>
> Thanks
>
> Stuart, ki6qp
>
>

2847. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 03:06:57 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <lFiZa.73933$cF.23278@rwcrnsc53>
Source record: 110990

Yes.
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bh46m4$3od$1@titan.btinternet.com...
> Are squirrels edible ?
>
>
>

2848. EZ Way tower sheared hinge pin

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 03:12:20 UTC
From: ddl@danlan.*com
Message-ID: <1153864@news1.IPSWITCHS.CMM>
Source record: 110992

After doing some work on my antennas today I tilted up my trusty old EZ Way 40ft tower (circa 1959). To my horror, just as I got within a few degrees of vertical, the hinge pin sheared off on one side. The other side followed soon thereafter. This left the tower sort of hanging from the lip of the hinge and the tilt cable. After I got over the initial shock (and expectation that the tower would fall immediately) I stabilized the situation as best I could with various U-bolt kludges between the ground pole and the lower tower segment. The problem is that I can't see any safe way to bring the tower back down nor do I have the ability to repair the hinge in place (if in fact that is possible). Help? Is this a known failure mode? The tower itself is in good shape and I have kept the ground pole well painted, but I assume that the inside of the hinge just rusted away. It's a little scary having the tower in this state. :(

Dan Lanciani
ddl@danlan.*com

2849. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 03:26:17 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh4e0t$u1co6$1@ID-134747.news.uni-berlin.de>
Source record: 110991

A dipole has a gain of 3 dbi {DBI} decibels over an isotropic radiator in free space. As to the accuracy of EZNEC take that up with the author, Roy W. Lewallen often posts here regularly, and never with your "knowledgeable?" disdain..

Now back to the antenna at hand:

If you bothered to look at it you would see that it is phased, end fed dipoles. Funny things happen with phased arrays, some of the MAGIC in the MAGIC copper pipe is that phased arrays are generally constructed to obtain at least a little gain. On two the antenna is two 1/2 lambda radiators, on 440 the antenna is two end fed 3/2 lambda radiators.

I have no reason to doubt my ability to use EZNEC, it is by nature EZ and intuitive to use. Mr. Lewallen is owed a great deal for his contribution to the advancement of the radio art.

I would recommend to you that you remember that it is often better to keep one's mouth shut and be thought a fool, than to open it and remove all doubt. And I even gave you two opportunities.
--
73 es cul

wb3fup
a Salty Bear

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:FNWdnR3iCYsgM6iiXTWJig@ctc.net...
>
> "WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
> news:bh36i7$uga2g$1@ID-134747.news.uni-berlin.de...
> > Ran it on EZNEC. Over a "Perfect Ground" 10 feet up it showed a
beautiful
> > Omni pattern on two with 9.87 dbi gain, and on 440 the pattern had some
> > lack of uniformity in the horizontal pattern but an 11.82 dbi gain.
Guess
> > copper pipe can be "magic". and since bandwidth is directly
proportional
> > to conductor diameter it probably would cover the entire band very
nicely.
> >
> > --
> > 73 es cul
> >
> > wb3fup
> > a Salty Bear

> >
> I don't have to run a program. Either the program is wrong, you entered
> the wrong information, or there is no such thing as a perfect ground.
> Just as if I know if I hold a rock in my hand and drop it , I know it
will
> fall, I know there is no way a 3 foot long antenna will have any gain
over a
> dipole in an omnidirectional patern. The dipole will not have a gain of
> over 9 dbi in an omni patern.
>
>

2850. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 04:02:01 UTC
From: mailfrmpa@aol.com
Message-ID: <20030810000201.14567.00001275@mb-m02.aol.com>
Source record: 110993

>Too many of any animal in the wrong area is bad and they must be eliminated
>by killing or moving.
>
>

Kinda like candidates for governor in California!

2851. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 04:21:30 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <eLjZa.11256$VR6.213155@twister.southeast.rr.com>
Source record: 110994

Figured yiu have enough advice on the oil so here is my story.
I had a cantenna that set beneath my bech for about seven years. One day I sat down at the bench and felt oil all over the floor. The bottom of the can had rusted out. After procurring a new paint can I tinned the outside of the can with solder. New can has lasted 18 years so far without any sign of rust. However it has never been on a bare concrete floor either.

"Javier Henderson" <javier@KJSL.COM> wrote in message
news:863cgbdfxq.fsf@skylane.kjsl.com...
> I got a Heathkit Cantenna recently, sans oil.
>
> Where do I find transformer oil? The few industrial suppliers in my
> area (Monterey, CA) want to sell me drums of the stuff. I only need
> a gallon...
>
> Is motor oil OK to use?
>
> 73,
> -jav w6vms

2852. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 04:33:34 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <7tadnSAsV5e6VqiiU-KYuQ@comcast.com>
Source record: 110995

You don't say what VHF frequency, but the Cantenna is probably unsuitable at that frequency. Your amp is spec'd to put out 300W into 50 Ohms, not 35 or 70. It could put out more or less power into a different impedance. Your best bet is to build a little L network right at the Cantenna, adjust it for 1:1 SWR, and then measure the power. Another approach would be to string all the RG58 you own in series with the 8X.

Tam/WB2TT

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308091649.2f83eed3@posting.google.com...
> Hey,
>
> I've been getting different readings on my power meter that
> depend on the length of coax that i use to the meter (into a
> Cantenna).
>
> This is a push-pull VHF 300 watt transmitter with a coax stub
> harmonic filter on the output. My digital Daiwa will read about 310
> watts incident power using a 4 foot RG-8X jumper coax (from filter to
> meter), and about 240 watts using a 12 foot section of RG-8X!!?? VSWR
> stays the same at about 1.4:1 .
>
> There is the old ham wife's tale that you can tune your
> transmitter for a better match if you adjust the legnth of your coax
> to the antenna. And from a theoretical point of view, it _should_ be
> only a tale, because if your antenna is not a perfect 50 Ohms, the
> length of the coax should still not matter, because the constant VSWR
> circles around the center of the Smith Chart have just that, the same
> SWR independant of the wavelengths away from the antenna (assuming 50
> Ohm transmission lines are used).
>
> OTOH, the actual series equivalent complex impedance will be
> alternating from inductive to capacitive, every 1/2 wavelength.
> So perhaps this will tune/detune the amplifier?
>
> Any non-bullsh** advice/explainations appreciated.
>
>
> Dr. Slick

2853. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 04:40:57 UTC
From: tdonaly@aol.com
Message-ID: <20030810004057.08577.00000396@mb-m13.aol.com>
Source record: 110996

>
>Reg Edwards wrote:
>> Are squirrels edible ?
>
>In Texas, we have a legal squirrel hunting season. They are not
>bad eatin' around a campfire after a day of clearing land.
>--
>73, Cecil http://www.qsl.net/w5dxp
>

By God, that's why you Texans are so squirrely!
73,
Tom Donaly, KA6RUH

2854. Re: Need HF / Mobile Antenna Recommendation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 08:38:12 UTC
From: markt@kram.org
Message-ID: <ksch01-ro6.ln1@kram.org>
Source record: 110998

In article <4vgZa.11589$ug.4008@lakeread01>, Craig Buck <k4ia@cox.net> wrote:
>Don't fool around with the OB. Who wants to get out of the car and switch
>taps to change bands? Get the ATAS 120 from Yaesu. For VHF/UHF get a
>separate mag mount antenna. The combination will keep you happy.

I'll second that. I have an ATAS120 for HF/6m and a dualband 2m 1/4 wave
/ 70cm 5/8 wave for VHF/UHF. I find that combination a good compromise
between performance and "neatness".

Cheers,

Mark.

2855. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 10:05:16 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308100205.3bb760ef@posting.google.com>
Source record: 110999

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<7tadnSAsV5e6VqiiU-KYuQ@comcast.com>...
> You don't say what VHF frequency, but the Cantenna is probably unsuitable at
> that frequency. Your amp is spec'd to put out 300W into 50 Ohms, not 35 or
> 70. It could put out more or less power into a different impedance. Your
> best bet is to build a little L network right at the Cantenna, adjust it for
> 1:1 SWR, and then measure the power. Another approach would be to string all
> the RG58 you own in series with the 8X.
>
> Tam/WB2TT

Less than 150 MHz. Someone else suggested that i place the meter
right at the cantenna, to at least exclude the patch from meter to
dummy load.

Unfortunately, as i have mentioned before, the cantenna is not the
greatest 50 Ohms at anything above 10-20 MHz.

Slick

2856. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 10:11:06 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308100211.2c5ebf2e@posting.google.com>
Source record: 111000

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f35ab81_5@corp.newsgroups.com>...
>
> Remember the maximum power transfer theorem? The transmitter probably works
> better into some impedances than into others. With an SWR of 1.4:1, the
> transmitter will see a resistance between 35.7 ohms and 70 ohms with a reactance
> between zero and about plus or minus j15. Knowing the frequency and VF of the
> RG-8X, you should be able to estimate the two impedances seen by the transmitter.

Actually, i read off of my Smith Chart about +/- j20, but you are
close.

Anyhow, my point is that the ham "wife's tale" of adjusting the
coax length for lowest SWR may be truly just a tale.

However, in my case, the SWR doesn't change much, while the
INCIDENT power does!!! To me, this may be due to the fact that the PA
isn't 50 Ohms at the output (I'll bet not many really are), and so a
swing of +/- j20 may improve or degrade how close you are to a
conjugate match.

What do you dudes think?

Dr. Slick

2857. Re: Bobtail Curtain Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 10:51:09 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <0ImdnYOTk5w5vquiU-KYgg@crocker.com>
Source record: 111001

"DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
news:vjblrrdjunf9f4@corp.supernews.com...
> If one were to use aluminum tubing for the vertical elements on a bobtail
> curtain what would that do to the bandwidth and lengths of the elements as
> compared to a all wire curtain? I would like to use 2 inch
> tubing supported at the bottoms with a wooden post. I guess I might
> want to put extra insulation on the pipes since there would be a lot of
> voltage there ...
>
>
i would expect that 2" diameter legs would need to be shorter than all wire.
try one of the nec modelers to calculate how much. and yes, you need good
insulation at the feed point and the bottoms of the legs.

2858. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 11:39:08 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh5ass$2e2$1@sparta.btinternet.com>
Source record: 111002

Doc wrote -
> Next, visit your local hardware store and buy a 4 oz. ball-pean
> hammer. (Light ones are for squirrels and such, the heavier
> ones are for bigger game.) Now, when you have one of the little
> buggers caught, beat it to death with the hammer.

==========

Doc, tough little buggers, eh? I didn't realise squirrel meat needs
tenderising.

2859. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 11:51:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f36330e_8@corp.newsgroups.com>
Source record: 111003

Dr. Slick wrote:
> However, in my case, the SWR doesn't change much, while the
> INCIDENT power does!!!

Guess I wasn't clear. There are an infinite number of impedances
on a constant SWR circle. The transmitter likes some of those
impedances better than others.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2860. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 12:29:12 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <sUqZa.290$dj3.45836@nnrp1.ptd.net>
Source record: 111004

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f35ac6f_5@corp.newsgroups.com...
> Reg Edwards wrote:
> > Are squirrels edible ?
>
> In Texas, we have a legal squirrel hunting season. They are not
> bad eatin' around a campfire after a day of clearing land.
> --
> 73, Cecil http://www.qsl.net/w5dxp

You guys are lucky my XYL isn't watching this thread ... she is
a biologist, licensed by the PA State Game Commission as a
wildlife rehabilitator (she's currently raising ... for release ... about
a dozen orphaned baby squirrels ... probably does about 60 or
more each season, in addition to rehabbing maybe 2 dozen or
more injured adults.)

We have 12 acres of forest here, with squirrels, rabbits, possums,
several dozen wild turkeys, groundhogs, deer, fox, quail, and some
pheasants ... if I shot a single one, she'd shoot me (or worse :-)

Luckily, so far at least, no evidence of the local critter population
developing a taste for coax :-)

Carl - wk3c

2861. Re: EZ Way tower sheared hinge pin

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 12:36:20 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <8%qZa.291$dj3.45957@nnrp1.ptd.net>
Source record: 111005

I'm not familiar with the tower you're talking about, but in general
if it's not safe to take down without one, consider getting a mobile
crane (maybe a "bucket truck" would have enough capacity,
at that height and weight?) ... better to spend some $
than to risk life and limb (or have it fall on your house and cause
expensive damage).

Carl - wk3c

"Dan Lanciani" <ddl@danlan.*com> wrote in message
news:1153864@news1.IPSWITCHS.CMM...
> After doing some work on my antennas today I tilted up my trusty old EZ
Way
> 40ft tower (circa 1959). To my horror, just as I got within a few degrees
of
> vertical, the hinge pin sheared off on one side. The other side followed
> soon thereafter. This left the tower sort of hanging from the lip of the
> hinge and the tilt cable. After I got over the initial shock (and
expectation
> that the tower would fall immediately) I stabilized the situation as best
I
> could with various U-bolt kludges between the ground pole and the lower
tower
> segment. The problem is that I can't see any safe way to bring the tower
> back down nor do I have the ability to repair the hinge in place (if in
fact
> that is possible). Help? Is this a known failure mode? The tower itself
> is in good shape and I have kept the ground pole well painted, but I
assume
> that the inside of the hinge just rusted away. It's a little scary having
the
> tower in this state. :(
>
> Dan Lanciani
> ddl@danlan.*com

2862. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 12:45:02 UTC
From: Rob Judd <judd@ob-wan.com>
Message-ID: <3F363E4E.F273DB5C@ob-wan.com>
Source record: 110922
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Jerry Avins wrote:
>
> Eric Jacobsen wrote:
> >
> > On Fri, 08 Aug 2003 13:31:25 -0400, Jerry Avins <jya@ieee.org> wrote:
> >
> > > ... It has been one of my enduring regrets
> > >that I didn't ask to keep the bulb. It was probably thrown out.
> > >
> > >Jerry
> >
> > I think that one may have been intended for an embassy somewhere...
> >
> About a year later, I read about such a bulb in QST. The author believed
> that Edison-effect electrons excited a self broad-band resonance in the
> doubly coiled filament, sustaining oscillation by a mechanism I forget,
> but that seemed reasonable at the time. Incandescent lamps are filled
> with low-pressure nitrogen to avoid damage from the Edison effect, and
> interaction with the gas figured in his explanation. It was that
> explanation that led me to build an open-air triode. I was surprised as
> anyone when that worked, and I took it as a confirming instance for the
> now-forgotten explanation.

Open-air triode?? Do tell, you have me fascinated...

Rob

2863. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 13:03:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh5fr1$a4q$1@sparta.btinternet.com>
Source record: 111006

Way back in the 1970's I visited the National Physical Laboratory (NPL) at Teddington, West London.

I was priviledged to see, but not to touch, the National Standards of the Ohm and of the Volt. There were a number of 4-terminal resistors submerged in a temperature-controlled oil bath. There was about a dozen Western Cells with connecting wires submerged in another temperature-controlled oil bath. There were small fans in the oil to ensure a very slow circulation.

I asked my guide, the physicist responsible for maintaining these vital standards of measurement on which the Commercial, Industrial, Engineering, Scientific life of the Nation is supported, what special sort of oil was used in the baths?

He said it was the same stuff, without the perfume, as young men used for hair oil and came from a tree in Malaya.

Reg, G4FGQ

2864. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 13:29:49 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh5hch$ukc64$1@ID-134747.news.uni-berlin.de>
Source record: 111007

Take a trip though Fairmont Park in Philly. Nothing green below 4 of 5
foot. Overpopulation is as much a problem as over hunting, a potentially
more serious to humans as diseased animals die..

--
73 es cul

wb3fup
a Salty Bear

"Carl R. Stevenson" <wk3cqth@wk3c.com> wrote in message
news:sUqZa.290$dj3.45836@nnrp1.ptd.net...
>
> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> news:3f35ac6f_5@corp.newsgroups.com...
> > Reg Edwards wrote:
> > > Are squirrels edible ?
> >
> > In Texas, we have a legal squirrel hunting season. They are not
> > bad eatin' around a campfire after a day of clearing land.
> > --
> > 73, Cecil http://www.qsl.net/w5dxp
>
> You guys are lucky my XYL isn't watching this thread ... she is
> a biologist, licensed by the PA State Game Commission as a
> wildlife rehabilitator (she's currently raising ... for release ... about
> a dozen orphaned baby squirrels ... probably does about 60 or
> more each season, in addition to rehabbing maybe 2 dozen or
> more injured adults.)
>
> We have 12 acres of forest here, with squirrels, rabbits, possums,
> several dozen wild turkeys, groundhogs, deer, fox, quail, and some
> pheasants ... if I shot a single one, she'd shoot me (or worse :-)
>
> Luckily, so far at least, no evidence of the local critter population
> developing a taste for coax :-)
>
> Carl - wk3c
>

2865. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 13:33:42 UTC
From: oldtime radio <nospam@spam.net>
Message-ID: <icicjv09acgv7f9menbd1ghbqnn2ckhfok@4ax.com>
Source record: 111008

or squirrel dumplings.................

On Sat, 9 Aug 2003 19:45:22 -0700, "Keyboard In The Wilderness"
<KITW@forest.com> wrote:

>Now I do wanna tell ya, you jest ain't lived til you all had Squirrel Stew.
>
>And that thar be why we got them Squirrel Terrers Dawgs down yonder.
>================
>> > Are squirrels edible ?
>> >
>>
>

2866. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 13:54:56 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjcjl485n39v41@corp.supernews.com>
Source record: 111009

Roy Lewallen wrote:
>
>>
>> The near field has a reactive component to the impedance. But is it
>> true that the real part of that complex impedance must be 376.7 ohms
>> resistive?
>>
>> Bill W0IYH
>
>
> Not at all. For example, the magnitude of of the wave impedance E/H is
> much lower than 377 ohms very close to a small loop, and much higher
> than 377 ohms very close to a short dipole. Interestingly, as you move
> away from a small loop, the magnitude of E/H actually increases to a
> value greater than 377 ohms, then slowly approaches 377 ohms from the
> high side as you move even farther away. The opposite happens for a
> short dipole -- the E/H ratio drops below 377 ohms some distance away (a
> fraction of a wavelength), then increases to 377 ohms as you go farther
> yet.
>
> Roy Lewallen, W7EL
>

There seems to more explanation needed.

If a lossless dipole is loaded with 100 W of
real power, that is the real power in the far
field, and it is also the real power very close to
the antenna, regardless of the type of antenna.

The value of real power is the same everywhere.

Since real power is in the real part of the
impedance, then how does the value of real
impedance (not the magnitude of impedance) vary
with distance from the antenna?

It seems that very close to (but slightly removed
from) the antenna the real part of the resistive
space impedance is nearly the same as the real
part of the driving point impedance of the
antenna. This real part is then transformed to 377
ohms (real) within the near field, suggesting that
the open space adjacent to the antenna performs an
impedance transformation. The near-field reactive
fields perform this function in some manner.

The real power radiated is found by integrating the Poynting vector slightly outside the surface of the antenna, and is equal to the real power into the (lossless) antenna. This value is constant everywhere beyond the antenna.

Bill W0IYH

2867. 900/1800 Mhz antenna on a printed circuit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 13:57:14 UTC
From: BPA <AA@BB.com>
Message-ID: <3f364f6a$0$9621$7a628cd7@news.club-internet.fr>
Source record: 111010

I'm looking for a simple bi-band GSM antenna (900/1800 Mhz) build with a printed circuit.

Does anybody have a shematic or a design sample ?

Thanks in advance.

2868. EZNEC and Half Square

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 14:23:14 UTC
From: Jim Leder <jleder@cinci.rr.com>
Message-ID: <m4lcjv47447ik98e1t2hifndoj47j7ir94@4ax.com>
Source record: 111011

I'm new to EZNEC, and not too skilled but trying to learn. Does anyone have a .ez file for a corner connected half square they would be willing to share? If so, please EMAIL it to jleder@cinci.rr.com . Thanks!

2869. Re: Need HF / Mobile Antenna Recommendation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 14:25:44 UTC
From: Jim <jim@tovet.com>
Message-ID: <IBsZa.113223$Ho3.12921@sccrnsc03>
Source record: 111012

Thanks for the input. I live in the Boston MA area, and drive the highway in and out of the city each day. I often park right along the ocean too, and we're talking the frigid North Atlantic here! I've had times where it's difficult to get into my vehicle from the ice that can build on it. I'm concerned that the motor in the antenna might freeze up. Any thoughts on that?
Thanks
Jim KA1EUI

"Mark Turner" <markt@kram.org> wrote in message
news:ksch01-ro6.ln1@kram.org...
> In article <4vgZa.11589$ug.4008@lakeread01>, Craig Buck <k4ia@cox.net>
wrote:
> >Don't fool around with the OB. Who wants to get out of the car and
switch
> >taps to change bands? Get the ATAS 120 from Yaesu. For VHF/UHF get a
> >separate mag mount antenna. The combination will keep you happy.
>
> I'll second that. I have an ATAS120 for HF/6m and a dualband 2m 1/4 wave
> / 70cm 5/8 wave for VHF/UHF. I find that combination a good compromise
> between performance and "neatness".
>
> Cheers,
>
> Mark.

2870. Re: Need HF / Mobile Antenna Recommendation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 14:49:41 UTC
From: markt@kram.org
Message-ID: <5l2i01-1f7.ln1@kram.org>
Source record: 111015

In article <IBsZa.113223$Ho3.12921@sccrnsc03>, Jim <jim@tovet.com> wrote:
>Thanks for the input. I live in the Boston MA area, and drive the highway
>in and out of the city each day. I often park right along the ocean too,
>and we're talking the frigid North Atlantic here! I've had times where it's
>difficult to get into my vehicle from the ice that can build on it. I'm
>concerned that the motor in the antenna might freeze up. Any thoughts on
>that?

Apart from the obvious (and probably unhelpful) comment that you shouldn't
try to tune the ATAS120 while it is frozen, no sorry no thoughts.

Most of my mobile HFing is on 20m where I find that the ATAS120 seems to
have a wide enough bandwidth that I hardly ever need to retune unless
I change band away from 20m. So, it might still be practical if you
don't want to retune while conditions are cold enough that the motor
etc. might be frozen up. I've only been using mine about a month so I
have no idea what will happen in the winter months when it gets iced up.

Cheers,

Mark.

2871. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 14:58:53 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <k9ncjvg6o4vchq8gdpvl9rspbpaujavm8j@4ax.com>
Source record: 111013

Jav...

I've had one for about 30 years, run everything from an 80m Kallyfornia Kilowatt to a 1 watt aircraft transmitter into nothing more than K-mart automatic transmission fluid. Excellent results.

BTW, read your local paper when it lists the 150+ people running for governor. Expecially read the last names beginning with W {;-)

Jim

Javier Henderson <javier@KJSL.COM>
shared these priceless pearls of wisdom:

->I got a Heathkit Cantenna recently, sans oil.
->
->Where do I find transformer oil? The few industrial suppliers in my
->area (Monterey, CA) want to sell me drums of the stuff. I only need
->a gallon...
->
->Is motor oil OK to use?
->
->73,
->-jav w6vms

Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

2872. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 15:04:59 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <n0SdnZUE-Ka4wquiXTWJjA@comcast.com>
Source record: 111014

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308100205.3bb760ef@posting.google.com...
Someone else suggested that i place the meter
> right at the cantenna, to at least exclude the patch from meter to
> dummy load.
>
No, you don't want to do that. Put as much loss as you can between the meter and the Cantenna. 100 feet of RG58 will have about 6.5 db of loss. It will make your load a lot closer to 50 Ohms. There are Tables that show SWR as a function of cable loss for a given mismatch. One chart that I have in "Reference Data for Radio Engineers" shows that with a load SWR of 1.4, and 6.5 db of cable loss, the SWR at the driving end is around 1.075. Note that you DO NOT want low loss coax.

Tam/WB2TT

2873. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 15:19:18 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308100719.2893b527@posting.google.com>
Source record: 111016

Well it would seem that the 'don't use motor oil' comment
which has been passed on by mouth to mouth over the decades
doesn't seem to stand up to scruteny.
Yes, the question is raised so many times over the years
and the same old stories pop up, but without any
substantiation such that it just appears to be gossip.
One statement mentions attack on resisters, where's the proof,
If it is true then it surely can be easily overcome.
Hopefully this time, one of the many posters over the
years on this subject will make observations that are
relevant to the present day instead of waiting for a book.
Art

"Keyboard In The Wilderness" <KITW@forest.com> wrote in message
news:<4q8Za.31351$ff.14186@fed1read01>...
> From the Google Group Search Engine: For what it is worth
>
> The Handbook (at least my 1990 edition) has some information on this
> subject.
> In the Station Accessories chapter there are plans to build a couple of
> Cantenna type dummy loads. They mention an oil sold by Texaco (if I remember
> correctly) for turbine lubrication that is, according to the author, the
> same
> oil as is used in transformers. They quote the exact product designation.
> Apparently, it's sold in minimum 5 gallon quantities and I think it's about
> $5 per gallon. If anyone's interested, let me know and I'll look up the
> information and pass it along. It's supposed to be PCB-free, also.
>
> The article also cautions against using motor oil for various reasons, among
> which is that it attacks the resistor (actually, I think it's the additives
> that cause the problem).
>
>
>
>
> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
> news:85ed38d.0308090649.58de8f41@posting.google.com...
> > "Keyboard In The Wilderness" <KITW@forest.com> wrote in message
> news:<fjUYa.31252$ff.5358@fed1read01>...
> > > Jav -- asked many times before -- for the answers go to Groups
> Google.com
> > > http://groups.google.com/
> >
> > I don,t fully understand why motor oil should not be used

> > in a dummy load! I need to make one so I can calibrate
> > one of my instruments. I intend to use one of the uptodate
> > gallon paint cans that has a PTFE liner and solder the lid on.
> > Since we now have the means to use low wattage signals for
> > tuning up purposes there is obviously no reason to store it
> > in the shack . So what really is the problem with using
> > available oil instead of emulating the aproach of industrial
> > transformers or regurgitating old thoughts ?
> > Art
> >
> >
> >
> >
> >
> >
> >
> > >
> > > Search for Oil For Cantenna or Oil For Dummy Load
> > >
> > > Mineral Oil works well for me.
> > >
> > >
> > > "Javier Henderson" <javier@KJSL.COM> wrote in message
> > > news:863cgbdfxq.fsf@skylane.kjsl.com...
> > > > I got a Heathkit Cantenna recently, sans oil.
> > > >
> > > > Where do I find transformer oil? The few industrial suppliers in my
> > > > area (Monterey, CA) want to sell me drums of the stuff. I only need
> > > > a gallon...
> > > >
> > > > Is motor oil OK to use?
> > > >
> > > > 73,
> > > > -jav w6vms

2874. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 15:45:33 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308100745.1c88e89c@posting.google.com>
Source record: 111017

"Stuart" <srumley@sbcglobal.net> wrote in message
news:<Od9Za.117$ou4.68@newssvr29.news.prodigy.com>...
> Antenna Group~
>
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables. They seem to be particularly attracted to
> the self-vulcanizing rubber used to seal the connections but they have eaten
> some coax cables as well. Anyone know of a cure for this problem?

You can "protect" your coax & control cables with an autoloading 105mm howitzer but for every one of the little beasts you terminate two more take it's place within minutes. Killing and/or trapping them is simply an exercise in futility. I see two choices: Squirrels have strong alergic reactions to cats. Big nasty young female cats preferably from feral stock. And don't feed 'em too much. There's one possibility.

The other is to use coax and control cables which have rodent-repelling jackets and sealants which tree rats don't like. For the coax see

http://www.davisrf.com/ham1/coax.htm#buryflex

There are probably control cables with the same general type jackets. Maybe tree rats don't like silicon sealants, I dunno. Check out

http://www.thewireman.com/products.html

No doubt both Steve at RF Davis and Pres at the Wireman have handled the problem many times, give 'em a buzz, it's only phone calls, save yourself from the goo and ammo expenses.

> Thanks
>
> Stuart, ki6qp

w3rv

2875. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 15:48:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gvpcjv4066u3ckp1ck0kphm6ik5ipe4guj@4ax.com>
Source record: 111018

On 9 Aug 2003 17:49:36 -0700, radio913@aol.com (Dr. Slick) wrote:

>Hey,
>
> I've been getting different readings on my power meter that
>depend on the length of coax that i use to the meter (into a
>Cantenna).

On 10 Aug 2003 03:11:06 -0700, radio913@aol.com (Dr. Slick) wrote:

> However, in my case, the SWR doesn't change much, while the
>INCIDENT power does!!! To me, this may be due to the fact that the PA
>isn't 50 Ohms at the output

On 10 Aug 2003 03:05:16 -0700, radio913@aol.com (Dr. Slick) wrote:

>
> Unfortunately, as i have mentioned before, the cantenna is not the
>greatest 50 Ohms at anything above 10-20 MHz.

A classic re-creation of Mismatch Uncertainty already discussed at
great length in the thread "The Cecilian Gambit, a variation on the
Galilean Defense revisited."

Search google for details.

73's
Richard Clark, KB7QHC

2876. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 16:00:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rdqcjvoqdlc5ldvfiej8tt8hlr13uu47cl@4ax.com>
Source record: 110919

On Sun, 10 Aug 2003 08:54:56 -0500, "William E. Sabin"
<sabinw@mwci-news> wrote:

>It seems that very close to (but slightly removed
>from) the antenna the real part of the resistive
>space impedance is nearly the same as the real
>part of the driving point impedance of the
>antenna. This real part is then transformed to 377
>ohms (real) within the near field, suggesting that
>the open space adjacent to the antenna performs an
>impedance transformation. The near-field reactive
>fields perform this function in some manner.
>

The figures at:
http://home.comcast.net/~kb7qhc/antennas/Fields/Dipole/index.htm
illustrate just how the dipole's near-field reactance maps out
(without respect for phase, and expressed in SWR relative to free
space Z).

Note that employing the term transform and antenna within the same
context is not de rigueur. ;-)

73's
Richard Clark, KB7QHC

2877. Re: Proposal : SWR meter - TLI

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 16:04:01 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308100804.4d98b3dd@posting.google.com>
Source record: 110920

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bh46b2lsv1@hercules.btinternet.com>...
> In view of the many years of confusion, misunderstandings, heated arguments,
> caused amonst radio amateurs by referring to that essential instrument,
> located between the transmitter output and its tuner/matching network, as an
> SWR meter, it is proposed its NAME be changed to the TLI.
>
> ie., - the TRANSMITTER LOADING INDICATOR - which it what it actually is.

Hi Reg,

D'you suppose you could explain just a wee bit more what you mean by
"Transmitter Loading Indicator"? I'd have thought my rig's plate
current meter (and its response to the "tuning" and "loading"
controls) handled that pretty well.

Cheers,
Tom

2878. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 16:17:11 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308100817.31b4cb1@posting.google.com>
Source record: 110921

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308100211.2c5ebf2e@posting.google.com>...
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f35ab81_5@corp.newsgroups.com>...
> >
> > Remember the maximum power transfer theorem? The transmitter probably works
> > better into some impedances than into others. With an SWR of 1.4:1, the
> > transmitter will see a resistance between 35.7 ohms and 70 ohms with a reactance
> > between zero and about plus or minus j15. Knowing the frequency and VF of the
> > RG-8X, you should be able to estimate the two impedances seen by the transmitter.
>
>
> Actually, i read off of my Smith Chart about +/- j20, but you are
> close.
>
> Anyhow, my point is that the ham "wife's tale" of adjusting the
> coax length for lowest SWR may be truly just a tale.
>
> However, in my case, the SWR doesn't change much, while the
> INCIDENT power does!!! To me, this may be due to the fact that the PA
> isn't 50 Ohms at the output (I'll bet not many really are), and so a
> swing of +/- j20 may improve or degrade how close you are to a
> conjugate match.
>
> What do you dudes think?

Instrument it properly and answer your own question. Measure the
power at both ends at the same time. Then, assuming you have good
power meters, calibrated to the line you're using, you'll know if the
input end of the coax also experiences the same power difference. If
it does, then it's presumably the output of the transmitter/filter
that changes. You've already offered a very reasonably hypothesis
about why that happens, and could prove/disprove that through some
measurements, too. Is the transmitter a linear time-invariant system?
(Or does it have a load sensor that reduces power output for some
loads?) Can you determine the actual source impedance of your
amplifier, and correlate that with the readings you've gotten?

I trust that the readings you got weren't much of a surprise...

Cheers,
Tom

2879. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 16:21:21 UTC
From: R J Carpenter <rcarpen@erols.com>
Message-ID: <bh5urbgfv1@bob.news.rcn.net>
Source record: 110925
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

"Rob Judd" <judd@ob-wan.com> wrote in message
news:3F363E4E.F273DB5C@ob-wan.com...

> Open-air triode?? Do tell, you have me fascinated...

IIRC, field effect triodes {FETs} were made about the same time as the first
vacuum tubes, but they didn't work well enough, given materials technology
of the day.

2880. Re: Proposal : SWR meter - TLI

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 17:00:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh5to6$9ok$1@hercules.btinternet.com>
Source record: 110923

Tom wrote-
> D'you suppose you could explain just a wee bit more what you mean by
> "Transmitter Loading Indicator"? I'd have thought my rig's plate
> current meter (and its response to the "tuning" and "loading"
> controls) handled that pretty well.

A TLI indicates whether the transmitter is correctly loaded, or is not correctly loaded, with its designed-for load resistance.

Which is all the operator needs to know and is all the so-called SWR ever indicates.

If you use your plate current meter (minimum dip) to monitor correct loading of your PA, then your variable PA tank circuit becomes the tuner, and you have not merely abandoned the name of the so-called SWR meter - you have completely abolished the instrument from your shack.

Congratulations!

Reg, G4FGQ

2881. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 17:07:39 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vjcv17oe8s8j7c@corp.supernews.com>
Source record: 110924

I live on a hill in the country where one can still practice ham radio
without interference from civilization. I used to see quite a few squirrels.
Although a12 gauge shotgun is instantaneously effective, the little buggers
breed like rats, er, squirrels. Since a feral cat I call Max (Short for
Hiram Percy Maxim, since he likes to nap on the S-Line.) has moved in, no
squirrels, skunks, raccoons, snakes, etc. Except for wild dogs, which I
shoot on sight, usually with a Weatherby 7mm08, with Max's approval, I might
add.
I vote for the cat option.
73
H.
NQ5H

"Brian Kelly" <kelly@dvol.com> wrote in message
news:d22b54c3.0308100745.1c88e89c@posting.google.com...
> "Stuart" <srumley@sbcglobal.net> wrote in message
news:<Od9Za.117$ou4.68@newssvr29.news.prodigy.com>...
> > Antenna Group~
> >
> > The squirrels here the my neighborhood have suddenly decided they like
to
> > eat my coax and control cables. They seem to be particularly attracted
to
> > the self-vulcanizing rubber used to seal the connections but they have
eaten
> > some coax cables as well. Anyone know of a cure for this problem?
>
> You can "protect" your coax & control cables with an autoloading 105mm
> howitzer but for every one of the little beasts you terminate two more
> take it's place within minutes. Killing and/or trapping them is simply
> an exercise in futility. I see two choices: Squirrels have strong
> alergic reactions to cats. Big nasty young female cats preferably from
> feral stock. And don't feed 'em too much. There's one possibility.
>
> The other is to use coax and control cables which have
> rodent-repelling jackets and sealants which tree rats don't like. For
> the coax see
>
> http://www.davisrf.com/ham1/coax.htm#buryflex
>
> There are probably control cables with the same general type jackets.
> Maybe tree rats don't like silicon sealants, I dunno. Check out
>
> http://www.thewireman.com/products.html

>
> No doubt both Steve at RF Davis and Pres at the Wireman have handled
> the problem many times, give 'em a buzz, it's only phone calls, save
> yourself from the goo and ammo expenses.
>
> > Thanks
> >
> > Stuart, ki6qp
>
> w3rv

2882. Layout for G5RV twin feedline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 17:22:10 UTC
From: Harry George <hgg9140@seanet.com>
Message-ID: <m3r83tv35p.fsf@wilma.local>
Source record: 110929

I'm putting in a G5RV. The twin lead feedline is of course part of the radiation system. Due to trees, powerlines, etc, I can:

a) Run it horizontally 90 deg away from the dipole, at 5 ft above roof ridgeline.

b) Run it 45 deg down for 15 ft then vertical for remainder (all at 90 deg to dipole). But it ends up between 2 houses, hidden by a hill.

c) Run it at about 15-45 deg to dipole, horizontally even with one leg of dipole.

Of course, one answer is "try them and see which works best". But if this is a well known problem with well-known solutions, I'd like to hear. I'm thinking "a" is my best bet, due to 90 to dipole, but I've never heard of running the feedline horizontally.

2883. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 17:23:25 UTC
From: Jerry Avins <jya@ieee.org>
Message-ID: <3F367F8D.6C64140F@ieee.org>
Source record: 110926
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Rob Judd wrote:
>
...

> Open-air triode?? Do tell, you have me fascinated...
>
> Rob

I wrote of it before, so I'll be brief and hope I'm not boring. An open-coil hot plate with a ceramic holder to support and contain the nichrome element as filament*. Topped with galvanized window screening, the zinc removed with muriatic acid so as not to noxiously sublime, resting on the ceramic as (literally!) grid. Small glass beads -- around 1/16" -- scattered on it to create a gap and hold the screening flat. Atop that, a pie tin weighted with cooling water to serve as (literally!) plate. With 700 volts on the plate, I got measurable current on my 1000 ohm/volt meter. At -90 volts on the grid, the current was too small to read. The gain was enough to sustain oscillation.

Jerry

_____
* Driven through an isolation transformer with grounded center tap.
--
Engineering is the art of making what you want from things you can get.
ï¿½ï¿½ï¿½

2884. Re: Bobtail Curtain Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 17:42:51 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F36841B.DE1C9F88@cwis.net>
Source record: 110927

Doug,
Depends on the frequency to a large extent. If
the antenna is for above 10 meters you may see some
slight increase in bandwidth by using the tubing,
same for the 'shortening' of the elements. At HF
frequencies the 2" diameter tubing will have very
little affect on either bandwidth or shortening.
Why would the voltages be higher on tubing rather
than on wire?
'Doc

2885. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 17:54:55 UTC
From: Jerry Avins <jya@ieee.org>
Message-ID: <3F3686EF.88D916BF@ieee.org>
Source record: 110928
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

R J Carpenter wrote:
>
> "Rob Judd" <judd@ob-wan.com> wrote in message
> news:3F363E4E.F273DB5C@ob-wan.com...
>
> > Open-air triode?? Do tell, you have me fascinated...
>
> IIRC, field effect triodes {FETs} were made about the same time as the first
> vacuum tubes, but they didn't work well enough, given materials technology
> of the day.

I thought that FETs dated to the early 30s. De Forest's "audion" was
invented in 1903 and made long-distance telephony practical by 1913.

Jerry

P.S. to Rick: That was before my time.
--
Engineering is the art of making what you want from things you can get.
ï¿½ï¿½ï¿½

2886. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 19:10:19 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vjd64isr422ic3@corp.supernews.com>
Source record: 110930

Dear Ed:
On my farm, varmints are shot on sight. There is no component of
hunting or enjoyment or torture. It is a matter of stopping theft and
the real danger that their holes present to livestock, humans, and even
farm machinery. (I have a nasty scar on my shin due to a plunge into a
woodchuck hole.) They also pose a danger to drainage systems.
I have never shot at a squirrel. They are very rare here and just
not a problem. Woodchucks and deer are the major problems. Deer cause
hundreds of accidents, some quite serious, per year in this county
alone.
Someone who took delight in torturing anything would be a pariah in
this most rural and tolerant township. That is just not on.
..... and back to antennas
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Ed Senior"
<snip>
>
> But as for the folks who say they like to kill or
> torture animals just for enjoyment, I hope they
> are merely trying to be funny--in a bad taste way.
>
> If they are serious, my revised hope is that they get
> to meet some of their victims again--accompanied
> by much larger friends from the animal kingdom--
> at some point in the afterlife.
>

2887. Re: EZ Way tower sheared hinge pin

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 19:13:42 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <2lydnce64sHtBKuiU-KYvw@comcast.com>
Source record: 110931

I can't quite visualize what happened, but is there a way to drive the broken pin out, and temporarily replace it with a steel rod? Might require a jack and clamps to line things up. Or, if the thing that holds the pin broke off, can you get a welder out there? You might also want to wrap some cable around the bottom of the tower and the ground pole so the thing can't swing out on you. I assume the ground pole is the raising fixture.

Tam/WB2TT
"Dan Lanciani" <ddl@danlan.*com> wrote in message
news:1153864@news1.IPSWITCHS.CMM...
> After doing some work on my antennas today I tilted up my trusty old EZ
Way
> 40ft tower (circa 1959). To my horror, just as I got within a few degrees
of
> vertical, the hinge pin sheared off on one side. The other side followed
> soon thereafter. This left the tower sort of hanging from the lip of the
> hinge and the tilt cable. After I got over the initial shock (and
expectation
> that the tower would fall immediately) I stabilized the situation as best
I
> could with various U-bolt kludges between the ground pole and the lower
tower
> segment. The problem is that I can't see any safe way to bring the tower
> back down nor do I have the ability to repair the hinge in place (if in
fact
> that is possible). Help? Is this a known failure mode? The tower itself
> is in good shape and I have kept the ground pole well painted, but I
assume
> that the inside of the hinge just rusted away. It's a little scary having
the
> tower in this state. :(
>
> Dan Lanciani
> ddl@danlan.*com

2888. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 19:28:11 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjd761s49sqid0@corp.supernews.com>
Source record: 110932

Richard Clark wrote:
>
>
> Note that employing the term transform and antenna within the same
> context is not de rigueur.

It is 100 percent correct and appropriate.

Bill W0IYH

2889. double sized quad antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 19:41:55 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <+lLfUOBDAqN$EwJB@b-howie.demon.co.uk>
Source record: 110933

I recall many years ago seeing a 3 ele quad antenna in one of the RSGB handbooks. Instead of the usual 1 lambda loops it used 2 lambda and had an open circuit at the top of each element -it may also have been fed by a 1/4 matching transformer. The claimed gain was high. Does anyone have any info ?

Brian GM4DIJ
--
Brian Howie

2890. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 20:28:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjdantrlfh50ad@corp.supernews.com>
Source record: 110934

In the fourth paragraph, you say that "real power is in the real part of the impedance", and in the last, that it's "found by integrating the Poynting vector slightly outside the surface of the antenna". The impedance is E/H, the Poynting vector E X H. Clearly these aren't equivalent.

The radiated power is, as you say, the integral of the Poynting vector over a surface. (And the average, or "real", radiated power is the average of this.) The integral doesn't need to be taken slightly outside the surface of the antenna, but can be any closed surface enclosing the antenna. There's no necessity for E/H, or the real part of E/H, to be constant in order to have the integral of E X H be constant.

The driving point impedance of the antenna depends on where you drive it, and it bears no relationship I know of to the wave impedance (which is, I assume, what you mean by "resistive space impedance") close to the antenna. If you find any published, modeled, measured, or calculated support for that contention, I'd be very interested in it.

Roy Lewallen, W7EL

William E. Sabin wrote:
>
> There seems to more explanation needed.
>
> If a lossless dipole is loaded with 100 W of *real* power, that is the
> real power in the far field, and it is also the real power very close to
> the antenna, regardless of the type of antenna.
>
> The value of real power is the same everywhere.
>
> Since real power is in the real part of the impedance, then how does the
> value of real impedance (not the magnitude of impedance) vary with
> distance from the antenna?
>
> It seems that very close to (but slightly removed from) the antenna the
> real part of the resistive space impedance is nearly the same as the
> real part of the driving point impedance of the antenna. This real part
> is then transformed to 377 ohms (real) within the near field, suggesting
> that the open space adjacent to the antenna performs an impedance
> transformation. The near-field reactive fields perform this function in
> some manner.
>
> The real power radiated is found by integrating the Poynting vector
> slightly outside the surface of the antenna, and is equal to the real

> power into the (lossless) antenna. This value is constant everywhere
> beyond the antenna.
>
> Bill W0IYH
>

2891. .EZ files to .N4W files conversion

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 20:35:44 UTC
From: Martin <admin@127.0.0.1>
Message-ID: <bh6ami$h8c$1$8302bc10@news.demon.co.uk>
Source record: 110935
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,uk.radio.amateur

Hello I have been sing NEC4Win95 for some time, Find that it
does all that I need.
But what I am looking for is a reader or conversion utility that
I can use to convert some .EZ (Eze NEC I think) to the text
format for NEC4win95 to read.

Thanks Martin

2892. FM dipole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 20:50:07 UTC
From: "Mr. T" <mrt.mrst@verizon.net>
Message-ID: <3eyZa.8990$pn3.1097@nwrdny01.gnilink.net>
Source record: 110936

I am a novice when it comes to antennas. Could someone point me to sources of info about buying or making an outdoor fm(88Mhz-108Mhz) antenna?
Thanks in advance

2893. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 20:50:13 UTC
From: Ken <cprstn54zz@att.net>
Message-ID: <nbbdjvku1hqp945u4iu17u5098f850uume@4ax.com>
Source record: 110937

On Sat, 09 Aug 2003 16:23:10 GMT, "Stuart" <srumley@sbcglobal.net>
wrote:
>Anyone know of a cure for this problem?

As the squirrel population in my neighborhood went up, they started chewing their way through my attic wall to nest and play. No repellents -- chemical or ultrasound -- worked.

I can not legally use a gun of any kind in this neighborhood. Besides, who has the time to sit around and wait for them?

I finally started to catch them on the ground in Hav-a-Hart traps baited with peanut butter, driving each one around a mile away (across two major roads) and releasing them into the woods. I transported almost 30 of them over a two week period. The populaiton on my property is way down and I rarely see one anymore. I would guesstimate that I get maybe one new one a month from neighboring properties. He quickly joins his friends a mile away. There have been no chew-ins for over six months.

My property is also traversed by rabbits, chipmunks, moles and rats but none of them seem interested in the peanut butter -- which is good because they do no harm.

If it doesn't bother you, you can immerse the traps in a garbage can filled with water (must secure the locking bails first) and save the two mile (R/T) drive.

Ken C2JDY

Ken
(to reply via email
remove "zz" from address)

2894. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 21:17:42 UTC
From: Rob Judd <judd@ob-wan.com>
Message-ID: <3F36B676.14873784@ob-wan.com>
Source record: 110950
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Jerry Avins wrote:
>
> Rob Judd wrote:
> >
> ...
>
> > Open-air triode?? Do tell, you have me fascinated...
> >
> > Rob
>
> I wrote of it before, so I'll be brief and hope I'm not boring. An
> open-coil hot plate with a ceramic holder to support and contain the
> nichrome element as filament*. Topped with galvanized window screening,
> the zinc removed with muriatic acid so as not to noxiously sublime,
> resting on the ceramic as (literally!) grid. Small glass beads -- around
> 1/16" -- scattered on it to create a gap and hold the screening flat.
> Atop that, a pie tin weighted with cooling water to serve as
> (literally!) plate. With 700 volts on the plate, I got measurable
> current on my 1000 ohm/volt meter. At -90 volts on the grid, the current
> was too small to read. The gain was enough to sustain oscillation.

Trï¿½s bizarre!

Rob

2895. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 21:42:37 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <7qKcnWUmG53KIauiXTWJhg@crocker.com>
Source record: 110938

actually i would expect that a change in E/H would change the driving point impedance and also the performance of the antenna. some possible examples that show this effect are the changes in element sizes when modeling an antenna printed on a dielectric circuit board material or sandwiched in a dielectric media. the change in wire length due to insulation is another example, the dielectric properties of the insulation change the E/H ratio near the wire. some examples may be found in many electromagnetics texts, look at things like dielectric waveguides, or dielectrics in waveguides, wires in dielectric media. even the detailed calculation of fields within a dielectric filled coaxial cable should show this effect, change the dielectric and you change the characteristic impedance... a measurable effect from changing the 'space impedence' between the wires.

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vjdantrlfh50ad@corp.supernews.com...
> In the fourth paragraph, you say that "real power is in the real part of
> the impedance", and in the last, that it's "found by integrating the
> Poynting vector slightly outside the surface of the antenna". The
> impedance is E/H, the Poynting vector E X H. Clearly these aren't
> equivalent.
>
> The radiated power is, as you say, the integral of the Poynting vector
> over a surface. (And the average, or "real", radiated power is the
> average of this.) The integral doesn't need to be taken slightly outside
> the surface of the antenna, but can be any closed surface enclosing the
> antenna. There's no necessity for E/H, or the real part of E/H, to be
> constant in order to have the integral of E X H be constant.
>
> The driving point impedance of the antenna depends on where you drive
> it, and it bears no relationship I know of to the wave impedance (which
> is, I assume, what you mean by "resistive space impedance") close to the
> antenna. If you find any published, modeled, measured, or calculated
> support for that contention, I'd be very interested in it.
>
> Roy Lewallen, W7EL
>
> William E. Sabin wrote:
> >
> > There seems to more explanation needed.
> >
> > If a lossless dipole is loaded with 100 W of *real* power, that is the
> > real power in the far field, and it is also the real power very close to
> > the antenna, regardless of the type of antenna.
> >

> > The value of real power is the same everywhere.
> >
> > Since real power is in the real part of the impedance, then how does the
> > value of real impedance (not the magnitude of impedance) vary with
> > distance from the antenna?
> >
> > It seems that very close to (but slightly removed from) the antenna the
> > real part of the resistive space impedance is nearly the same as the
> > real part of the driving point impedance of the antenna. This real part
> > is then transformed to 377 ohms (real) within the near field, suggesting
> > that the open space adjacent to the antenna performs an impedance
> > transformation. The near-field reactive fields perform this function in
> > some manner.
> >
> > The real power radiated is found by integrating the Poynting vector
> > slightly outside the surface of the antenna, and is equal to the real
> > power into the (lossless) antenna. This value is constant everywhere
> > beyond the antenna.
> >
> > Bill W0IYH
> >
>

2896. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 21:42:45 UTC
From: p.kootsookos@remove.ieee.org
Message-ID: <s68k79ltciy.fsf@mango.itee.uq.edu.au>
Source record: 110939
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Jerry Avins <jya@ieee.org> writes:

>
> P.S. to Rick: That was before my time.
>

Hey, Rick! Stop pickin' on the ol' guy!!

;-)

Ciao,

Peter K.

--
Peter J. Kootsookos

"Na, na na na na na na, na na na na"
- 'Hey Jude', Lennon/McCartney

2897. Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 21:57:24 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <bh6f4klin1@news.oregonstate.edu>
Source record: 110940

I'm looking at the form of the equation for the effective area of an antenna and finding it a little non-intuitive...

We have D/Ae=4*pi/lambda^2, where D is the antenna's directivity and Ae is the effective area. Hence, after rearranging, we find that Ae is proportional to lambda^2 or 1/f^2 (f=frequency).

Is this really telling me that if I cut a receiving antenna in the form of a half-wave dipole at 200MHz, it'll only intercept a quarter as much power as a half-wave dipole at 100MHz?

For instance... say the incident field has a power density of 1 W/m^2. A half-wave dipole at resonance is ~73 ohms and its directivity is ~1.64 giving it an effective area of ~.131*lambda^2. At 100MHz, that's 1.18 m^2 and the antenna will produce 1.18 W. At 200MHz, I only get .295W... right? If I attach a ~73 ohm transmission line to these antennas, equating V^2/(2*R) to the powers gives me 13.13V (peak to peak) at 100MHz and 6.56V at 200MHz. This is going to make it twice as hard for me to detect some signal at 200MHz, won't it??? How does the antenna noise scale with frequency -- do I still have the same SNR in both cases?

Thanks for the help,
---Joel Kolstad

2898. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 22:00:28 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030810180028.06272.00002163@mb-m03.aol.com>
Source record: 110941

W7EL writes:
>
>The driving point impedance of the antenna depends on where you drive
>it, and it bears no relationship I know of to the wave impedance (which
>is, I assume, what you mean by "resistive space impedance") close to the
>antenna.

We can look at the lowest impedance in particular antenna, which will have higher impedance points elsewhere along its length. Looking at different antennas or arrays we can have antennas with higher lowest impedance. Like folded dipoles and loops. Would that not indicate and provide closer "match" to free space impedance? Again, K8CFU measured that folded monopole "surprisingly" gave higher field strengths than simple monopole radiator. Wouldn't that indicate that there is something "wrong" (good) about higher impedance antennas? Capture area reflected in here?

Yuri, K3BU

2899. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 22:07:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjdgh67qq33lb3@corp.supernews.com>
Source record: 110942

No, it's really more a matter of how the antenna is oriented relative to
the flow of the Earth's Chi.

Roy Lewallen, W7EL

Yuri Blanarovich wrote:
> W7EL writes:
>
>>The driving point impedance of the antenna depends on where you drive
>>it, and it bears no relationship I know of to the wave impedance (which
>>is, I assume, what you mean by "resistive space impedance") close to the
>>antenna.
>
>
> We can look at the lowest impedance in particular antenna, which will have
> higher impedance points elsewhere along its length. Looking at different
> antennas or arrays we can have antennas with higher lowest impedance. Like
> folded dipoles and loops. Would that not indicate and provide closer "match" to
> free space impedance? Again, K8CFU measured that folded monopole "surprisingly"
> gave higher field strengths than simple monopole radiator. Wouldn't that
> indicate that there is something "wrong" (good) about higher impedance
> antennas? Capture area reflected in here?
>
> Yuri, K3BU

2900. Re: Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 22:16:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjdh29es7lc4f9@corp.supernews.com>
Source record: 110943

Joel Kolstad wrote:
> I'm looking at the form of the equation for the effective area of an antenna
> and finding it a little non-intuitive...
>
> We have D/Ae=4*pi/lambda^2, where D is the antenna's directivity and Ae is
> the effective area. Hence, after rearranging, we find that Ae is
> proportional to lambda^2 or 1/f^2 (f=frequency).
>
> Is this really telling me that if I cut a receiving antenna in the form of a
> half-wave dipole at 200MHz, it'll only intercept a quarter as much power as
> a half-wave dipole at 100MHz?

Yes. It's half as long, so it won't intercept as much.

> For instance... say the incident field has a power density of 1 W/m^2. A
> half-wave dipole at resonance is ~73 ohms and its directivity is ~1.64
> giving it an effective area of ~.131*lambda^2. At 100MHz, that's 1.18 m^2
> and the antenna will produce 1.18 W. At 200MHz, I only get .295W... right?
> If I attach a ~73 ohm transmission line to these antennas, equating
> V^2/(2*R) to the powers gives me 13.13V (peak to peak) at 100MHz and 6.56V
> at 200MHz. This is going to make it twice as hard for me to detect some
> signal at 200MHz, won't it??? How does the antenna noise scale with
> frequency -- do I still have the same SNR in both cases?

Thermal noise has a uniform frequency distribution, so over a given
bandwidth, the noise power is the same at any frequency. You'll have
better S/N ratio with the 100 MHz dipole than the 200 MHz dipole.
Atomospheric noise is usually more important at HF, and it does vary a
great deal with frequency, but at VHF and above, thermal noise generally
dominates.

Roy Lewallen, W7EL

2901. Re: FM dipole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 22:38:14 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh6hgp$uh1e5$1@ID-134747.news.uni-berlin.de>
Source record: 110944

If you are in the US go to your local Radio Shack. Buy one (sku 420-2385). Should cost less than $5.00, unless you need to attach to 75 ohm connector, then you will have to add the cost of impedance matching transformer, another $3.00 to $5.00.

If do not live in the US, or really, just really have to roll your own the formula is 468/f where f is the frequency in mhz. That comes out to about 4' 9'' long at 98 mhz which is the middle of the band. Solder both ends of the twin lead together, cut one conductor in the center and open it up to about the width of the twin lead. Attach a length of twin lead to this gap.

In either case set the antenna up as an "inverted v", including 90 to 140 degrees between the legs.
--
73 es cul

wb3fup
a Salty Bear

"Mr. T" <mrt.mrst@verizon.net> wrote in message
news:3eyZa.8990$pn3.1097@nwrdny01.gnilink.net...
> I am a novice when it comes to antennas. Could someone point me to
sources
> of info about buying or making an outdoor fm(88Mhz-108Mhz) antenna?
> Thanks in advance
>
>

2902. Re: Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 22:39:40 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <bh6hlqmcg1@news.oregonstate.edu>
Source record: 110945

Roy Lewallen <w7el@eznec.com> wrote:
> Joel Kolstad wrote:
>> Is this really telling me that if I cut a receiving antenna in the form
>> of a half-wave dipole at 200MHz, it'll only intercept a quarter as much
>> power as a half-wave dipole at 100MHz?
>
> Yes. It's half as long, so it won't intercept as much.

Well that certainly seems like something of a raw deal!

I like that way of thinking about it intuitively (it's shorter), although I believe that -- if you match it properly -- if I take that 200MHz half-wave dipole and operate it at 100MHz (effectively becoming a full-wave dipole) it'll actually still collect about the same power as the 100MHz half-wave dipole. (Since its directivity is still about the same... Looking at it the other way, for dipoles < ~0.2*lambda, the effective area is ~.119*lambda^2, and it doesn't really matter if it's 0.1*lambda or 0.05*lambda -- although the later antenna here will be harder to efficienctly match to since it'll have a noticeably smaller radiation resistance).

I suppose those remote controlled aircraft they build that have the arrays of dipoles and diodes on their bellies to intercept microwave radiation to power the motor only use microwaves, then, because they're so much easier to focus than, e.g., a VHF or lower frequency?

> Thermal noise has a uniform frequency distribution, so over a given
> bandwidth, the noise power is the same at any frequency. You'll have
> better S/N ratio with the 100 MHz dipole than the 200 MHz dipole.

OK, gotcha.

So...in summary... if the cell phone guys had just stuck with AMPS (FM signaling) when they went from 900MHz to 1.8GHz, the SNR of the incoming signal would have dropped by 6dB, correct (assuming the antenna was still the same electrical length)? Bummer...

---Joel

2903. Re: Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 22:42:40 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <bh6hremdg1@news.oregonstate.edu>
Source record: 110946

Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com> wrote:
> I like that way of thinking about it intuitively (it's shorter), although
> I believe that -- if you match it properly -- if I take that 200MHz
> half-wave dipole and operate it at 100MHz (effectively becoming a
> full-wave dipole)

This should be 'effectively becoming a QUARTER WAVE dipole,' of course.
Sorry. :-) I stand by the rest of the posting.

---Joel

2904. Re: .EZ files to .N4W files conversion

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 23:01:51 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <vljdjvsdg8v7kd5afpe4r0gvih4li0uooc@4ax.com>
Source record: 110948
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,uk.radio.amateur

Try MultiNec.

Danny

On Sun, 10 Aug 2003 21:35:44 +0100, "Martin" <admin@127.0.0.1> wrote:

>Hello I have been sing NEC4Win95 for some time, Find that it
>does all that I need.
>But what I am looking for is a reader or conversion utility that
>I can use to convert some .EZ (Eze NEC I think) to the text
>format for NEC4win95 to read.
>
>Thanks Martin
>

2905. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 23:18:26 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308101518.47240f49@posting.google.com>
Source record: 110947

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bh5ass$2e2$1@sparta.btinternet.com>...
> Doc wrote -
> > Next, visit your local hardware store and buy a 4 oz. ball-pean
> > hammer. (Light ones are for squirrels and such, the heavier
> > ones are for bigger game.) Now, when you have one of the little
> > buggers caught, beat it to death with the hammer.
>
> ==========
>
> Doc, tough little buggers, eh? I didn't realise squirrel meat needs
> tenderising.

It's not tough normally, especially if they were roadkills and have
been out in the weather for a couple days.

w3rv

2906. Re: Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 23:24:09 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <tuAZa.81264$Vt6.27333@rwcrnsc52.ops.asp.att.net>
Source record: 110949

Of course, you can always increase the size of the antenna to keep the
power density constant!!

That's what all those dishes do...

DD, W1MCE

Joel Kolstad wrote:

> I'm looking at the form of the equation for the effective area of an antenna
> and finding it a little non-intuitive...
>
> We have D/Ae=4*pi/lambda^2, where D is the antenna's directivity and Ae is
> the effective area. Hence, after rearranging, we find that Ae is
> proportional to lambda^2 or 1/f^2 (f=frequency).
>
> Is this really telling me that if I cut a receiving antenna in the form of a
> half-wave dipole at 200MHz, it'll only intercept a quarter as much power as
> a half-wave dipole at 100MHz?
>
> For instance... say the incident field has a power density of 1 W/m^2. A
> half-wave dipole at resonance is ~73 ohms and its directivity is ~1.64
> giving it an effective area of ~.131*lambda^2. At 100MHz, that's 1.18 m^2
> and the antenna will produce 1.18 W. At 200MHz, I only get .295W... right?
> If I attach a ~73 ohm transmission line to these antennas, equating
> V^2/(2*R) to the powers gives me 13.13V (peak to peak) at 100MHz and 6.56V
> at 200MHz. This is going to make it twice as hard for me to detect some
> signal at 200MHz, won't it??? How does the antenna noise scale with
> frequency -- do I still have the same SNR in both cases?
>
> Thanks for the help,
> ---Joel Kolstad
>
>

2907. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 23:39:47 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bh6l6r$4lj$1@slb5.atl.mindspring.net>
Source record: 110951

No Ed Senior I am not kidding. If your stray dog comes on my property and chews up my yard, kills my cat, and attacks the neighborhood kid...Ill shoot the SOB. IF I could get away with it in this populated area I would have used te shotgun.
Oh BTW I did indeed try to get the 'humane fools' to come out. THey were not even slightly interested.

Dan/W4NTI

"Ed Senior" <eseniorsREMOVE@earthlink.net> wrote in message news:9ugZa.2190$Nf3.1694@newsread4.news.pas.earthlink.net...
> I hope you're joking, Dan, and that you'd really try to get a
> stray dog to your local rescue group or Humane Society.
>
> But if you're NOT joking, I would just advise you not to
> try shooting dogs in our neck of the woods.
>
> "Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
> news:bh3fvojln1@slb6.atl.mindspring.net...
> >
> > "oldtime radio" <nospam@spam.net> wrote in message
> > news:mudajvobatgrrpg6kkk6ugq9l2kr5bq3mj@4ax.com...
> > > pellet gun
> >
> > I can guarantee a pellet rifle works wonders. Does good with stray mutts
> > too.
> >
> > Dan/W4NTI
> >
> >
>
>

2908. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 23:40:08 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bh6l3k$v57$1@slb9.atl.mindspring.net>
Source record: 110952

Yes they are.

Dan/W4NTI
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bh46m4$3od$1@titan.btinternet.com...
> Are squirrels edible ?
>
>
>

2909. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 23:41:46 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bh6l6m$p3h$1@slb3.atl.mindspring.net>
Source record: 110953

"Tdonaly" <tdonaly@aol.com> wrote in message
news:20030810004057.08577.00000396@mb-m13.aol.com...
> >
> >Reg Edwards wrote:
> >> Are squirrels edible ?
> >
> >In Texas, we have a legal squirrel hunting season. They are not
> >bad eatin' around a campfire after a day of clearing land.
> >--
> >73, Cecil http://www.qsl.net/w5dxp
> >
>
> By God, that's why you Texans are so squirrely!
> 73,
> Tom Donaly, KA6RUH

By Gawd at least they ain't dumb enough to live on a earthquake fault.

Dan/W4NTI

2910. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-10 23:44:29 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308101544.2af1dd54@posting.google.com>
Source record: 110954

"H. Adam Stevens" <solo@totalaccess.net> wrote in message
news:<vjcv17oe8s8j7c@corp.supernews.com>...
> I live on a hill in the country where one can still practice ham radio
> without interference from civilization. I used to see quite a few squirrels.
> Although a12 gauge shotgun is instantaneously effective, the little buggers
> breed like rats, er, squirrels. Since a feral cat I call Max (Short for
> Hiram Percy Maxim, since he likes to nap on the S-Line.) has moved in, no
> squirrels, skunks, raccoons, snakes, etc.

Doesn't sound like a Grade A feral cat but if he does the job . .

I had a buddy long since an SK who lived on a mountain top in an old
hunting lodge turned big multi-multi DX contest station on contest
weekends. He had a huge bobcat which lived in a hollow log about 50
yards from the lodge, the feral cat and coax security guard from hell.
The first time I heard the thing "meow" he near scared me outta me
skivvies.

> Except for wild dogs, which I
> shoot on sight, usually with a Weatherby 7mm08,

I see. What do you use when you need real firepower, a Weatherby .460
Mag?

> with Max's approval, I might
> add.
> I vote for the cat option.

Oughta work.

> 73
> H.
> NQ5H
>
w3rv

2911. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 00:07:27 UTC
From: John Moriarity <k6qq@hdo.net>
Message-ID: <vjdnj4h55q5m6d@corp.supernews.com>
Source record: 110955
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

> > That bulb was probably an old coiled 'Edison' type . They were /are known to
> > form a tuned circuit resonating in the old TV band 1 (about 48 - 62 MHz)
> > acting as a TX when power is applied.
> >
> > Frank GM0CSZ / KN6WH
>
> Thank you thankyouthankyou! I've been called a crazy liar more than once
> over that bulb. There was no channel 1 when that incident happened, but
> I suppose that a small change of geometry could raise the frequency. The
> explanation in QST had it that the frequency was swept over a fairly
> large range as the voltage varied during a cycle.

I found such a bulb in the loft of the garage of a house we were renting in the mid-1950s. I had read an article about them somewhere, so I took it inside, screwed it into a lamp near the TV, and, voila, instant Channel 3 TVI (that was the main channel in Milwaukee, WI, then). I put it in a box in my shack, and didn't think about it for some time.

I put up a tower and 20 meter beam. Before the coax was in the house, a neighbor sent his kid over to complain about TVI. I invited him to come over and see that the TV in my shack was not showing any interference, but he declined, and continued to complain over the next few months.

While preparing to leave for two weeks vacation, I had a flash of inspiration. I put the bulb in a lamp, connected a timer to the lamp, and put it in a closet (so the light couldn't be seen in an otherwise dark house). The timer turned the bulb on during evening TV hours.

I left it on for several days after our return. The neighbor never complained of TVI again.

73, John - K6QQ, glad for the statute of limitations.

2912. Re: FM dipole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 00:12:20 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <EbBZa.81610$Vt6.27264@rwcrnsc52.ops.asp.att.net>
Source record: 110956

Some great web sites to learn more

http://www.kyes.com/antenna/antennadex.html

gb
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB
"Mr. T" <mrt.mrst@verizon.net> wrote in message
news:3eyZa.8990$pn3.1097@nwrdny01.gnilink.net...
> I am a novice when it comes to antennas. Could someone point me to sources
> of info about buying or making an outdoor fm(88Mhz-108Mhz) antenna?
> Thanks in advance
>
>

2913. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 00:13:39 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <TcBZa.116245$uu5.17433@sccrnsc04>
Source record: 110957

I don't blame you a bit.
"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
news:bh6l6r$4lj$1@slb5.atl.mindspring.net...
> No Ed Senior I am not kidding. If your stray dog comes on my property and
> chews up my yard, kills my cat, and attacks the neighborhood kid...Ill
> shoot the SOB. IF I could get away with it in this populated area I would
> have used te shotgun.
> Oh BTW I did indeed try to get the 'humane fools' to come out. THey were
> not even slightly interested.
>
> Dan/W4NTI
>
> "Ed Senior" <eseniorsREMOVE@earthlink.net> wrote in message
> news:9ugZa.2190$Nf3.1694@newsread4.news.pas.earthlink.net...
> > I hope you're joking, Dan, and that you'd really try to get a
> > stray dog to your local rescue group or Humane Society.
> >
> > But if you're NOT joking, I would just advise you not to
> > try shooting dogs in our neck of the woods.
> >
> > "Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
> > news:bh3fvojln1@slb6.atl.mindspring.net...
> > >
> > > "oldtime radio" <nospam@spam.net> wrote in message
> > > news:mudajvobatgrrpg6kkk6ugq9l2kr5bq3mj@4ax.com...
> > > > pellet gun
> > >
> > > I can guarantee a pellet rifle works wonders. Does good with stray
> mutts
> > > too.
> > >
> > > Dan/W4NTI
> > >
> > >
> > >
> > >
>
>

2914. Re: Layout for G5RV twin feedline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 00:19:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f36e273_6@corp.newsgroups.com>
Source record: 110959

Harry George wrote:
> I'm thinking "a" is my best bet, due to 90 to dipole, but I've
> never heard of running the feedline horizontally.

"a" is best. You probably want to keep the feedline from radiating
so install a 1:1 choke at the coax/twinlead junction.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

2915. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 00:24:08 UTC
From: RadioNerd <RadioNerd@127.0.0.1>
Message-ID: <s3odjv0e2pfdtrgpmultknpffnikgd2m69@4ax.com>
Source record: 110958

Chop off 3 or 4 feet from both the ends and throw the ends out. Also
check the outer jacket for nicks and cracks. Any nick or crack will
let moisture in and cause problems. Most problems with older cable
will be from moisture seeping into the cable from the ends or through
nicks and cracks in the outer jacket. Do the cutting even if it has
connectors on it because most connectors especially PL-259 type are
not moisture resistant. Also look for places the cable has been
crushed, kinked or flattened. These will be bad spots. I've
successfully used 20 year old cable many times.

On Sat, 9 Aug 2003 11:11:45 +0100, "John" <my-callsign@qsl.net> wrote:

>Does coax have a shelf life?
>
>I was rummaging around my father's garage the other day and came across a
>roll of URM43 that I know to be over 20 years old. It looks OK and the
>copper is shiny. However, can I be confident that it will not have lost any
>of its electrical or physical properties? I intend to take it on holiday
>with me soon and don't want it to fail.
>
>Advice please!!
>
>Thanks
>John/G4IRN
>
>

2916. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 00:30:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6fodjvker36mkr1g9nnti5fsofhvt0mps2@4ax.com>
Source record: 110960

On Sun, 10 Aug 2003 14:28:11 -0500, "William E. Sabin"
<sabinw@mwci-news> wrote:

>Richard Clark wrote:
>>
>>
>> Note that employing the term transform and antenna within the same
>> context is not de rigueur.
>
>It is 100 percent correct and appropriate.
>
>Bill W0IYH

I happen to agree, but being correct and appropriate has nothing to do
with de rigueur. The subject line, after all, has long been abandoned
to the whim of fashion.

73's
Richard Clark, KB7QHC

2917. Re: EZ Way tower sheared hinge pin

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 00:53:11 UTC
From: Henry Kolesnik <wd5jfr@oklahoma.net>
Message-ID: <vjdq7rojft6563@corp.supernews.com>
Source record: 110961

dan
Sounds like you got yourself a dandy! Here's my 2 cents for consideration. Do whatever you can to secure the tower in a vertical postion. Tie the tower off so it has to fall where it won't damage other property, or do the least damage, always prepare for the worst. If you can't work safely around it or get safely away if it falls, forget it, get a crane. If the tower has a concrete base get 3 car bumper jacks and some chain for each. Distribute the jacks evenly around the tower base and fasten one chain to each jack and wrap the chain low so the jack can lift. If a jack can get a direct grip on the tower without a chain so much the better. 3 guys might be able to work in unison but maybe one guy one click per jack can do it. I kind of recall that these towers used a steel post for support and if that's the case get some 2 foot pieces of 2" x 12" planks to support the jacks. Think this thru and if it makes sense perhaps you can lift the tower so you can drive the remainder of the hinge pin out. You'll need another hinge pin so get 2, one to use as a driver and one to use as a replacement. This is just a suggestion without any knowledge of specific site conditions but it may give you an idea. In any event make sure whatever you do won't hurt you, your helpers or property. Letting the tower crash safely may be your most economical alternative.
Good luck.
hank wd5jfr
PS let us know what you did.

"Dan Lanciani" <ddl@danlan.*com> wrote in message
news:1153864@news1.IPSWITCHS.CMM...
> After doing some work on my antennas today I tilted up my trusty old EZ
Way
> 40ft tower (circa 1959). To my horror, just as I got within a few degrees
of
> vertical, the hinge pin sheared off on one side. The other side followed
> soon thereafter. This left the tower sort of hanging from the lip of the
> hinge and the tilt cable. After I got over the initial shock (and
expectation
> that the tower would fall immediately) I stabilized the situation as best
I
> could with various U-bolt kludges between the ground pole and the lower
tower
> segment. The problem is that I can't see any safe way to bring the tower
> back down nor do I have the ability to repair the hinge in place (if in
fact
> that is possible). Help? Is this a known failure mode? The tower itself
> is in good shape and I have kept the ground pole well painted, but I
assume

> that the inside of the hinge just rusted away. It's a little scary having
the
> tower in this state. :(
>
> Dan Lanciani
> ddl@danlan.*com

2918. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 01:21:27 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308101721.76f54c86@posting.google.com>
Source record: 110962

"David Robbins" <k1ttt@arrl.net> wrote in message
news:<7qKcnWUmG53KIauiXTWJhg@crocker.com>...
> actually i would expect that a change in E/H would change the driving point
> impedance and also the performance of the antenna. some possible examples
> that show this effect are the changes in element sizes when modeling an
> antenna printed on a dielectric circuit board material or sandwiched in a
> dielectric media. the change in wire length due to insulation is another
> example, the dielectric properties of the insulation change the E/H ratio
> near the wire. some examples may be found in many electromagnetics texts,
> look at things like dielectric waveguides, or dielectrics in waveguides,
> wires in dielectric media. even the detailed calculation of fields within a
> dielectric filled coaxial cable should show this effect, change the
> dielectric and you change the characteristic impedance... a measurable
> effect from changing the 'space impedence' between the wires.
>

Agreed, and emmersing a waterproof antenna into water will also
affect the input impedance.

Slick

2919. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 01:25:57 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308101725.32ee6e99@posting.google.com>
Source record: 110963

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<n0SdnZUE-Ka4wquiXTWJjA@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308100205.3bb760ef@posting.google.com...
> Someone else suggested that i place the meter
> > right at the cantenna, to at least exclude the patch from meter to
> > dummy load.
> >
> No, you don't want to do that. Put as much loss as you can between the meter
> and the Cantenna. 100 feet of RG58 will have about 6.5 db of loss. It will
> make your load a lot closer to 50 Ohms. There are Tables that show SWR as a
> function of cable loss for a given mismatch. One chart that I have in
> "Reference Data for Radio Engineers" shows that with a load SWR of 1.4, and
> 6.5 db of cable loss, the SWR at the driving end is around 1.075. Note that
> you DO NOT want low loss coax.
>
> Tam/WB2TT

Perhaps you are correct. That you would only want to use the
meter right at the load if you wanted to measure the real SWR of the
antenna, as the coax loss will improve the return loss (SWR).

I'll try a long piece of RG-58 and see how the incident power is
affected.

Slick

2920. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 01:30:48 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308101730.6f9775db@posting.google.com>
Source record: 110964

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f36330e_8@corp.newsgroups.com>...
> Dr. Slick wrote:
> > However, in my case, the SWR doesn't change much, while the
> > INCIDENT power does!!!
>
> Guess I wasn't clear. There are an infinite number of impedances
> on a constant SWR circle. The transmitter likes some of those
> impedances better than others.

No, i understood you alright, and your statement above is
understood and agreed to.

However, in this case, we only have two impedances to chose from
(two different coax lengths).

Slick

2921. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 01:51:57 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308101751.200d330c@posting.google.com>
Source record: 110965

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308100817.31b4cb1@posting.google.com>...
> >
> > However, in my case, the SWR doesn't change much, while the
> > INCIDENT power does!!! To me, this may be due to the fact that the PA
> > isn't 50 Ohms at the output (I'll bet not many really are), and so a
> > swing of +/- j20 may improve or degrade how close you are to a
> > conjugate match.
> >
> > What do you dudes think?
>
> Instrument it properly and answer your own question. Measure the
> power at both ends at the same time. Then, assuming you have good
> power meters, calibrated to the line you're using, you'll know if the
> input end of the coax also experiences the same power difference.

This is an interesting idea, putting two meters at two different
points. However, they would have to be the same make and model, as
even the digital Daiwa Vs. the analog Daiwa were significantly off.
Additionally, things are further complicated by the fact that the
meters themselves introduce a mismatch, as they are not a perfect 50
Ohm thru.

What do you mean by "calibrated to the line"?

If
> it does, then it's presumably the output of the transmitter/filter
> that changes. You've already offered a very reasonably hypothesis
> about why that happens, and could prove/disprove that through some
> measurements, too. Is the transmitter a linear time-invariant system?
> (Or does it have a load sensor that reduces power output for some
> loads?) Can you determine the actual source impedance of your
> amplifier, and correlate that with the readings you've gotten?
>
> I trust that the readings you got weren't much of a surprise...
>
> Cheers,
> Tom

Not so much a surprise as a disappointment! A difference of 70
watts incident power is totally unacceptable with only 8 feet of coax
length added.

The transmitter does not have a mismatch sensor on it for reducing
power at high SWR. It naturally does output less wattage as the
transconductance is reduced with higher temperatures, but my

measurements were done in close proximity to each other.

Exactly how would you measure the output impedance (S22) of a PA?
Drive it with a small signal (class A, linear mode) in one frequency
(F1), and then inject another frequency (F2) into the output, and then
measure the reflected F2 power? If i remember correctly, that's how
someone was trying to measure S22 at my former place of employment.
But all bets are off as soon as you go non-linear, or non-class A.
S-parameters are supposed to be all small signal.

I don't think you can properly measure the S22 of a class C PA.

Tam brought up the suggestion that i try a really long piece of
RG-58 from meter to dummy load, to make the Cantenna more like 50
Ohms. Gonna try it.

Slick

2922. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 02:17:14 UTC
From: Dennis Kaylor <k4oxg@tampabay.rr.com>
Message-ID: <K0DZa.25630$qg3.1792321@twister.tampabay.rr.com>
Source record: 110966

why dont you just incase the feedlines in conduit so the little critters
cant chew though it
if you need it flexible there is some amoured stuff they use in the
electal field too

2923. Re: Bobtail Curtain Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 03:06:48 UTC
From: DOUGLAS SNOWDEN <snowden@peoplepc.com>
Message-ID: <vje22b9efvpp23@corp.supernews.com>
Source record: 110967

Didn't mean to imply the voltage would be higher for tubing than for wire.

Doug

"'Doc" <w5lz@cwis.net> wrote in message news:3F36841B.DE1C9F88@cwis.net...
> Doug,
> Depends on the frequency to a large extent. If
> the antenna is for above 10 meters you may see some
> slight increase in bandwidth by using the tubing,
> same for the 'shortening' of the elements. At HF
> frequencies the 2" diameter tubing will have very
> little affect on either bandwidth or shortening.
> Why would the voltages be higher on tubing rather
> than on wire?
> 'Doc

2924. Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 03:13:01 UTC
From: DOUGLAS SNOWDEN <snowden@peoplepc.com>
Message-ID: <vje2dv9nrs1k4c@corp.supernews.com>
Source record: 110968

I am still trying to decide what type of tower to buy for a house I will be moving into. I would like something I can handle easily by myself, meaning either crankup or tiltover aluminum. I was thinking about maybe a Heights or Universal aluminum 50-60ft on a tiltover base, not the foldover base. To save money I would like to fabricate some sort of steel post along the side of the tower, with a pulley/winch arrangement. Not being an engineer, I am looking for ideas on how high the pole shoule be - maybe as a ratio of the tower height and what would be a good safe diameter pipe. Am I looking for trouble? Typical commercial foldover mechanisms are expensive. Should I just rent a cherry picker for the occasional times I would be tilting the tower over? As light as it would be that should be a solution.

Doug

N4IJ

2925. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 03:33:14 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <p73ejv0ddua34hk6r6bcrj8h7egu2djb0f@4ax.com>
Source record: 110869

On Sun, 10 Aug 2003 00:38:29 GMT, "Ed Senior"
<eseniorsREMOVE@earthlink.net> wrote:

>I hope you're joking, Dan, and that you'd really try to get a
>stray dog to your local rescue group or Humane Society.
>
>But if you're NOT joking, I would just advise you not to
>try shooting dogs in our neck of the woods.
>
>"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
>news:bh3fvojln1@slb6.atl.mindspring.net...
>>
>> "oldtime radio" <nospam@spam.net> wrote in message
>> news:mudajvobatgrrpg6kkk6ugq9l2kr5bq3mj@4ax.com...
>> > pellet gun
>>
>> I can guarantee a pellet rifle works wonders. Does good with stray mutts
>> too.
>>
>> Dan/W4NTI
>>
>>
>
You might live in the woods, but not near livestock. Strays running
stock are always put down. Somehow, those misguided cattle farmers
think beeves are more valuable than somebody's unwanted pet gone
feral. I've known ranchers to pay to have the stray dogs killed.
None, not one, of my dogs has ever run loose for longer than it took
me to catch it. Oh, and you cat lovers out there...it's a PET leash
law, so tie 'em up or reclaim 'em from the pound and pay the fine on
the way in.

Russ

2926. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 03:33:54 UTC
From: rckchp@comcast.net
Message-ID: <6dc33f40.0308101933.4423f8f6@posting.google.com>
Source record: 110870

Good luck trying to get a response from the Cobbweb folks. I've tried to corresponde with them to ask questions via email several times over the past two years and so far they haven't had the courtesy to reply. Maybe they are just not interested is sales to the US.....or maybe they're no longer in business.

A much better "limited space" antenna is the Hexbeam (www.hexbeam.com). It is more expensive than a Cobbweb but the company is very responsive to inquiries and I've hads several "on air" qsos with satisfied users. I'm saving for one.

Rich K2CPE

> I have a very small QTH, with not much room for HF antennas, but
> with lots of scope for a good bit of TVI to the neighbors, so a
> vert may not be the best solution.
>
> The website is a bit sparse on tech details.
>
> Can anyone comment on this one?
>
> 73
> George...

2927. Re: Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 03:51:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vje4lmtedhude7@corp.supernews.com>
Source record: 110871

Joel Kolstad wrote:
> Roy Lewallen <w7el@eznec.com> wrote:
>
>>Joel Kolstad wrote:
>>
>>>Is this really telling me that if I cut a receiving antenna in the form
>>>of a half-wave dipole at 200MHz, it'll only intercept a quarter as much
>>>power as a half-wave dipole at 100MHz?
>>
>>Yes. It's half as long, so it won't intercept as much.
>
>
> Well that certainly seems like something of a raw deal!

Yeah, the laws of physics can sure be unfair sometimes. Petition the deity of your choice and maybe you can talk her into fixing it.

> I like that way of thinking about it intuitively (it's shorter), although I
> believe that -- if you match it properly -- if I take that 200MHz half-wave
> dipole and operate it at 100MHz (effectively becoming a full-wave dipole)
> it'll actually still collect about the same power as the 100MHz half-wave
> dipole. (Since its directivity is still about the same... Looking at it the
> other way, for dipoles < ~0.2*lambda, the effective area is ~.119*lambda^2,
> and it doesn't really matter if it's 0.1*lambda or 0.05*lambda -- although
> the later antenna here will be harder to efficiently match to since it'll
> have a noticeably smaller radiation resistance).

That's another real bummer about physics, and one of the major ways it differs from, say, philosophy. Thinking about it a different way just doesn't change it a bit. That's a lesson a lot of the magic-antenna inventors don't seem to pick up on.

> I suppose those remote controlled aircraft they build that have the arrays
> of dipoles and diodes on their bellies to intercept microwave radiation to
> power the motor only use microwaves, then, because they're so much easier to
> focus than, e.g., a VHF or lower frequency?
>

That's one good reason. Another is the one you pointed out above -- even though a one foot antenna intercepts as much power at 1 MHz as at 1 GHz, it's impossible to practically extract the power at 1 MHz.

>>Thermal noise has a uniform frequency distribution, so over a given
>>bandwidth, the noise power is the same at any frequency. You'll have
>>better S/N ratio with the 100 MHz dipole than the 200 MHz dipole.
>

>
> OK, gotcha.
>
> So...in summary... if the cell phone guys had just stuck with AMPS (FM
> signaling) when they went from 900MHz to 1.8GHz, the SNR of the incoming
> signal would have dropped by 6dB, correct (assuming the antenna was still
> the same electrical length)? Bummer...

Yip. Bummer indeed. But there's no point cursing the darkness (unless you have an "in" with a deity who's able and willing to make an exception for you). Like they say, if I had some ham, I'd make a ham sandwich. If I had some bread.

Roy Lewallen, W7EL

2928. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 03:57:24 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <s34ejvs8t0rafq25r6t2227kdul3vi4s0v@4ax.com>
Source record: 110872

On 10 Aug 2003 08:19:18 -0700, aunwin@insightbb.com (Art Unwin KB9MZ) wrote:

>Well it would seem that the 'don't use motor oil' comment
>which has been passed on by mouth to mouth over the decades
>doesn't seem to stand up to scruteny.
>Yes, the question is raised so many times over the years
>and the same old stories pop up, but without any
>substantiation such that it just appears to be gossip.
>One statement mentions attack on resisters, where's the proof,
>If it is true then it surely can be easily overcome.
>Hopefully this time, one of the many posters over the
>years on this subject will make observations that are
>relevant to the present day instead of waiting for a book.
>Art
>

Well Art, the detergents in modern motor oils are specifically formulated to dissolve carbon deposits and sludge (largely made up of carbon) and keep in in suspension. I'm pretty sure that the resistor in my Cantenna is carbon. Transformer oil is formulated to have a high dieletric strength. Mineral oil is relatively pure, lightweight petrolatum (like liquid Vaseline(r)) and has a pretty high dieletric strength just because of low impurities. Motor oil? I don't know. ATF? I don't know about that either. What I do know is that the designers of my dummy load specify either transformer oil or mineral oil. That's good enough for me. I'll mosey on down to the transformer shop of the local electric utility and buy the folks there a round of coffee in the morning or over to the veterinary supply and buy a gallon of mineral oil U. S. P. I think it's safer that way. We hams are in interestingly cheap lot. We'll spend thousands on a new rig that could break down tomorrow and then pour a gallon of "whatever" into the dummy load instead of spending twenty bucks for mineral oil or fifty bucks for MFJs transformer oil. This in a unit that with ordinary care will last a lifetime. Sheesh!

Russ

>
>
>
>
>
>
>

>"Keyboard In The Wilderness" <KITW@forest.com> wrote in message
news:<4q8Za.31351$ff.14186@fed1read01>...
>> From the Google Group Search Engine: For what it is worth
>>
>> The Handbook (at least my 1990 edition) has some information on this
>> subject.
>> In the Station Accessories chapter there are plans to build a couple of
>> Cantenna type dummy loads. They mention an oil sold by Texaco (if I remember
>> correctly) for turbine lubrication that is, according to the author, the
>> same
>> oil as is used in transformers. They quote the exact product designation.
>> Apparently, it's sold in minimum 5 gallon quantities and I think it's about
>> $5 per gallon. If anyone's interested, let me know and I'll look up the
>> information and pass it along. It's supposed to be PCB-free, also.
>>
>> The article also cautions against using motor oil for various reasons, among
>> which is that it attacks the resistor (actually, I think it's the additives
>> that cause the problem).
>>
>>
>>
>>
>> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
>> news:85ed38d.0308090649.58de8f41@posting.google.com...
>> > "Keyboard In The Wilderness" <KITW@forest.com> wrote in message
>> news:<fjUYa.31252$ff.5358@fed1read01>...
>> > > Jav -- asked many times before -- for the answers go to Groups
>> Google.com
>> > > http://groups.google.com/
>> >
>> > I don,t fully understand why motor oil should not be used
>> > in a dummy load! I need to make one so I can calibrate
>> > one of my instruments. I intend to use one of the uptodate
>> > gallon paint cans that has a PTFE liner and solder the lid on.
>> > Since we now have the means to use low wattage signals for
>> > tuning up purposes there is obviously no reason to store it
>> > in the shack . So what really is the problem with using
>> > available oil instead of emulating the aproach of industrial
>> > transformers or regurgitating old thoughts ?
>> > Art
>> >
>> >
>> >
>> >
>> >
>> >
>> >
>> > >
>> > > Search for Oil For Cantenna or Oil For Dummy Load
>> > >

>> > > Mineral Oil works well for me.
>> > >
>> > >
>> > > "Javier Henderson" <javier@KJSL.COM> wrote in message
>> > > news:863cgbdfxq.fsf@skylane.kjsl.com...
>> > > > I got a Heathkit Cantenna recently, sans oil.
>> > > >
>> > > > Where do I find transformer oil? The few industrial suppliers in my
>> > > > area (Monterey, CA) want to sell me drums of the stuff. I only need
>> > > > a gallon...
>> > > >
>> > > > Is motor oil OK to use?
>> > > >
>> > > > 73,
>> > > > -jav w6vms

2929. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 04:31:27 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F371BE4.51FE583D@shaw.ca>
Source record: 110873

Stuart wrote:
>
> Antenna Group~
>
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables. They seem to be particularly attracted to
> the self-vulcanizing rubber used to seal the connections but they have eaten
> some coax cables as well. Anyone know of a cure for this problem?
>
> Thanks
>
> Stuart, ki6qp

Go back a bit to the 'Old Coax' thread. Someone recommended cutting three
or so feet off each end of the old stuff. See if you can get those 'end'
cuts, and use them as bait in squirrel traps!
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

2930. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 04:59:32 UTC
From: "K.chattenton" <k.chattenton@btopenwold.com>
Message-ID: <bh77rk$j78$1@sparta.btinternet.com>
Source record: 110874

Hi David, George, all,
"david" <d.london@ntlworld.com> wrote in message
news:VZUYa.897$Yu.33@newsfep1-gui.server.ntli.net...
>
> "Geo" <usenet@plus.net> wrote in message
> news:20030807121610320+0100@news.btinternet.com...
> > Has anyone bought/ used/ worked this antenna?
> > http://www.g3tpw.ukgateway.net/index.html
> >
> steve webb also a great guy to speak too, he is also mine of information.

> david

Take a listen around, 1.933MHz Steve (G3TPW) is on most evenings talking
with the group up there.....Cheers, Ken G4KIR.

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.507 / Virus Database: 304 - Release Date: 04/08/2003

2931. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 05:05:50 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308102105.4985bde0@posting.google.com>
Source record: 110875

"Dan/W4NTI" <w4nti@NOSPAMmindspring.com> wrote in message
news:<bh6l6m$p3h$1@slb3.atl.mindspring.net>...
> "Tdonaly" <tdonaly@aol.com> wrote in message
> news:20030810004057.08577.00000396@mb-m13.aol.com...
> > >
> > >Reg Edwards wrote:
> > >> Are squirrels edible ?
> > >
> > >In Texas, we have a legal squirrel hunting season. They are not
> > >bad eatin' around a campfire after a day of clearing land.
> > >--
> > >73, Cecil http://www.qsl.net/w5dxp
> > >
> >
> > By God, that's why you Texans are so squirrely!
> > 73,
> > Tom Donaly, KA6RUH
>
> By Gawd at least they ain't dumb enough to live on a earthquake fault.

Then there's this thing with their governors . .

> Dan/W4NTI

w3rv

2932. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 05:07:27 UTC
From: Rick <n1jee@intergate.com>
Message-ID: <3f37eecb_1@newsfeed>
Source record: 110854

I have the same problem with my bird feeders, I used Mobil 1 oil at the base
and on the lid, sit back and be prepaired to laugh your ass off !
Rick
"MailfrmPA" <mailfrmpa@aol.com> wrote in message
news:20030810000201.14567.00001275@mb-m02.aol.com...
> >Too many of any animal in the wrong area is bad and they must be
eliminated
> >by killing or moving.
> >
> >
>
> Kinda like candidates for governor in California!

2933. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 05:07:27 UTC
From: Rick <n1jee@intergate.com>
Message-ID: <3f35d2ff_4@newsfeed>
Source record: 110876

I have the same problem with my bird feeders, I used Mobil 1 oil at the base
and on the lid, sit back and be prepaired to laugh your ass off !
Rick
"MailfrmPA" <mailfrmpa@aol.com> wrote in message
news:20030810000201.14567.00001275@mb-m02.aol.com...
> >Too many of any animal in the wrong area is bad and they must be
eliminated
> >by killing or moving.
> >
> >
>
> Kinda like candidates for governor in California!

2934. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 05:30:00 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308102130.27232da6@posting.google.com>
Source record: 110877

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308101751.200d330c@posting.google.com>...
...
> What do you mean by "calibrated to the line"?

The SWR meter should read zero reflected power when connected to a
load whose impedance is equal to the line's. Does it? If not, it's
not properly calibrated. Putting it another way, what's the
directionality of the bridge?

...
>
> Not so much a surprise as a disappointment! A difference of 70
> watts incident power is totally unacceptable with only 8 feet of coax
> length added.

But the load presented to the amplifier is totally different in the
two cases, most likely. Only if the amplifier's output impedance were
the complex conjugate of the line's, and the line were lossless, and
the amplifier behaved as a linear time-invariant system would you
(should you) expect the power to remain unchanged.
>
> The transmitter does not have a mismatch sensor on it for reducing
> power at high SWR. It naturally does output less wattage as the
> transconductance is reduced with higher temperatures, but my
> measurements were done in close proximity to each other.
>
> Exactly how would you measure the output impedance (S22) of a PA?
> Drive it with a small signal (class A, linear mode) in one frequency
> (F1), and then inject another frequency (F2) into the output, and then
> measure the reflected F2 power? If i remember correctly, that's how
> someone was trying to measure S22 at my former place of employment.
> But all bets are off as soon as you go non-linear, or non-class A.
> S-parameters are supposed to be all small signal.
>
> I don't think you can properly measure the S22 of a class C PA.
>
> Tam brought up the suggestion that i try a really long piece of
> RG-58 from meter to dummy load, to make the Cantenna more like 50
> Ohms. Gonna try it.

Or just tune the load to zero reflected power after you're sure the
meter is properly calibrated...but that can be a catch-22 situation
that the really long RG-58 can help with. Be aware, though, that
"50-ohm" line seldom is -- it can be off 5 ohms or more. It's a cause

of some consternation to those of us involved in calibration of precision RF test equipment.

Load-pull techniques are commonly used to characterize RF source impedances. You make known incremental changes to the load, and deduce from the change in output power what the source impedance is, assuming it's a linear time-invariant system. Note that adding length to a mismatched line is one way to make an incremental change to the load... I wouldn't necessarily say that the output impedance of a class C amplifier is meaningless, but it may well not be constant for all loads. and may depend on parameters you'd have trouble controlling from day to day.

Cheers,
Tom

2935. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 07:03:06 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <KcHZa.22761$VR6.415447@twister.southeast.rr.com>
Source record: 110878

This means your shield has RF on it .
Also triming cable has nothing to do with SWR. Trimming the cable will change the impedance the transmitter sees if the transmission line has standing waves on it.

"Dr. Slick" <radio913@aol.com> wrote in message news:1d15af91.0308091649.2f83eed3@posting.google.com...
> Hey,
>
> I've been getting different readings on my power meter that
> depend on the length of coax that i use to the meter (into a
> Cantenna).
>
> This is a push-pull VHF 300 watt transmitter with a coax stub
> harmonic filter on the output. My digital Daiwa will read about 310
> watts incident power using a 4 foot RG-8X jumper coax (from filter to
> meter), and about 240 watts using a 12 foot section of RG-8X!!?? VSWR
> stays the same at about 1.4:1 .
>
> There is the old ham wife's tale that you can tune your
> transmitter for a better match if you adjust the legnth of your coax
> to the antenna. And from a theoretical point of view, it _should_ be
> only a tale, because if your antenna is not a perfect 50 Ohms, the
> length of the coax should still not matter, because the constant VSWR
> circles around the center of the Smith Chart have just that, the same
> SWR independant of the wavelengths away from the antenna (assuming 50
> Ohm transmission lines are used).
>
> OTOH, the actual series equivalent complex impedance will be
> alternating from inductive to capacitive, every 1/2 wavelength.
> So perhaps this will tune/detune the amplifier?
>
> Any non-bullsh** advice/explainations appreciated.
>
>
> Dr. Slick

2936. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 07:08:16 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <AhHZa.22763$VR6.424412@twister.southeast.rr.com>
Source record: 110880

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308100211.2c5ebf2e@posting.google.com...
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f35ab81_5@corp.newsgroups.com>...
> >
> > Remember the maximum power transfer theorem? The transmitter probably
works
> > better into some impedances than into others. With an SWR of 1.4:1, the
> > transmitter will see a resistance between 35.7 ohms and 70 ohms with a
reactance
> > between zero and about plus or minus j15. Knowing the frequency and VF
of the
> > RG-8X, you should be able to estimate the two impedances seen by the
transmitter.
>
>
> Actually, i read off of my Smith Chart about +/- j20, but you are
> close.
>
> Anyhow, my point is that the ham "wife's tale" of adjusting the
> coax length for lowest SWR may be truly just a tale.

I hope this is a wifes tale that has long been discredited. Trimming cable
changes the impedance seen by the transmitter with no change to SWR. It is
true that there are a lot of people who dont understand the difference.
>
> However, in my case, the SWR doesn't change much, while the
> INCIDENT power does!!! To me, this may be due to the fact that the PA
> isn't 50 Ohms at the output (I'll bet not many really are), and so a
> swing of +/- j20 may improve or degrade how close you are to a
> conjugate match.
>
> What do you dudes think?
>
>
> Dr. Slick

2937. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 07:18:43 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <nrHZa.22764$VR6.424649@twister.southeast.rr.com>
Source record: 110879

That would give you 13db of return loss which would be an SWR less than 2:1
even if the far end was a dead short.
Given his current SWR I woud say this would result in a return loss of
around 30db. Numbers are a lot of by guess and by golly but think I am not
too far off.
"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:n0SdnZUE-Ka4wquiXTWJjA@comcast.com...
>
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308100205.3bb760ef@posting.google.com...
> Someone else suggested that i place the meter
> > right at the cantenna, to at least exclude the patch from meter to
> > dummy load.
> >
> No, you don't want to do that. Put as much loss as you can between the
meter
> and the Cantenna. 100 feet of RG58 will have about 6.5 db of loss. It will
> make your load a lot closer to 50 Ohms. There are Tables that show SWR as
a
> function of cable loss for a given mismatch. One chart that I have in
> "Reference Data for Radio Engineers" shows that with a load SWR of 1.4,
and
> 6.5 db of cable loss, the SWR at the driving end is around 1.075. Note
that
> you DO NOT want low loss coax.
>
> Tam/WB2TT
>
>

2938. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 07:35:08 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <MGHZa.22765$VR6.425378@twister.southeast.rr.com>
Source record: 110881

Its not gossip or old wives tale, I know first hand that motor oil will break down the varnish used on a lot of electronic parts. I had some old carbon resistors that fell in a bucket with some used motor oil. Set there for at least a couple of years in my storage shed. All the markings were disolved. It is my understanding that carbon compostion resistors have the varnish on them to keep contaminats from being absorbed by the resistors so it is reasonable to assume that removing it is a bad thing.

"Russ" <carlzomer@hotmail.com> wrote in message news:s34ejvs8t0rafq25r6t2227kdul3vi4s0v@4ax.com...
> On 10 Aug 2003 08:19:18 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
> wrote:
>
> >Well it would seem that the 'don't use motor oil' comment
> >which has been passed on by mouth to mouth over the decades
> >doesn't seem to stand up to scruteny.
> >Yes, the question is raised so many times over the years
> >and the same old stories pop up, but without any
> >substantiation such that it just appears to be gossip.
> >One statement mentions attack on resisters, where's the proof,
> >If it is true then it surely can be easily overcome.
> >Hopefully this time, one of the many posters over the
> >years on this subject will make observations that are
> >relevant to the present day instead of waiting for a book.
> >Art
> >
>
> Well Art, the detergents in modern motor oils are specifically
> formulated to dissolve carbon deposits and sludge (largely made up of
> carbon) and keep in in suspension. I'm pretty sure that the resistor
> in my Cantenna is carbon. Transformer oil is formulated to have a
> high dieletric strength. Mineral oil is relatively pure, lightweight
> petrolatum (like liquid Vaseline(r)) and has a pretty high dieletric
> strength just because of low impurities. Motor oil? I don't know.
> ATF? I don't know about that either. What I do know is that the
> designers of my dummy load specify either transformer oil or mineral
> oil. That's good enough for me. I'll mosey on down to the
> transformer shop of the local electric utility and buy the folks there
> a round of coffee in the morning or over to the veterinary supply and
> buy a gallon of mineral oil U. S. P. I think it's safer that way. We
> hams are in interestingly cheap lot. We'll spend thousands on a new
> rig that could break down tomorrow and then pour a gallon of
> "whatever" into the dummy load instead of spending twenty bucks for
> mineral oil or fifty bucks for MFJs transformer oil. This in a unit

> that with ordinary care will last a lifetime. Sheesh!
>
> Russ
>
> >
> >
> >
> >
> >
> >
> >
> >"Keyboard In The Wilderness" <KITW@forest.com> wrote in message
news:<4q8Za.31351$ff.14186@fed1read01>...
> >> From the Google Group Search Engine: For what it is worth
> >>
> >> The Handbook (at least my 1990 edition) has some information on this
> >> subject.
> >> In the Station Accessories chapter there are plans to build a couple of
> >> Cantenna type dummy loads. They mention an oil sold by Texaco (if I
remember
> >> correctly) for turbine lubrication that is, according to the author,
the
> >> same
> >> oil as is used in transformers. They quote the exact product
designation.
> >> Apparently, it's sold in minimum 5 gallon quantities and I think it's
about
> >> $5 per gallon. If anyone's interested, let me know and I'll look up the
> >> information and pass it along. It's supposed to be PCB-free, also.
> >>
> >> The article also cautions against using motor oil for various reasons,
among
> >> which is that it attacks the resistor (actually, I think it's the
additives
> >> that cause the problem).
> >>
> >>
> >>
> >>
> >> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
> >> news:85ed38d.0308090649.58de8f41@posting.google.com...
> >> > "Keyboard In The Wilderness" <KITW@forest.com> wrote in message
> >> news:<fjUYa.31252$ff.5358@fed1read01>...
> >> > > Jav -- asked many times before -- for the answers go to Groups
> >> Google.com
> >> > > http://groups.google.com/
> >> >
> >> > I don,t fully understand why motor oil should not be used
> >> > in a dummy load! I need to make one so I can calibrate
> >> > one of my instruments. I intend to use one of the uptodate

> >> > gallon paint cans that has a PTFE liner and solder the lid on.
> >> > Since we now have the means to use low wattage signals for
> >> > tuning up purposes there is obviously no reason to store it
> >> > in the shack . So what really is the problem with using
> >> > available oil instead of emulating the aproach of industrial
> >> > transformers or regurgitating old thoughts ?
> >> > Art
> >> >
> >> >
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> >> > >
> >> > > Search for Oil For Cantenna or Oil For Dummy Load
> >> > >
> >> > > Mineral Oil works well for me.
> >> > >
> >> > >
> >> > > "Javier Henderson" <javier@KJSL.COM> wrote in message
> >> > > news:863cgbdfxq.fsf@skylane.kjsl.com...
> >> > > > I got a Heathkit Cantenna recently, sans oil.
> >> > > >
> >> > > > Where do I find transformer oil? The few industrial suppliers in
my
> >> > > > area (Monterey, CA) want to sell me drums of the stuff. I only
need
> >> > > > a gallon...
> >> > > >
> >> > > > Is motor oil OK to use?
> >> > > >
> >> > > > 73,
> >> > > > -jav w6vms
>

2939. Re: Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 10:10:07 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh7q1v$9nq$1@sparta.btinternet.com>
Source record: 110882

It's easier to begin with the apperture of an isotrope which is the surface area of a sphere of radius Lambda/(2*Pi) = 0.1592 wavelengths.

Note, it is independent of the physical size of an antenna - only on wavelength or frequency.

So apperture of isotrope = Square(Lambda) / (4*Pi) square metres.

The gain of an isotrope by definition is unity.

It is of interest that at a distance of 0.1592 wavelengths from an antenna the radiated field is of the same order of magnitude as the near field.

2940. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 10:25:36 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308110225.1362e327@posting.google.com>
Source record: 110883

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308102130.27232da6@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308101751.200d330c@posting.google.com>...
> ...
> > What do you mean by "calibrated to the line"?
>
> The SWR meter should read zero reflected power when connected to a
> load whose impedance is equal to the line's. Does it? If not, it's
> not properly calibrated. Putting it another way, what's the
> directionality of the bridge?
>

You mean the directionality of the couplers inside the meter? I
don't know.
You can adjust the needle on the analog Daiwas to read zero watts with
nothing hooked up to them.

> ...
> >
> > Not so much a surprise as a disappointment! A difference of 70
> > watts incident power is totally unacceptable with only 8 feet of coax
> > length added.
>
> But the load presented to the amplifier is totally different in the
> two cases, most likely. Only if the amplifier's output impedance were
> the complex conjugate of the line's, and the line were lossless, and
> the amplifier behaved as a linear time-invariant system would you
> (should you) expect the power to remain unchanged.

I'm not sure i agree with your statement as you have written it.

The power would remain the same only if the load and the line
were perfect 50 Ohms and also lossless, then the length of the coax
should not matter at all.

This is certainly not the case on our bench, which is a problem,
because i want to have an approximation of how it will perform
attached to the antenna before i ship it out to the customer. A
difference of 70 watts is not acceptable.

> >
> > Tam brought up the suggestion that i try a really long piece of
> > RG-58 from meter to dummy load, to make the Cantenna more like 50
> > Ohms. Gonna try it.
>

> Or just tune the load to zero reflected power after you're sure the
> meter is properly calibrated...but that can be a catch-22 situation
> that the really long RG-58 can help with. Be aware, though, that
> "50-ohm" line seldom is -- it can be off 5 ohms or more. It's a cause
> of some consternation to those of us involved in calibration of
> precision RF test equipment.
>

Oh, definitely, especially the cheap stuff. But if the RG-58 went
around the world a couple of times, the end could be open or shorted,
and you would still measure 50 Ohms, most likely.

> Load-pull techniques are commonly used to characterize RF source
> impedances. You make known incremental changes to the load, and
> deduce from the change in output power what the source impedance is,
> assuming it's a linear time-invariant system. Note that adding length
> to a mismatched line is one way to make an incremental change to the
> load... I wouldn't necessarily say that the output impedance of a
> class C amplifier is meaningless, but it may well not be constant for
> all loads. and may depend on parameters you'd have trouble controlling
> from day to day.
>
> Cheers,
> Tom

Right, they did plenty of load-pulling on FETS at my former place
of employment. I think they may have been more meaningful for class A
linear CDMA PAs. But finding the max power transfer impedances with
small signal class A measurements doesn't guarantee that these will be
the optimum impedances the transistor wishes to see in class C mode.

But i don't think there is a practical way to measure the S22 of a
high powered Class C amp. Most companies don't really seem to care
how close or far from 50 Ohms it really is, all they care about is the
%PAE and Pout and harmonics dBc going INTO a 50 Ohm system. But even
ensuring that your bench will match your customer's bench is a
difficult thing.

Slick

2941. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 12:49:15 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308110449.1e6d37e2@posting.google.com>
Source record: 110884

Russ,
The point I am making is that some comments are repeated
so many times they take a life of their own
Think about it, the resistors of old are a far cry from
the carbon resistors of today which are not as porous,
if it is a worry then coat it with epoxy !
Then there is the "rust" question, the paint cans of today
have a teflon liner ! Even the latest ham data states that
motor oil CAN be used (no, it will not explode !) but raise
a question of "life", possibly a suggestive comment that you
change the oil every 5000 qso's.
Certainly industry gives a good guide as to what is the best
to use for their circumstances but it doesn't rule out every
thing else for all time, and this includes motor oil of which
there are many types.
Regards
Art

Russ <carlzomer@hotmail.com> wrote in message
news:<s34ejvs8t0rafq25r6t2227kdul3vi4s0v@4ax.com>...
> On 10 Aug 2003 08:19:18 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
> wrote:
>
> >Well it would seem that the 'don't use motor oil' comment
> >which has been passed on by mouth to mouth over the decades
> >doesn't seem to stand up to scruteny.
> >Yes, the question is raised so many times over the years
> >and the same old stories pop up, but without any
> >substantiation such that it just appears to be gossip.
> >One statement mentions attack on resisters, where's the proof,
> >If it is true then it surely can be easily overcome.
> >Hopefully this time, one of the many posters over the
> >years on this subject will make observations that are
> >relevant to the present day instead of waiting for a book.
> >Art
> >
>
> Well Art, the detergents in modern motor oils are specifically
> formulated to dissolve carbon deposits and sludge (largely made up of
> carbon) and keep in in suspension. I'm pretty sure that the resistor
> in my Cantenna is carbon. Transformer oil is formulated to have a
> high dieletric strength. Mineral oil is relatively pure, lightweight
> petrolatum (like liquid Vaseline(r)) and has a pretty high dieletric
> strength just because of low impurities. Motor oil? I don't know.

> ATF? I don't know about that either. What I do know is that the
> designers of my dummy load specify either transformer oil or mineral
> oil. That's good enough for me. I'll mosey on down to the
> transformer shop of the local electric utility and buy the folks there
> a round of coffee in the morning or over to the veterinary supply and
> buy a gallon of mineral oil U. S. P. I think it's safer that way. We
> hams are in interestingly cheap lot. We'll spend thousands on a new
> rig that could break down tomorrow and then pour a gallon of
> "whatever" into the dummy load instead of spending twenty bucks for
> mineral oil or fifty bucks for MFJs transformer oil. This in a unit
> that with ordinary care will last a lifetime. Sheesh!
>
> Russ
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> >
> >"Keyboard In The Wilderness" <KITW@forest.com> wrote in message
news:<4q8Za.31351$ff.14186@fed1read01>...
> >> From the Google Group Search Engine: For what it is worth
> >>
> >> The Handbook (at least my 1990 edition) has some information on this
> >> subject.
> >> In the Station Accessories chapter there are plans to build a couple of
> >> Cantenna type dummy loads. They mention an oil sold by Texaco (if I remember
> >> correctly) for turbine lubrication that is, according to the author, the
> >> same
> >> oil as is used in transformers. They quote the exact product designation.
> >> Apparently, it's sold in minimum 5 gallon quantities and I think it's about
> >> $5 per gallon. If anyone's interested, let me know and I'll look up the
> >> information and pass it along. It's supposed to be PCB-free, also.
> >>
> >> The article also cautions against using motor oil for various reasons, among
> >> which is that it attacks the resistor (actually, I think it's the additives
> >> that cause the problem).
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> >>
> >> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
> >> news:85ed38d.0308090649.58de8f41@posting.google.com...
> >> > "Keyboard In The Wilderness" <KITW@forest.com> wrote in message
> news:<fjUYa.31252$ff.5358@fed1read01>...
> >> > > Jav -- asked many times before -- for the answers go to Groups
> Google.com
> >> > > http://groups.google.com/

> >> >
> >> > I don,t fully understand why motor oil should not be used
> >> > in a dummy load! I need to make one so I can calibrate
> >> > one of my instruments. I intend to use one of the uptodate
> >> > gallon paint cans that has a PTFE liner and solder the lid on.
> >> > Since we now have the means to use low wattage signals for
> >> > tuning up purposes there is obviously no reason to store it
> >> > in the shack . So what really is the problem with using
> >> > available oil instead of emulating the aproach of industrial
> >> > transformers or regurgitating old thoughts ?
> >> > Art
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> >> > > Search for Oil For Cantenna or Oil For Dummy Load
> >> > >
> >> > > Mineral Oil works well for me.
> >> > >
> >> > >
> >> > > "Javier Henderson" <javier@KJSL.COM> wrote in message
> >> > > news:863cgbdfxq.fsf@skylane.kjsl.com...
> >> > > > I got a Heathkit Cantenna recently, sans oil.
> >> > > >
> >> > > > Where do I find transformer oil? The few industrial suppliers in my
> >> > > > area (Monterey, CA) want to sell me drums of the stuff. I only need
> >> > > > a gallon...
> >> > > >
> >> > > > Is motor oil OK to use?
> >> > > >
> >> > > > 73,
> >> > > > -jav w6vms

2942. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 13:34:43 UTC
From: Joe <joe@nbr1.com>
Message-ID: <TXMZa.120967$o%2.53430@sccrnsc02>
Source record: 110885

I have trouble with rabbits eating my coax cables.

"Rick" <n1jee@intergate.com> wrote in message news:3f35d2ff_4@newsfeed...
> I have the same problem with my bird feeders, I used Mobil 1 oil at the
base
> and on the lid, sit back and be prepaired to laugh your ass off !
> Rick
> "MailfrmPA" <mailfrmpa@aol.com> wrote in message
> news:20030810000201.14567.00001275@mb-m02.aol.com...
> > >Too many of any animal in the wrong area is bad and they must be
> eliminated
> > >by killing or moving.
> > >
> > >
> >
> > Kinda like candidates for governor in California!
>
>

2943. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 15:30:12 UTC
From: Jim Weir <jim@rst-engr.com>
Message-ID: <nidfjvkfqgnlt1abkfkfml6v31ab49beec@4ax.com>
Source record: 110886

EASY, now.

Jim, a dead serious candidate
WX6RST

->> > >Too many of any animal in the wrong area is bad and they must be
->> eliminated
->> > >by killing or moving.
->> > >
->> > >
->> >
->> > Kinda like candidates for governor in California!

Jim Weir, VP Eng. RST Eng. WX6RST
A&P, CFI, and other good alphabet soup

2944. Re: double sized quad antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 16:42:10 UTC
From: rfmscpa@earthlink.net
Message-ID: <b0ce6aad.0308110842.28db8939@posting.google.com>
Source record: 110887

Brian

See ARRL Antenna Compendiums Vol 5, pg 55 & Vol 6, pg 227 for
construction articles. Claimed gain is approx. 2dbd over 1 wl quads &
2.5 dbd over yagis with same boom length.

Terry
W8EJO

Brian Howie <brian@nospam.demon.co.uk> wrote in message
news:<+lLfUOBDAqN$EwJB@b-howie.demon.co.uk>...
> I recall many years ago seeing a 3 ele quad antenna in one of the RSGB
> handbooks. Instead of the usual 1 lambda loops it used 2 lambda and had
> an open circuit at the top of each element -it may also have been fed by
> a 1/4 matching transformer. The claimed gain was high. Does anyone have
> any info ?
>
> Brian GM4DIJ

2945. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 16:47:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjfi5jj0i40q18@corp.supernews.com>
Source record: 110888

Art Unwin KB9MZ wrote:
> Russ,
> The point I am making is that some comments are repeated
> so many times they take a life of their own
> Think about it, the resistors of old are a far cry from
> the carbon resistors of today which are not as porous,
> if it is a worry then coat it with epoxy !
> Then there is the "rust" question, the paint cans of today
> have a teflon liner ! Even the latest ham data states that
> motor oil CAN be used (no, it will not explode !) but raise
> a question of "life", possibly a suggestive comment that you
> change the oil every 5000 qso's. . .

DX QSOs with your dummy load count as "harsh conditions", so you've got to change the oil every 2500 DX QSOs if you don't want your dummy load wearing out early.

Roy Lewallen, W7EL

2946. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 16:54:47 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308110854.51112a88@posting.google.com>
Source record: 110889

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308110225.1362e327@posting.google.com>...
...
> You mean the directionality of the couplers inside the meter? I
> don't know.
> You can adjust the needle on the analog Daiwas to read zero watts with
> nothing hooked up to them.

:-) The meter-needle zero generally not a very big part of the
problem! Yes, it's the coupler (bridge) inside that you want to make
sure is calibrated for your reference impedance. If it's not
adjustable, at least learn what it is calibrated to, or how good it is
for your reference impedance.

...

> But i don't think there is a practical way to measure the S22 of a
> high powered Class C amp. Most companies don't really seem to care
> how close or far from 50 Ohms it really is, all they care about is the
> %PAE and Pout and harmonics dBc going INTO a 50 Ohm system. But even
> ensuring that your bench will match your customer's bench is a
> difficult thing.

So you've come back around to what some of us here have been saying
for years. A transmitter or amplifier may be designed to work
optimally into some particular impedance (say 50 ohms), but have a
source impedance vastly different from that. Whether it's a
measurable impedance or not is moot: what matters is that you present
a reasonable load to it. There ARE cases where a matched source
impedance is important, but they are rare in ham transmitter work.

The easy way to insure proper operation is to present the
transmitter/amplifier with the right load. A properly calibrated SWR
meter (or as Reg would have it, a "transmitter loading indicator")
will tell you when you have such a load. Yours is telling you that
you do not. In such a case, I'd work on a match to the antenna (or
the Cantenna or whatever) first--well, right after making sure the
meter was telling me the truth or something close to it. When you get
that correct load, then the length of coax won't matter noticably,
assuming the SWR meter is calibrated to the line impedance.

You generally don't have control of your customer's bench, but you can
specify some particular load impedance and then make sure you test
with that, and leave it to the customer to insure that they provide
that load. It's reasonable (if not common) to specify a range of load
impedances over which some perhaps slightly reduced performance is

achieved. You may, for example, get more power but also higher distortion products, at a non-optimal load.

Cheers,
Tom

2947. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 17:12:05 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <57jfjvcdmteplnjmj6sv5ett85lc0am1nk@4ax.com>
Source record: 110890

On 11 Aug 2003 09:54:47 -0700, k7itm@aol.com (Tom Bruhns) wrote:

> In such a case, I'd work on a match to the antenna (or
>the Cantenna or whatever) first--well, right after making sure the
>meter was telling me the truth or something close to it.

Hi Tom,

This is kind of a chicken and egg problem.

Calibrate the meter against the load.

Calibrate the load against the meter.

It would seem that discussion would eventually get around to bringing in a known and stable reference. The length of lossy line would suffice for a rough cut solution but still leaves a bench full of rather sloppy instruments.

73's
Richard Clark, KB7QHC

2948. 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 18:12:39 UTC
From: Tom Sedlack <cts050@nospamhere.email.mot.com>
Message-ID: <bh8m9arep1@avnika.corp.mot.com>
Source record: 110892

I was thinking (finally) about simple dipoles and such and have this question:

I plan on constructing some simple dipoles. For fun, I have been modeling them using EZNEC. It seems the "common" practice is to feed the antenna with 50 ohm cable. The antenna feed point impedance is usually ~70 Ohms. Would it make more sense to feed a dipole with 75 ohm TV coax to keep the SWR low on the cable and have the mismatch at the radio? If I plan on using an antenna tuner, would this setup be preferred over 50 ohm feed cable? Does it really make any difference?

Just Wondering,

Tom

2949. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 18:20:10 UTC
From: dplatt@radagast.org
Message-ID: <vjfniqj7be3429@corp.supernews.com>
Source record: 110891

In article <vjfi5jj0i40q18@corp.supernews.com>,
Roy Lewallen <w7el@eznec.com> wrote:

>DX QSOs with your dummy load count as "harsh conditions", so you've got
>to change the oil every 2500 DX QSOs if you don't want your dummy load
>wearing out early.

I imagine that all of the (unradiated) CQs being fed into the dummy
load end up being absorbed by the oil and eventually precipitate out
as a sludge on the bottom of the can?

Maybe there's a way to filter them out of the oil and recycle them.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

2950. Re: Automatic RF noise cancellation and audio noise measurement

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 18:50:28 UTC
From: "Dick Carroll;" <dixie@townsqr.com>
Message-ID: <bh8ohk$4e6$0@208.207.71.129>
Source record: 110893
Cross-posted to: rec.radio.amateur.homebrew,rec.radio.amateur.antenna,comp.dsp,sci.electronics.design

Jerry Avins wrote:

> An
> open-coil hot plate with a ceramic holder to support and contain the
> nichrome element as filament*. Topped with galvanized window screening,
> the zinc removed with muriatic acid so as not to noxiously sublime,
> resting on the ceramic as (literally!) grid. Small glass beads -- around
> 1/16" -- scattered on it to create a gap and hold the screening flat.
> Atop that, a pie tin weighted with cooling water to serve as
> (literally!) plate. With 700 volts on the plate, I got measurable
> current on my 1000 ohm/volt meter. At -90 volts on the grid, the current
> was too small to read. The gain was enough to sustain oscillation.

Now **that's** Homebrew!

2951. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 18:52:32 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <wBycnap9Hq1keKqiXTWJiQ@crocker.com>
Source record: 110894

"Tom Sedlack" <cts050@nospamhere.email.mot.com> wrote in message
news:bh8m9arep1@avnika.corp.mot.com...
> I was thinking (finally) about simple dipoles and such and have this
> question:
>
> I plan on constructing some simple dipoles. For fun, I have been modeling
> them using EZNEC. It seems the "common" practice is to feed the antenna
with
> 50 ohm cable. The antenna feed point impedance is usually ~70 Ohms. Would
it
> make more sense to feed a dipole with 75 ohm TV coax to keep the SWR low
on
> the cable and have the mismatch at the radio? If I plan on using an
antenna
> tuner, would this setup be preferred over 50 ohm feed cable? Does it
really
> make any difference?
>
> Just Wondering,
>
> Tom
>
>
>
unless these are uhf dipoles with very long feedlines the difference in swr
between a 50 and 75 ohm coax won't make any difference to you.

2952. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 18:59:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f37e8e0$1_4@corp.newsgroups.com>
Source record: 110895

Jimmy wrote:
> I hope this is a wifes tale that has long been discredited. Trimming cable
> changes the impedance seen by the transmitter with no change to SWR.

However, a 50 ohm SWR meter reading will change as one changes the
length of the ladder-line. When the 50 ohm SWR meter reads 1:1,
the transmitter is seeing 50 ohms. That's how I tune my dipole.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2953. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 19:34:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh8r49$7me$1@hercules.btinternet.com>
Source record: 110896

> I plan on constructing some simple dipoles. For fun, I have been modeling
> them using EZNEC. It seems the "common" practice is to feed the antenna
with
> 50 ohm cable. The antenna feed point impedance is usually ~70 Ohms. Would
it
> make more sense to feed a dipole with 75 ohm TV coax to keep the SWR low
on
> the cable and have the mismatch at the radio? If I plan on using an
antenna
> tuner, would this setup be preferred over 50 ohm feed cable? Does it
really
> make any difference?
==========

Tom you are quite correct. The lowest loss on a transmission line occurs when the line impedance is matched to the antenna feedpoint impedance. So a standard 75-ohm line is a better match to the centre of a simple 1/2-wave dipole which is around 70 ohms when at exact resonance.

Furthermore, the attenuation of a 75-ohm TV line with the same overall diameter is less than a 50-ohm line. Especially if the 75-ohm line does not have solid polyethylene insulation but is partially air spaced. The two effects, between them, may result in a noticeable increase in signal strength on the 10m band if the feedline is very long, say 150 feet or more. For short feeders there will no practical difference between the two impedances.

But coax of any impedance limits use of an antenna to frequencies at which it is 1/2-wave resonant and 3/2-waves resonant.

To take advantage of a tuner you must use a balanced high impedance feedler such as 450-ohm ladder line or 600-ohm open-wire line. For the same weight of line the higher the impedance the better. Line loss can then be reduced to a negligible amout. Less than either 50 or 75-ohm coax at any frequency.

But the big advantage of the high impedance line is that its very low loss applies to ALL HF bands from 160m to 10m. The antenna does not have to be resonant at any frequency. It can be of random length and work all bands if it is long enough at the lower frequencies. The high-Zo feedline can also be of random length. Best to bring it all the way from antenna into the shack near the tuner.

You will never have a better, all-round, all band antenna than a high dipole fed via 600-ohm line, overall dipole length as long as you can fit into your back yard.

Reg, G4FGQ

2954. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 19:47:29 UTC
From: Jerry <Jerry@spam.net>
Message-ID: <lpSZa.18372$5e.936848@twister.socal.rr.com>
Source record: 110897

So Reg, would you advise using a (4 to 1) balun with the open wire on one side, and a short run of coax, say 20 feet or so on the other to the antenna tuner? Would this work well? Does one need to 'make' the open wire feeder, or is the commercial stuff you buy ala ham coax suppliers good enough?

regards, Jerry

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:bh8r49$7me$1@hercules.btinternet.com...
> > I plan on constructing some simple dipoles. For fun, I have been modeling
> > them using EZNEC. It seems the "common" practice is to feed the antenna
> with
> > 50 ohm cable. The antenna feed point impedance is usually ~70 Ohms. Would
> it
> > make more sense to feed a dipole with 75 ohm TV coax to keep the SWR low
> on
> > the cable and have the mismatch at the radio? If I plan on using an
> antenna
> > tuner, would this setup be preferred over 50 ohm feed cable? Does it
> really
> > make any difference?
> ==============================
>
> Tom you are quite correct. The lowest loss on a transmission line occurs
> when the line impedance is matched to the antenna feedpoint impedance. So a
> standard 75-ohm line is a better match to the centre of a simple 1/2-wave
> dipole which is around 70 ohms when at exact resonance.
>
> Furthermore, the attenuation of a 75-ohm TV line with the same overall
> diameter is less than a 50-ohm line. Especially if the 75-ohm line does not
> have solid polyethylene insulation but is partially air spaced. The two
> effects, between them, may result in a noticeable increase in signal
> strength on the 10m band if the feedline is very long, say 150 feet or more.
> For short feeders there will no practical difference between the two
> impedances.
>
> But coax of any impedance limits use of an antenna to frequencies at which
> it is 1/2-wave resonant and 3/2-waves resonant.
>
> To take advantage of a tuner you must use a balanced high impedance

feedler
> such as 450-ohm ladder line or 600-ohm open-wire line. For the same weight
> of line the higher the impedance the better. Line loss can then be
reduced
> to a negligible amout. Less than either 50 or 75-ohm coax at any
frequency.
>
> But the big advantage of the high impedance line is that its very low loss
> applies to ALL HF bands from 160m to 10m. The antenna does not have to be
> resonant at any frequency. It can be of random length and work all bands
if
> it is long enough at the lower frequencies. The high-Zo feedline can also
> be of random length. Best to bring it all the way from antenna into the
> shack near the tuner.
>
> You will never have a better, all-round, all band antenna than a high
dipole
> fed via 600-ohm line, overall dipole length as long as you can fit into
your
> back yard.
> ----
> Reg, G4FGQ
>
>

2955. Electronically tuned Helix

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 20:07:12 UTC
From: whru@msn.com
Message-ID: <e52bdeaf.0308111207.48984cf4@posting.google.com>
Source record: 110898

A few years back I read a paper which described an electronically tuned HF Helical antenna. It was a shunt fed Helical monopole which employed electronically switched PIN diodes to add or subtract helix turns. As far as I remember a 6ft helix antenna was resonant between 4 to 30 MHZ by switching the PIN diodes. Diameter = 19", 20 turns, Q<50, average power = 400W.
Now the question to the antenna experts: was such an antenna ever developed and manufactured. If yes, who did.
Thanks es 73
Fred
wb6iiq / dh1nwr

2956. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 20:25:24 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <rptfjv41kr1q4u5c5ig4mcoo0jdh69a47n@4ax.com>
Source record: 110916

On Sun, 10 Aug 2003 23:13:01 -0400, "DOUGLAS SNOWDEN"
<snowden@peoplepc.com> wrote:

>I am still trying to decide what type of tower to buy for a house I will be
>moving into. I would like something I can handle easily by myself, meaning
>either crankup or tiltover aluminum. I was thinking about maybe a Heights
>or Universal aluminum 50-60ft on a tiltover base, not the foldover base. To
>save money I would like to fabricate some sort of steel post along the side
>of the tower, with a pulley/winch arrangement. Not being an engineer, I am
>looking for ideas on how high the pole shoule be - maybe as a ratio of the
>tower height and what would be a good safe diameter pipe. Am I looking for
>trouble? Typical commercial foldover mechanisms are expensive. Should I
>just rent a cherry picker for the occasional times I would be tilting the
>tower over? As light as it would be that should be a solution.

Raising a tower whether fold over, or using a raising fixture is a
whole series of tradeoffs.

Some things to think about:

A lot depends on how much room you have...can you lay a 50 foot tower
straight out?

Actually with a tilt over base three men can walk up a 50 foot ROHN 25
G, but not with much of an antenna on it. At 40 foot three men can
walk up the tower with a small tribander on it.

If you want 50 feet and plan on using a raising fixture (post int he
ground) as opposed to a fold over, it can take a pretty hefty post
with a heavy base.

Remember that with a raising fixture the loads exerted on the base
hing(s) can be tremendous. Make sure th tower is capable of
supporting that much diagonal pull. When you start raising almost all
the pull is at 90 degrees to the base. Something the tower legs may
not be strong enough to support.

The taller the fixture the less load on the tower legs. The farther
out the attachment to the tower the greater the load on the tower legs
and up to a point the less effort required to raise the tower.

When pulling a tower up using a raising fixture the two points with
the largest forces are the base and the attach point. Raising the
tower so it's already part way up...supported by a ladder, or some
such device can reduce the side load at the attach point and base
substantially. Depending on the size/weight of the antenna, mast, and
rotor the weight supported at the attach point can be considerable.

>
The taller the raising fixture and the farther out the attach point
(in general to a point) the less side load at the attach point.
OTOH the taller the raising fixture the heavier the material required
for the fixture.

One additional point. IF you use a raising fixture AND have several
men helping by lifting and pushing against the tower it can greasily
reduce the effort required by whoever operates the raising fixture and
it can reduce the side loads on the tower at both the attach point and
the base.

Typically fold over towers are reinforced at and within some distance
of the pivot point.

Mine, we installed one section at a time using a gin pole.
http://www.rogerhalstead.com/tower.htm
Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

>
>Doug
>
>N4IJ
>
>

2957. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 20:39:19 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <9mvfjv8etiv9ld53s5h17hguv4sp96j1vv@4ax.com>
Source record: 110899

On Sun, 10 Aug 2003 01:21:08 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Are squirrels edible ?

You bet and they are delicious if you can get past the idea of a
skinned one looks exactly like a rat. <:-))

They are highly sought after during small game season in Michigan.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

>
>

2958. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 20:41:43 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308111241.3e87fff1@posting.google.com>
Source record: 110900

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308110225.1362e327@posting.google.com>...
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308102130.27232da6@posting.google.com>...
...
> > But the load presented to the amplifier is totally different in the
> > two cases, most likely. Only if the amplifier's output impedance were
> > the complex conjugate of the line's, and the line were lossless, and
> > the amplifier behaved as a linear time-invariant system would you
> > (should you) expect the power to remain unchanged.
>
>
> I'm not sure i agree with your statement as you have written it.
>
> The power would remain the same only if the load and the line
> were perfect 50 Ohms and also lossless, then the length of the coax
> should not matter at all.

It's true that if the load and line are the same impedance (e.g. 50 ohms), no matter what the line length is, you'll present that impedance (e.g. 50 ohms) to the source and it will deliver constant power, independent of line length. If the line is lossless, then the power delivered to the load will be independent of line length. Fine. But your OP suggested that the load is NOT the same as the line impedance (indicated SWR not 1:1), so another case is perhaps equally or even more interesting.

If you require that the source impedance match the line impedance (and because the line is lossless, it's impedance must be purely resistive), then the net power delivered to the line for a given SWR on the line is invariant with changes in line length (changes in reflection coefficient angle in the load presented at the source). (Straightforward though perhaps tedious to prove, or just convince yourself with some examples.) Since the line is lossless, the power to the load is invariant. That's the scenario I suggested above.

So with a lossless line, and EITHER the load OR the source matched to the line impedance, the power delivered to the load will be invariant with line length.

As you also noted, however, transmitters/power amplifiers are seldom going to be 50 ohm sources (though designed to work into 50 ohm loads), and therefore you should expect the power to vary with the load--in other words, with the angle of the reflection coefficient in a 50-ohm-reference system.

Cheers,
Tom

2959. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:01:52 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <bh9028phk1@news.service.uci.edu>
Source record: 110901

You aren't running a Beverage antenna by any chance, are you? Cuz, if
you give a squirrel a beverage..... :-)

jk

Stuart wrote:

> Antenna Group~
>
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables. They seem to be particularly attracted to
> the self-vulcanizing rubber used to seal the connections but they have eaten
> some coax cables as well. Anyone know of a cure for this problem?
>
> Thanks
>
> Stuart, ki6qp
>
>

2960. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:01:52 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <he0gjvs3oj9g1a9nq1tt09ausf31hk6bea@4ax.com>
Source record: 110902

On Sun, 10 Aug 2003 09:29:49 -0400, "WB3FUP \(Mike Hall\)"
<wb3fup@msn.com> wrote:

>Take a trip though Fairmont Park in Philly. Nothing green below 4 of 5
>foot. Overpopulation is as much a problem as over hunting, a potentially
>more serious to humans as diseased animals die..

Here they even have limited hunts in park areas and the city forrest
to reduce the over populations. Every time they do it's a battle with
the environmentalists. I guess they figure starving to death, or the
deer being killed by dogs or coyotes is more humane.

At least for the time being herd management and common sense is
prevailing.

I've not had any problems with squirrels getting into the coax...yet.
Maybe it's my cat chasing them (and the stray dogs) out of the yard.
Big cat. Hates dogs. Loves kids. Chased every dog in the
neighborhood home except one. They ever meet and I'll probably be
looking for a new cat, although he did get into a fight (attacked) a
full grown black lab that came in to the yard...and won.

The dog walked up behind the little neighbor girl and the cat went
ballistic.

When he was much younger he took in after a squirrel. The squirrel
went up a tree with the car right behind it. The squirrel bailed from
something like 25-30 feet up. The cat never slowed and went right
after him. However when the squirrel went up the next tree the cat
stopped at the bottom and just looked up.... I think he learned
something that day. <:-)) driveways are pretty hard when hit from 30
feet up.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

2961. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:04:57 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <671gjvcsvl8nmciklvpssqpd4i6jkl6r53@4ax.com>
Source record: 110903

On Mon, 11 Aug 2003 13:34:43 GMT, "Joe" <joe@nbr1.com> wrote:

>I have trouble with rabbits eating my coax cables.

They cook up as good as, or better than squirrels...unless they are
Jack Rabits.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>
>"Rick" <n1jee@intergate.com> wrote in message news:3f35d2ff_4@newsfeed...
>> I have the same problem with my bird feeders, I used Mobil 1 oil at the
>base
>> and on the lid, sit back and be prepaired to laugh your ass off !
>> Rick
>> "MailfrmPA" <mailfrmpa@aol.com> wrote in message
>> news:20030810000201.14567.00001275@mb-m02.aol.com...
>> > >Too many of any animal in the wrong area is bad and they must be
>> eliminated
>> > >by killing or moving.
>> > >
>> > >
>> >
>> > Kinda like candidates for governor in California!
>>
>>
>

2962. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:10:47 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <q81gjvk9ahh2mctre5iuasmd7iekcb1c6k@4ax.com>
Source record: 110904

On Sat, 9 Aug 2003 22:38:19 -0400, "WB3FUP \(Mike Hall\)"
<wb3fup@msn.com> wrote:

>Yes they are. They are also probably protected during most of the year.
>Here in Delaware the season on squirrel is in late September early October
>if I recall correctly. Also in Delaware, do not know about other locales,
>unless you are a farmer, living on a farm that provides a substantial
>portion of your income it would get to be awfully expensive to shoot
>squirrels, and get caught at it. There is an exception to most game laws
>for farmers in the State - but thinking about it now it might just be an
>exception from a license, not seasons.

That's one of those "it all depends".

Here in Michigan the farmer does not need to purchase a small game
license to hunt on his own land. For deer, he does.

If in the specific case of critters destroying crops as in major
damage they can apply for permits to hunt them. Those permits are
usually issued after a visit from the DNR (in some cases)

Unfortunately coax doesn't count, but some department of Natural
Resources (or what ever they are called in your neck of the woods)
will help you live trap them for relocation.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S/N CD-2)

2963. Re: EZ Way tower sheared hinge pin

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:21:47 UTC
From: ddl@danlan.*com
Message-ID: <1154045@news1.IPSWITCHS.CMM>
Source record: 110909

(following up to my own message)

Based on the responses I've received it seems that my hinge is different from everybody else's. The ends of the tube are welded shut (and possibly the pin is welded to the end or ends--I can't tell). There are no grease fittings. So while I could probably jack the tower up such that the hinge is correctly aligned, I can't simply drive out the old pin and put in a new one. I think the end welds have to be ground off and then maybe repaired after the new pin is in place. Hopefully a welder/machinist will be able (and willing under the circumstances) to do this. It might be nice to have a couple of lugs welded near the top of the pole as well. Then I could run a safety chain around the tower to prevent it from falling off the pole if something like this happens again. In fact, it might be a good idea to do this first, making the subsequent work safer.

Dan Lanciani
ddl@danlan.*com

2964. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:24:06 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308111324.7c3872d@posting.google.com>
Source record: 110905

"Jimmy" <Gfender@carolina.rr.com> wrote in message
news:<KcHZa.22761$VR6.415447@twister.southeast.rr.com>...
> This means your shield has RF on it .
> Also triming cable has nothing to do with SWR.

In theory, yes. It would be on the constant VSWR circles, assuming
50 Ohm transmission line!

Trimming the cable WILL have something to do with the series
reactance that the PA will see, and may affect the impedance match.

Slick

2965. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:29:41 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <hn1gjvobkq5gk59qtuj6oku4qmggm71ibp@4ax.com>
Source record: 110915

On Sun, 10 Aug 2003 15:10:19 -0400, "J. McLaughlin"
<JCM@Power-Net.Net> wrote:

>Dear Ed:
> On my farm, varmints are shot on sight. There is no component of
>hunting or enjoyment or torture. It is a matter of stopping theft and
>the real danger that their holes present to livestock, humans, and even
>farm machinery. (I have a nasty scar on my shin due to a plunge into a
>woodchuck hole.) They also pose a danger to drainage systems.
> I have never shot at a squirrel. They are very rare here and just
>not a problem. Woodchucks and deer are the major problems. Deer cause
>hundreds of accidents, some quite serious, per year in this county

You want a thrill...I was landing my airplane (a 3100#, High
performance/complex/retractable at the Gladwin Airport (GDW) one night
when a big doe decided she wanted to be on the other side of the
runway

http://www.rogerhalstead.com/833pics.htm (bout 243K)

The mains had just touched down the nose gear was still up when she
charged across. Her head hit the underside of the leading edge of the
right wing about 2 feet out from the fuselage. Just about inside the
prop circle.

The impact drove her head down and then the right main hit her with
the wheel running over. It tore the gear doors right off and busted
the stainless steel brake line.

All this at something like 70 MPH drove the right wing up and of
course the left wing down. The wing tip was probably within 3 or 4
inches of hitting the runway. I could see the runway lights above it
as I was watching out of the corner of my eye.
I managed to maintain control, riding down the runway on the left
main only. I didn't even know if I had a right main still attached.
I kept it on one wheel as long as possible and then the right main
settled onto the pavement. (Yippie! I had one!)

Now I was riding on both mains with the nose gear still up in the
air...I didn't know if I had one of those either. Fortunately I did
and the roll out was uneventful...other than I discovered that broken
brake line which resulted in only having brakes on the left side.

Between the brake line, tire, gear doors, hinges and a very small dent
on the underside of the leading edge the freight came to a bit over
$5,600. Those little tiny stamped hinges for the gear doors are $480
each.

They said it was either the third or fourth deer airplane accident in
the previous two weeks.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S/N CD-2)
>alone.
> Someone who took delight in torturing anything would be a pariah in
>this most rural and tolerant township. That is just not on.
> ..... and back to antennas
> 73 Mac N8TT

2966. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:31:22 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308111331.1a7672@posting.google.com>
Source record: 110906

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308110854.51112a88@posting.google.com>...
>
> :-) The meter-needle zero generally not a very big part of the
> problem! Yes, it's the coupler (bridge) inside that you want to make
> sure is calibrated for your reference impedance. If it's not
> adjustable, at least learn what it is calibrated to, or how good it is
> for your reference impedance.
>

It's all supposted to be for 50 Ohms, or course. And that is the
only adjustment on the meter.

>
> The easy way to insure proper operation is to present the
> transmitter/amplifier with the right load. A properly calibrated SWR
> meter (or as Reg would have it, a "transmitter loading indicator")
> will tell you when you have such a load. Yours is telling you that
> you do not. In such a case, I'd work on a match to the antenna (or
> the Cantenna or whatever) first--well, right after making sure the
> meter was telling me the truth or something close to it. When you get
> that correct load, then the length of coax won't matter noticably,
> assuming the SWR meter is calibrated to the line impedance.
>

I've never seen an SWR meter that wasn't designed for 50 Ohms...
:/

If you mean adjusting the meter so that the forward power is full
scale deflection, well, that's not needed for a cross-needle SWR
meter.

I'm gonna try the long RG-58 trick...

Slick

2967. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:36:32 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308111336.7a91f9c0@posting.google.com>
Source record: 110907

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<57jfjvcdmteplnjmj6sv5ett85lc0am1nk@4ax.com>...
>
> This is kind of a chicken and egg problem.
>
> Calibrate the meter against the load.
>
> Calibrate the load against the meter.
>
> It would seem that discussion would eventually get around to bringing
> in a known and stable reference. The length of lossy line would
> suffice for a rough cut solution but still leaves a bench full of
> rather sloppy instruments.
>
> 73's
> Richard Clark, KB7QHC

I've never seen an SWR meter for other than a 50 Ohm system, so
i'm not quite sure what Tom means by all this. I certainly can't
easily adjust the directionality of the couplers inside my Daiwa!

It would be nice to have a reference 50 Ohm dummy load, especially
a higher power one, that stayed close to 50 ohms even at higher
frequencies. In the meantime, i'm gonna try the long RG-58 trick.

Slick

2968. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 21:38:45 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bh92d7$vm2mj$1@ID-134747.news.uni-berlin.de>
Source record: 110908

If you want 600 ohm I think you will have to roll your own. I use
commercial 450 ohm line myself. There will be a balun in your tuner (if it
will directly feed ladder line) so why not just run the wire to the tuner,
and not bother with coax at all.

--
73 es cul

wb3fup
a Salty Bear

"Jerry" <Jerry@spam.net> wrote in message
news:lpSZa.18372$5e.936848@twister.socal.rr.com...
> So Reg, would you advise using a (4 to 1) balun with the open wire on one
> side, and a short run of coax, say 20 feet or so on the other to the
antenna
> tuner? Would this work well? Does one need to 'make' the open wire
feeder,
> or is the commercial stuff you buy ala ham coax suppliers good enough?
>
> regards, Jerry
>
> "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
> news:bh8r49$7me$1@hercules.btinternet.com...
> > > I plan on constructing some simple dipoles. For fun, I have been
> modeling
> > > them using EZNEC. It seems the "common" practice is to feed the
antenna
> > with
> > > 50 ohm cable. The antenna feed point impedance is usually ~70 Ohms.
> Would
> > it
> > > make more sense to feed a dipole with 75 ohm TV coax to keep the SWR
low
> > on
> > > the cable and have the mismatch at the radio? If I plan on using an
> > antenna
> > > tuner, would this setup be preferred over 50 ohm feed cable? Does it
> > really
> > > make any difference?
> > ==============================
> >
> > Tom you are quite correct. The lowest loss on a transmission line
occurs
> > when the line impedance is matched to the antenna feedpoint impedance.

So
> a
> > standard 75-ohm line is a better match to the centre of a simple
1/2-wave
> > dipole which is around 70 ohms when at exact resonance.
> >
> > Furthermore, the attenuation of a 75-ohm TV line with the same overall
> > diameter is less than a 50-ohm line. Especially if the 75-ohm line does
> not
> > have solid polyethylene insulation but is partially air spaced. The two
> > effects, between them, may result in a noticeable increase in signal
> > strength on the 10m band if the feedline is very long, say 150 feet or
> more.
> > For short feeders there will no practical difference between the two
> > impedances.
> >
> > But coax of any impedance limits use of an antenna to frequencies at
which
> > it is 1/2-wave resonant and 3/2-waves resonant.
> >
> > To take advantage of a tuner you must use a balanced high impedance
> feedler
> > such as 450-ohm ladder line or 600-ohm open-wire line. For the same
weight
> > of line the higher the impedance the better. Line loss can then be
> reduced
> > to a negligible amout. Less than either 50 or 75-ohm coax at any
> frequency.
> >
> > But the big advantage of the high impedance line is that its very low
loss
> > applies to ALL HF bands from 160m to 10m. The antenna does not have to
be
> > resonant at any frequency. It can be of random length and work all
bands
> if
> > it is long enough at the lower frequencies. The high-Zo feedline can
also
> > be of random length. Best to bring it all the way from antenna into
the
> > shack near the tuner.
> >
> > You will never have a better, all-round, all band antenna than a high
> dipole
> > fed via 600-ohm line, overall dipole length as long as you can fit into
> your
> > back yard.
> > ----
> > Reg, G4FGQ
> >

> >
>
>

2969. Re: Layout for G5RV twin feedline? --solved

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 22:04:41 UTC
From: Harry George <hgg9140@seanet.com>
Message-ID: <m3bruvn952.fsf_-_@wilma.local>
Source record: 110918

W5DXP <Cecil.A.Moore@ieee.org> writes:

> Harry George wrote:
> > I'm thinking "a" is my best bet, due to 90 to dipole, but I've
> > never heard of running the feedline horizontally.
>
> "a" is best. You probably want to keep the feedline from radiating
> so install a 1:1 choke at the coax/twinlead junction.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>

Thanks for the feedback. Actually, I just moved everything about 12'
west. Now have a mast on the deck, clean runs for the dipole legs,
and a straight drop for the twinlead for 20' then an angle. I just
bypass (i.e., go over) the roof problem altogether. Seems to be
receiving ok; will check xmit ASAP.

>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

2970. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 22:15:49 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bh94il$e4l$1@slb2.atl.mindspring.net>
Source record: 110910

Mike:

[snip]
"WB3FUP (Mike Hall)" <wb3fup@msn.com> wrote in message
news:bh92d7$vm2mj$1@ID-134747.news.uni-berlin.de...
> If you want 600 ohm I think you will have to roll your own. I use
> commercial 450 ohm line myself. There will be a balun in your tuner (if
it
> will directly feed ladder line) so why not just run the wire to the tuner,
> and not bother with coax at all.
>
> --
> 73 es cul
>
> wb3fup
> a Salty Bear
[snip]

Many want to use a few feet of coax in tandem with parallel wire [open wire 600 Ohm or 450 Ohm window line] just to pass the transmission line "through the wall".

If passing the line through the wall is the problem then just use a foot or so of electrical mains "zip cord" for that short passage. Simply solder a short piece of zip cord into the 450 Ohm window line at the appropriate place to allow the line to pass through a small 1/4 - 1/2 inch hole in the wall. The "impedance bump" caused by the short hunk of zip cord will never be noticed throughout the MF/HF bands.

--
Peter K1PO
Indialantic By-the-Sea, FL

2971. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 22:34:21 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F3819ED.15F1F0A6@cwis.net>
Source record: 110911

Tom,
If you hadn't said 75 ohm TV coax, I'd say it would
work just fine either way. If you would change that
"TV coax" to something like RG-59 (or whatever the other
size of 75 ohm cable is) you would have much less trouble
making connections. The TV stuff uses aluminum braid, which
is a real P.I.T.A. ...
'Doc

2972. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 22:36:16 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F381A60.AD33E46A@cwis.net>
Source record: 110912

Doug,
Take a look at a few of the tower sites that show
accessories. You don't have to buy from them, but you
can copy their fixtures...
'Doc

2973. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 22:42:38 UTC
From: NN7K@reno.rmci.net
Message-ID: <1QUZa.244$K8.164@fe01.atl2.webusenet.com>
Source record: 110913

My 2 cents (wont even buy a lolipop any more!) From the old VHF,er magazine, couple of thoughts: 1) Very lossey coax will show a prefect termination impedence even if open, or shorted, if sufficiant length is used (for the coax's attenuation) . For that reason, still keep a coil of RG-8 size coax (for power dissipation), with RUBBER DIALECTRIC (was origianlly made for attenuators at the Microwave Region) Even at 80 meters, with no load , has very low SWR! At 10 meters, and up, with a UHF connector on one end, and a N connector, on the other, with NO TERMINATION, makes a great dummy load to 2-300 watts!. and, 2) Just because you think you have a great match, can be a random event. to test , place a 1/4 wavelength piece of coax (figuring with velocity factor). If the SWR stays flat, you can assume a good match, if, howerer, the SWR climbs, then you need to check for a proper match (this will throw the worst condition into your coax , with this extra length, kinda like the opposite of trimming coax for the best match legends of old CB lore)! as info, Jim NN7K

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0308102130.27232da6@posting.google.com...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308101751.200d330c@posting.google.com>...
> ...
> > What do you mean by "calibrated to the line"?
>
> The SWR meter should read zero reflected power when connected to a
> load whose impedance is equal to the line's. Does it? If not, it's
> not properly calibrated. Putting it another way, what's the
> directionality of the bridge?
>
> ...
> >
> > Not so much a surprise as a disappointment! A difference of 70
> > watts incident power is totally unacceptable with only 8 feet of coax
> > length added.
>
> But the load presented to the amplifier is totally different in the
> two cases, most likely. Only if the amplifier's output impedance were
> the complex conjugate of the line's, and the line were lossless, and
> the amplifier behaved as a linear time-invariant system would you
> (should you) expect the power to remain unchanged.
> >
> > The transmitter does not have a mismatch sensor on it for reducing
> > power at high SWR. It naturally does output less wattage as the
> > transconductance is reduced with higher temperatures, but my
> > measurements were done in close proximity to each other.

> >
> > Exactly how would you measure the output impedance (S22) of a PA?
> > Drive it with a small signal (class A, linear mode) in one frequency
> > (F1), and then inject another frequency (F2) into the output, and then
> > measure the reflected F2 power? If i remember correctly, that's how
> > someone was trying to measure S22 at my former place of employment.
> > But all bets are off as soon as you go non-linear, or non-class A.
> > S-parameters are supposed to be all small signal.
> >
> > I don't think you can properly measure the S22 of a class C PA.
> >
> > Tam brought up the suggestion that i try a really long piece of
> > RG-58 from meter to dummy load, to make the Cantenna more like 50
> > Ohms. Gonna try it.
>
> Or just tune the load to zero reflected power after you're sure the
> meter is properly calibrated...but that can be a catch-22 situation
> that the really long RG-58 can help with. Be aware, though, that
> "50-ohm" line seldom is -- it can be off 5 ohms or more. It's a cause
> of some consternation to those of us involved in calibration of
> precision RF test equipment.
>
> Load-pull techniques are commonly used to characterize RF source
> impedances. You make known incremental changes to the load, and
> deduce from the change in output power what the source impedance is,
> assuming it's a linear time-invariant system. Note that adding length
> to a mismatched line is one way to make an incremental change to the
> load... I wouldn't necessarily say that the output impedance of a
> class C amplifier is meaningless, but it may well not be constant for
> all loads. and may depend on parameters you'd have trouble controlling
> from day to day.
>
> Cheers,
> Tom

2974. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 22:47:28 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <h37gjvouv2o5kp47dgutm5fu92t5f69b20@4ax.com>
Source record: 110914

On Mon, 11 Aug 2003 18:15:49 -0400, "Peter Brackett"
<ab4bc@ix.netcom.com> wrote:

[snip]
>
>If passing the line through the wall is the problem then just use a foot or
>so of electrical mains "zip cord" for that short passage. Simply solder a
>short piece of zip cord into the 450 Ohm window line at the appropriate
>place to allow the line to pass through a small 1/4 - 1/2 inch hole in the
>wall. The "impedance bump" caused by the short hunk of zip cord will never
>be noticed throughout the MF/HF bands.

Yes, the impedance "bump" isn't a problem, but I would be concerned
about voltage breakdown. Most zip-cord is rated at a maximum of 600
VAC and it is quite possible to have voltages higher than that on a
transmission line.

Danny, K6MHE

2975. Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 23:28:21 UTC
From: Dwight Stewart <stewartx@earthlinkNOSPAM.net>
Message-ID: <BB5D9FB4.221CE%stewartx@earthlinkNOSPAM.net>
Source record: 110917
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

Where can I find an inexpensive, freestanding (or lightly guyed), antenna tower? It doesn't have to support a lot of weight - a couple of small 2m radio antennas and one or two scanner antennas. And it also doesn't have to be very tall - thirty to forty feet would be just fine. I'm sure others would be interested in this also.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net/

2976. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-11 23:44:50 UTC
From: Mike Coslo <mcoslo@adelphia.net>
Message-ID: <3F382AA7.6040501@adelphia.net>
Source record: 110819

Roger Halstead wrote:
> On Sat, 9 Aug 2003 22:38:19 -0400, "WB3FUP \(Mike Hall\)"
> <wb3fup@msn.com> wrote:
>
>
>>Yes they are. They are also probably protected during most of the year.
>>Here in Delaware the season on squirrel is in late September early October
>>if I recall correctly. Also in Delaware, do not know about other locales,
>>unless you are a farmer, living on a farm that provides a substantial
>>portion of your income it would get to be awfully expensive to shoot
>>squirrels, and get caught at it. There is an exception to most game laws
>>for farmers in the State - but thinking about it now it might just be an
>>exception from a license, not seasons.
>
>
> That's one of those "it all depends".
>
> Here in Michigan the farmer does not need to purchase a small game
> license to hunt on his own land. For deer, he does.
>
> If in the specific case of critters destroying crops as in major
> damage they can apply for permits to hunt them. Those permits are
> usually issued after a visit from the DNR (in some cases)
>
> Unfortunately coax doesn't count, but some department of Natural
> Resources (or what ever they are called in your neck of the woods)
> will help you live trap them for relocation.

Heh! As one of the veterns of the squirrel versus human wars, I tried the live trap route, and it doesn't work at all. You might catch one, but that's about it. Here in the squirrel capital of central PA, we have dozens of the little buggers. I had to seal up every opening in my house, and seal the corner molding on my vinyl siding. Brats would climb up there and munch a hole into the attic. Then they got in through the triple walled chimney. I found that by chance. So I had to put wire cloth on that. But wattya do about the ones who already got into the attic? I made an escape route by drilling a hole in the side of the house entering into the attic, and put a long narrow box over it so that would jump out when they got thirsty and hungry enough. We're at a standoff for the moment......

- Mike KB3EIA -

2977. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 00:04:27 UTC
From: Mike Coslo <mcoslo@adelphia.net>
Message-ID: <3F382F3F.2030607@adelphia.net>
Source record: 110820

Roger Halstead wrote:

>
> You want a thrill...I was landing my airplane (a 3100#, High
> performance/complex/retractable at the Gladwin Airport (GDW) one night
> when a big doe decided she wanted to be on the other side of the
> runway
>
> http://www.rogerhalstead.com/833pics.htm (bout 243K)

Thanks for the link, Roger. Great web pages!

- Mike KB3EIA -

2978. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 00:31:06 UTC
From: DOUGLAS SNOWDEN <snowden@peoplepc.com>
Message-ID: <vjgdabk99qu330@corp.supernews.com>
Source record: 110821

Thanks for the feedback - I am looking for advice on a safe method
to do this, if I should. I figure an aluminum tower will be easier to
raise, but of course at the same time aluminum will be weaker than steel.
The foldover system that Heights towers has is somewhat amazing to me. It
seems to me that there would be a huge amount of stress on the system.

Doug

Doug

"'Doc" <w5lz@cwis.net> wrote in message news:3F381A60.AD33E46A@cwis.net...
> Doug,
> Take a look at a few of the tower sites that show
> accessories. You don't have to buy from them, but you
> can copy their fixtures...
> 'Doc

2979. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 00:41:35 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308111641.68c8a6df@posting.google.com>
Source record: 110822

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<57jfjvcdmteplnjmj6sv5ett85lc0am1nk@4ax.com>...
> On 11 Aug 2003 09:54:47 -0700, k7itm@aol.com (Tom Bruhns) wrote:
>
> > In such a case, I'd work on a match to the antenna (or
> >the Cantenna or whatever) first--well, right after making sure the
> >meter was telling me the truth or something close to it.
>
> Hi Tom,
>
> This is kind of a chicken and egg problem.
>
> Calibrate the meter against the load.
>
> Calibrate the load against the meter.
>
> It would seem that discussion would eventually get around to bringing
> in a known and stable reference. The length of lossy line would
> suffice for a rough cut solution but still leaves a bench full of
> rather sloppy instruments.

This could be a whole 'nuther thread. For a reference, I don't have
any difficulty making a 50 ohm load with 40dB return loss out to a GHz
or so for less than $10, and most of that is the connector. Does
someone need to document how to do that? But I submit that if you
want accurate SWR measurements on a particular line, you should
calibrate your SWR meter to that line, and that doesn't take any
reference except the line itself.

Cheers,
Tom

2980. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 00:55:22 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <ZOedncuyOOxmp6WiXTWJhg@comcast.com>
Source record: 110823

Not claiming they don't exist, but I have never seen a raising fixture for other than a crankup tower. Bite the bullet and buy the stuff that is all supposed to work together. If you extrapolate from how they are set up, a raising fixture for a 60 foot non crankup tower would be about 30 feet high.

Tam/WB2TT
"DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
news:vje2dv9nrs1k4c@corp.supernews.com...
> I am still trying to decide what type of tower to buy for a house I will
be
> moving into. I would like something I can handle easily by myself, meaning
> either crankup or tiltover aluminum. I was thinking about maybe a Heights
> or Universal aluminum 50-60ft on a tiltover base, not the foldover base.
To
> save money I would like to fabricate some sort of steel post along the
side
> of the tower, with a pulley/winch arrangement. Not being an engineer, I
am
> looking for ideas on how high the pole shoule be - maybe as a ratio of the
> tower height and what would be a good safe diameter pipe. Am I looking
for
> trouble? Typical commercial foldover mechanisms are expensive. Should I
> just rent a cherry picker for the occasional times I would be tilting the
> tower over? As light as it would be that should be a solution.
>
>
> Doug
>
> N4IJ
>
>
>

2981. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 01:03:24 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh9ecs$4kk$1@hercules.btinternet.com>
Source record: 110824

> > Doc, tough little buggers, eh? I didn't realise squirrel meat needs
> > tenderising.
>
> It's not tough normally, especially if they were roadkills and have
> been out in the weather for a couple days.
>
In hot weather, do gourmets prefer to wait a few more days and enjoy the
maggots?

2982. Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 02:50:35 UTC
From: vhfradiobuff@aol.comspamme
Message-ID: <20030811225035.28762.00000197@mb-m26.aol.com>
Source record: 110825

I have an NMO magmount which has a bit of corrosion on the threads and the part where the antenna makes contact. The threads of the antenna also are a bit corroded. Can anyone recommend a good cleaner/method to remove this corrosion?
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
Beachwood, NJ USA! Grid FM29vw
http://vhfradiobuff.tripod.com
Fight Spam! http://spamcop.net
National "Do Not Call" Registry: http://donotcall.gov

2983. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 03:48:47 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bh9o2v$35t$1@sparta.btinternet.com>
Source record: 110826

"Jerry" wrote
> would you advise using a (4 to 1) balun with the open wire on one
> side, and a short run of coax, say 20 feet or so on the other to the
antenna
> tuner? Would this work well? Does one need to 'make' the open wire
feeder,
> or is the commercial stuff you buy ala ham coax suppliers good enough?

==========

To add a length of coax, balun or not, to the end of a long, beautiful, exceedingly low-loss, open-wire transmission line should be regarded as a criminal act worse than horse-stealing and be made a hanging matter.

The correct, most efficient arrangement is to connect the line direct to the tuner via a 1-to-1 current (choke) balun. The length of coax between tuner and transmitter can then be as long as is necessary to reach.

A great length of coax, a horrid lump of capacitance, on the antenna side of the tuner will also restrict its impedance matching range and possibly increase tuner losses.

A 1-to-1 choke balun is just a few (8 or 10) turns of twin speaker cable (18 or 20 gauge) wound on a ferrite ring, or more turns on a ferrite rod with a length of the same order as the ring's diameter.

The actual impedance of an open-wire line is of no consequence. It so happens when the wires are spaced apart 100 times wire diameter Zo is about 600 ohms. 18-gauge wires spaced 4 inches = 600 ohms.

14-gauge wire spaced 2 inches makes a nice line. At 30 MHz, loss = 0.15 dB per 100 feet. With SWR = 6, loss = 0.48 dB. When used as a 1/4-wave matching transformer, Q = 550.

The problem is flexing in the wind and metal fatigue. But amateurs don't need a feedline to last a lifetime - projects don't last that long. Very tedious to homebrew so most people seem to settle for 450-ohm ladder-line. Choose the heavier wire gauges. Don't bother with flimsy 300-ohm ribbon stuff.

Problems involved with extending lines into the shack, like Mark Twain's death, are much exaggerated. Insulate the wires and bring them close together through a single hole in a window frame or even a wall. A little extra capacitance due to close spacing over a length of a few inches is electrically entirely un-noticeable. You've only to look at it to realise that. Ignore gobble-de-gook about impedance bumps on lines intended to operate with high efficiency at high SWR.

If you like amusing yourself with numbers, to analyse performance of any HF dipole with any arrangement of twin-line + coax line + balun + tuner, download program DIPOLE3 from website below.
--
==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

2984. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 03:57:59 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <kx2dnQ_cUOta-KWiXTWJjA@comcast.com>
Source record: 110827
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Dwight Stewart" <stewartx@earthlinkNOSPAM.net> wrote in message
news:BB5D9FB4.221CE%stewartx@earthlinkNOSPAM.net...
>
>
> Where can I find an inexpensive, freestanding (or lightly guyed),
antenna
> tower? It doesn't have to support a lot of weight - a couple of small 2m
> radio antennas and one or two scanner antennas. And it also doesn't have
to
> be very tall - thirty to forty feet would be just fine. I'm sure others
> would be interested in this also.
>
>
> Dwight Stewart (W5NET)
>
> http://www.qsl.net/w5net/
>
If they still make it, the Rohn HBX series would be the least expensive.
(Notice, I didn't say cheap). It comes in 8 foot sections that bolt
together. The top section is the skinniest, about 6 in on a side, and
sections get progressivly larger towards the bottom. It is light enough that
one person could lift a 32 foot tower. Good for 10 sq. ft. of antenna. Self
supporting, if you mount it on a concrete base.

Another low end tower is the USTower MA40. This is a tubular crank up tower
with a hinged bottom. You either need their raising fixture (expensive) and
a concrete base, or support it at about 8 feet against a building. It comes
with the building support bracket; this method only requires a few bags of
concrete. Also rated at 10 sq. ft. of antenna.. With this tower the rotor
can not be mounted inside the tower, and you can not use a thrust bearing.

If you live in a fringe TV area that recently got cable, you should be able
to get a TV tower for free if you take it down. The ones I see in South
Jersey seem to be 40 - 50 feet.

Tam/WB2TT

2985. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 04:07:13 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <CDCdndk8epts-qWiXTWJgA@comcast.com>
Source record: 110828

Tom

He is trying to measure the output power of an amplifier. His meter is calibrated for 50 Ohms; so, he needs a 50 Ohm load.

Tam/WB2TT

2986. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 05:57:53 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <nvugjv8nj6fhcegrjfi204sqa9ufn485qa@4ax.com>
Source record: 110829

On 11 Aug 2003 14:36:32 -0700, radio913@aol.com (Dr. Slick) wrote:
>
> I've never seen an SWR meter for other than a 50 Ohm system, so
>i'm not quite sure what Tom means by all this. I certainly can't
>easily adjust the directionality of the couplers inside my Daiwa!
>
> It would be nice to have a reference 50 Ohm dummy load, especially
>a higher power one, that stayed close to 50 ohms even at higher
>frequencies. In the meantime, i'm gonna try the long RG-58 trick.
>
>
>Slick

It is a rather simple matter to perform and I am sure the Daiwa has adjustments (few instruments are calibrate for life at the factory). These are usually variable resistors (trimmers) for forward and reverse for each power setting. There are usually capacitors (trimmers) that adjust for directionality over frequency. They affect power readings, but should be left to the juggling of the inevitable errors (the art of accepting the least error from all sources). If the Daiwa lacks these, and you are serious about using it; then this requires you to make substitutions with existing components such that you force some variability into the game where there was previously none. This is not trivial, but neither does it require a PHD. One need only be mindful to dimensions as they relate to wavelength and issues of stray coupling (proximity) which, of course, means lead length; component composition, and package bulk.

You simply approach the problem as calibrating TWO power meters into a known load (the 50 Ohms, regardless of how that is accomplished). All it takes to do the reverse power is to simply invert the connections. This also confirms the balance. Driving into a known load will always evidence a zero return power regardless of direction of connectors. This is not always borne out in nature or over the various power ranges, and frequently calibration is the art of accepting the least error across all used settings. Calibration is often performed through many iterations as the trimmers sometimes present interaction. If you expect to work in one power range at one frequency, you can optimize your errors.

As for the calibration of absolute power (rather than what would be described above as relative power). That is the provence of the Metrologist and the well heeled amateur. Appeals to having been confirmed against a Bird Wattmeter is common (and a rather comfortable illusion). It will suffice if you can tolerate 10-15% error (barring

a recent trip to the Metrologist's bench with the return of the necessary certificate and actual measurements). "Any" Bird is no more accurate than 20% with hope and wishes - especially when bench practices include poor loading and poor source Z control.

73's
Richard Clark, KB7QHC

2987. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 05:59:17 UTC
From: Owen Duffy <owen@oda.com.au>
Message-ID: <3F388235.3010006@oda.com.au>
Source record: 110830

Reg Edwards wrote:
> Way back in the 1970's I visited the National Physical Laboratory (NPL) at
> Teddington, West London.
>
> I was priviledged to see, but not to touch, the National Standards of the
> Ohm and of the Volt. There were a number of 4-terminal resistors submerged
> in a temperature-controlled oil bath. There was about a dozen Western Cells

Is that something like a Weston Cell?

On a serious note, don't overlook refrigeration oils, they are high quality, light, dry oils for immersed motor windings, and available in smaller sealed tins (around 5 litres).

Owen

2988. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 07:50:11 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308112350.55e2b608@posting.google.com>
Source record: 110831

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f37e8e0$1_4@corp.newsgroups.com>...
> Jimmy wrote:
> > I hope this is a wifes tale that has long been discredited. Trimming cable
> > changes the impedance seen by the transmitter with no change to SWR.
>
> However, a 50 ohm SWR meter reading will change as one changes the
> length of the ladder-line. When the 50 ohm SWR meter reads 1:1,
> the transmitter is seeing 50 ohms. That's how I tune my dipole.

This is very interesting, as it may indicate that the "wife's
tale" may have some validity in _some_ cases.

For example, if your antenna happens to have an impedance of say,
60 Ohms, and your transmission line happens to NOT be a perfect 50
Ohms (usually the case), and happens to be around 54.8 Ohms or so...
then at odd integer multiples of 1/4 wavelength (velocity factor
included, of course), you will be right on 50 Ohms.

Additionally, as we have mentioned before, PAs rarely have 50 Ohm
output impedances anyways (who actually measures this??). So an
impedance transform via perfect 50 ohm coax length may indeed get you
closer to a conjugate match and higher incident power, which may
improve your VSWR (which is based upon the incident and reflected, of
course).

Slick

2989. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 07:50:26 UTC
From: michael Collins <michael.collins920@ntlworld.com>
Message-ID: <no1_a.249$zC4.234@newsfep1-gui.server.ntli.net>
Source record: 110834

Note on Message below.
BPL is old Tech, I was playing with it 25 years ago.
Ham Radio is not a technology its a service.

"Keith" <kilowattradio_spam@earthlink.net> wrote in message
news:bghofs011vu@enews2.newsguy.com...
> On 1 Aug 2003 21:50:25 -0700, robkemp90210@hotmail.com (Rob Kemp) wrote:
>
> > Critical everyone submits a reply comment ASAP.
>
> You might as well as piss into a hurricane force wind. BPL will happen
and ham
> radio will go the way of the dinosaurs. America can't let a few thousand
morse
> code fanatics stop modern technology for millions of consumers. If there
were 2
> or 3 million active ham radio operators then that might make a difference,
but
> for decades the ARRL has done everything to keep people out of the HF
bands by
> forcing the stupid morse code requirements down the throats of the average
> consumer that has no interest in morse code.
> The morse code fanatics among ham radio operators dug their own grave and
have
> no on else to blame. BPL is progress for America, ham radio is the old
> technology.
>
>
> --
> The Radio Page Ham, Police Scanner, Shortwave and more.
> http://www.kilowatt-radio.org/
> ..it does not require a majority to prevail, but rather an
> irate, tireless minority to set brush fires in people's
> minds. --Samuel Adams

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.509 / Virus Database: 306 - Release Date: 12/08/2003

2990. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 08:05:20 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308120005.47844e96@posting.google.com>
Source record: 110832

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308111241.3e87fff1@posting.google.com>...
> >
> > I'm not sure i agree with your statement as you have written it.
> >
> > The power would remain the same only if the load and the line
> > were perfect 50 Ohms and also lossless, then the length of the coax
> > should not matter at all.
>
> It's true that if the load and line are the same impedance (e.g. 50
> ohms), no matter what the line length is, you'll present that
> impedance (e.g. 50 ohms) to the source and it will deliver constant
> power, independent of line length. If the line is lossless, then the
> power delivered to the load will be independent of line length. Fine.
> But your OP suggested that the load is NOT the same as the line
> impedance (indicated SWR not 1:1), so another case is perhaps equally
> or even more interesting.
>
> If you require that the source impedance match the line impedance (and
> because the line is lossless, it's impedance must be purely
> resistive), then the net power delivered to the line for a given SWR
> on the line is invariant with changes in line length (changes in
> reflection coefficient angle in the load presented at the source).
> (Straightforward though perhaps tedious to prove, or just convince
> yourself with some examples.) Since the line is lossless, the power
> to the load is invariant. That's the scenario I suggested above.
>

You're right about this, and it reminds us that if there is any
loss at all, we theoritically move away from a purely resistive
characteristic impedance into a complex one. This furthers the
complexity on the problem, as we must expect reactance in our coax.

We'll have to wait for the room temperature super-conductor that
is also flexible to come closer to the ideal 50 Ohm test setup!

> So with a lossless line, and EITHER the load OR the source matched to
> the line impedance, the power delivered to the load will be invariant
> with line length.
>

Agreed, as the impedance will not move on the Smith chart.

Slick

2991. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 08:10:06 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308120010.6f0828fe@posting.google.com>
Source record: 110833

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308111641.68c8a6df@posting.google.com>...
>
> This could be a whole 'nuther thread. For a reference, I don't have
> any difficulty making a 50 ohm load with 40dB return loss out to a GHz
> or so for less than $10, and most of that is the connector. Does
> someone need to document how to do that? But I submit that if you
> want accurate SWR measurements on a particular line, you should
> calibrate your SWR meter to that line, and that doesn't take any
> reference except the line itself.
>
> Cheers,
> Tom

But can you make a 50 Ohm dummy load with those specs that can
handle
300 Watts? The stays at 50 Ohms out to at least 200 Megs or so?

And i'm still not sure what you mean by "calibrate your SWR meter
to the line". All the SWR meters i have seen are all for 50 Ohms.

Could you tell us the exact procedure?

Slick

2992. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 09:48:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjhe05h0po7fc@corp.supernews.com>
Source record: 110835

Almost correct.

The transmitter output impedance has no effect whatsoever on the line's SWR.

Roy Lewallen, W7EL

Dr. Slick wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f37e8e0$1_4@corp.newsgroups.com>...
>
>>Jimmy wrote:
>>
>>>I hope this is a wifes tale that has long been discredited. Trimming cable
>>>changes the impedance seen by the transmitter with no change to SWR.
>>
>>However, a 50 ohm SWR meter reading will change as one changes the
>>length of the ladder-line. When the 50 ohm SWR meter reads 1:1,
>>the transmitter is seeing 50 ohms. That's how I tune my dipole.
>
>
>
> This is very interesting, as it may indicate that the "wife's
> tale" may have some validity in _some_ cases.
>
> For example, if your antenna happens to have an impedance of say,
> 60 Ohms, and your transmission line happens to NOT be a perfect 50
> Ohms (usually the case), and happens to be around 54.8 Ohms or so...
> then at odd integer multiples of 1/4 wavelength (velocity factor
> included, of course), you will be right on 50 Ohms.
>
> Additionally, as we have mentioned before, PAs rarely have 50 Ohm
> output impedances anyways (who actually measures this??). So an
> impedance transform via perfect 50 ohm coax length may indeed get you
> closer to a conjugate match and higher incident power, which may
> improve your VSWR (which is based upon the incident and reflected, of
> course).
>
>
> Slick

2993. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 10:28:03 UTC
From: "M. J. Powell" <mike@pickmere.demon.co.uk>
Message-ID: <nrL+RtNzEMO$EwyW@pickmere.demon.co.uk>
Source record: 110836
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

In message <BB5D9FB4.221CE%stewartx@earthlinkNOSPAM.net>, Dwight Stewart <stewartx@earthlinkNOSPAM.net> writes
>
>
> Where can I find an inexpensive, freestanding (or lightly guyed), antenna
>tower? It doesn't have to support a lot of weight - a couple of small 2m
>radio antennas and one or two scanner antennas. And it also doesn't have to
>be very tall - thirty to forty feet would be just fine. I'm sure others
>would be interested in this also.

I have a 25 ft pole made of plasticised paper, in 4 sections, with brass inserts at each end. Ex-army. I paid 5 GBP (nearly a week's pay) for it in 1953!

I used it guyed with light plastic line. It supported a 10 ele 2m beam for several years.

Mike
--
M.J.Powell

2994. Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 11:23:27 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030812072327.18087.00001318@mb-m15.aol.com>
Source record: 110837

Question to Roy,
can EZNEC model loading coils in loaded antennas, like mobile whips including the physical properties of the coil?
I just had some exchange with W8JI on eHam.net
http://www.eham.net/articles/5998
where he is ignoring the fact that loading coil is part of the radiator and its physical properties, where length to diameter ratio have impact on the current distribution in the coil.
He is claiming that modeling programs confirm his statement that the current is the same at the both ends of the loading coil (close in short coils) . I am having hard time to see how the modeling program is capturing physical properties of the coil besides inductance, Q etc.
W9UCW has done considerable amount of work on the subject and has measured that the current diminishes in the loading coil away from the feedpoint.

Thanks!

Yuri, K3BU

2995. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 13:08:16 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <esWdnZRa8s1Ye6WiXTWJjg@comcast.com>
Source record: 110838

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bh9o2v$35t$1@sparta.btinternet.com...
>
> Problems involved with extending lines into the shack, like Mark Twain's
> death, are much exaggerated. Insulate the wires and bring them close
> together through a single hole in a window frame or even a wall. >
==========
>
>
>
Why not drill two very small holes with the same spacing as the feedline?
Then splice on the inside.

Tam/WB2TT

2996. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 13:22:46 UTC
From: derswede@aol.comspam.com
Message-ID: <20030812092246.05187.00000689@mb-m01.aol.com>
Source record: 110839
Body handling: HTML body converted to readable text

<>

Ouch....I've hit birds before (biggest...an owl...collapsed the leading edge on the Luscombe) but a friend, landing on a private lighted strip one evening, managed to turn 10 Black Angus cows into steak and hamburger. The owner forgot to clear the field when he turned on the landing strip lights. The pilot and passenger walked away, but the Beechcraft Bonanza (cousin to Roger's Debonair) was totalled. Barbara, the pilot, said she didn't suspect a thing until touchdown and one cow turned towards the approaching airplane. "Shining eyes" is all she saw. Think she's vegetarian today!!! (joke)

As for the coax, I've use the sour apple stuff...local squirrels apparently don't like it, and wander off to greener pastures. 'Course, when all else fails, a .22 and some CB shells take care of the rest. Thank goodness for living in the South and not living in a city.

A

2997. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 15:30:26 UTC
From: wb4una@aol.com
Message-ID: <20030812113026.04816.00001843@mb-m26.aol.com>
Source record: 110840

I guess that it could be a big problem..I live out in the country and i feed the little guys all the time and have never had problems with them..I keep corn in trays and spread out on the ground for them and have never had problems with them eating coax...yes before you say "wait itll you stop feeding them"..I have and have no bad things come of it..I have around 10 of them in the yard ever morning and afternoon....
oh well just a thought..Give them something else to eat....sounds like they may be hungry or they are lookingh for stuff to build nest....

Randy

ARS: WB4UNA
Randy Chavis
247 Goff Court
West Columbia
S.C. 29172

2998. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 15:31:44 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308120731.5ecb33c@posting.google.com>
Source record: 110841

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bh9ecs$4kk$1@hercules.btinternet.com>...
> > > Doc, tough little buggers, eh? I didn't realise squirrel meat needs
> > > tenderising.
> >
> > It's not tough normally, especially if they were roadkills and have
> > been out in the weather for a couple days.
> >
> In hot weather, do gourmets prefer to wait a few more days and enjoy the
> maggots?

Can't say in any detail Reg, I'm no expert on the various culinary
secrets required to cobble together a decent "Roadkill stew". That
expertise is found mostly in the W4 and W5 parts of the U.S. Cecil
should know.

w3rv

2999. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 15:36:08 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308120736.7a276c14@posting.google.com>
Source record: 110842

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308120010.6f0828fe@posting.google.com>...
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308111641.68c8a6df@posting.google.com>...
> >
> > This could be a whole 'nuther thread. For a reference, I don't have
> > any difficulty making a 50 ohm load with 40dB return loss out to a GHz
> > or so for less than $10, and most of that is the connector. Does
> > someone need to document how to do that? But I submit that if you
> > want accurate SWR measurements on a particular line, you should
> > calibrate your SWR meter to that line, and that doesn't take any
> > reference except the line itself.
> >
> > Cheers,
> > Tom
>
>
> But can you make a 50 Ohm dummy load with those specs that can
> handle
> 300 Watts? The stays at 50 Ohms out to at least 200 Megs or so?
>

50 +/- what? What return loss are you shooting for in this 300W dummy load? Do you really need 40dB, or is 30dB good enough? I believe it's possible to bootstrap yourself into measurements that are far more accurate than you'll need for what you are doing, and do it quite economically if you don't count your time. But you ought to first ask yourself just what accuracy you really need, and understand why.

Probably one can make a quite reasonable broadband power load, at least to your 200MHz limit. There have been some good construction articles on making tapered shields for power load resistors, for example, to get good high frequency performance. But if you can make just a good low-power one, you can bootstrap your way to accurate measurements at high power. Use the low power one to insure your directional coupler is good to some tolerance, and use that to tune your load at whatever frequency you wish to check. Even your cantenna should be low enough Q when tuned with an L network that it would be acceptable over the whole of the 2-meter ham band. It's tedious, but you can re-tune for any spot frequency inside or outside the ham band. And given one accurate load, you can determine what impedance your long, lossy coax is and then use that as a dummy load (probably quite broadband). For example, if your cantenna is good enough through 30MHz, and pretty good at 54MHz, and under 2:1 SWR at 150MHz, then perhaps enough RG-58 to give you 10dB loss at 150MHz (150 feet or so),

feeding that cantenna, would work fine from 1MHz to 1GHz. Just beware of power dissipation in the line itself at higher frequencies. You can even cascade large coax, small coax and the cantenna, to insure power handling.

Beware of harmonics messing up your readings!

Also, you'd probably do well to consider how small a change in power results from a modest load change, for various source impedances. What's the worst case? What's the best? Is there a reason it might be nice if an amplifier output was "reasonably close" to 50 ohms, or doesn't it matter at all? If you think all this through, you may realize that if your dummy load is even only 20dB return loss, it will be just fine for the measurements you need to make. But YOU should convince YOURSELF of that, or of what you really do need.

> And i'm still not sure what you mean by "calibrate your SWR meter
> to the line". All the SWR meters i have seen are all for 50 Ohms.
>
> Could you tell us the exact procedure?

Of course not; I know nothing about YOUR SWR meter. If you understand how yours works, you should be able to see how to adjust it, though it may not be worthwhile. To a close approximation, practically all of them work by sampling the line current and voltage at a point. The current is somehow turned into a voltage, and if you adjust either the voltage sampling percentage or the voltage produced by a given current, you will have adjusted the calibration impedance. At the high frequency end, you may need to worry about reactive or phase-shift effects. If it's not adjustable, don't you at least want to know WHAT impedance it's calibrated for? Or at VERY least, what it reads with a 50 ohm load?

Cheers,
Tom

3000. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 16:08:08 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308120808.6b21deeb@posting.google.com>
Source record: 110843

"DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
news:<vje2dv9nrs1k4c@corp.supernews.com>...
> I am still trying to decide what type of tower to buy for a house I will be
> moving into. I would like something I can handle easily by myself, meaning
> either crankup or tiltover aluminum. I was thinking about maybe a Heights
> or Universal aluminum 50-60ft on a tiltover base, not the foldover base. To
> save money I would like to fabricate some sort of steel post along the side
> of the tower, with a pulley/winch arrangement. Not being an engineer, I am
> looking for ideas on how high the pole shoule be - maybe as a ratio of the
> tower height and what would be a good safe diameter pipe. Am I looking for
> trouble? Typical commercial foldover mechanisms are expensive. Should I
> just rent a cherry picker for the occasional times I would be tilting the
> tower over? As light as it would be that should be a solution.

Engineering a tower installation is not rocket science but only for
for those educated and experienced in the field of structural analyses
and design. Towers "engineered" by those who don't have appropriate
backgrounds are potential deathtraps.

Don't raise a full-height tower via a pole, cherry picker or sign
crane unless you have a grip on all the reaction forces & streses on
the structure based on the location of the lift point.

Select a catalog tower and stick 100% to the manufaucturer's
installation and operation directions. It'll cost more but you'll
sleep better.

> Doug
>
> N4IJ

w3rv

3001. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 16:57:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vji739lhs34607@corp.supernews.com>
Source record: 110844

It's not practical, and often not possible (due to inability to model proximity effect), to model a loading coil on a turn-by-turn basis. Where a loading coil is physically long enough to have a current gradient across it, I've always believed it's adequate to model it as a wire whose outer diameter is the same as the outer diameter of the coil. Usually, a single lumped inductive/resistive "load" placed in the center of that wire is adequate, although if the coil is particularly long, you might want to split the load into several equal pieces distributed along the fat wire.

This approach assumes that the current gradient across a coil is the same as for a wire of the same outside diameter as the coil. I don't, however, have any measured data to confirm this. It would be a fairly simple matter to put toroidal current transformers just above and below a coil and compare their values to what EZNEC or other programs report. If anyone has done this or is interested in doing it, I'd love to see the result along with a detailed description of the methodology.

Roy Lewallen, W7EL

Yuri Blanarovich wrote:
> Question to Roy,
> can EZNEC model loading coils in loaded antennas, like mobile whips including
> the physical properties of the coil?
> I just had some exchange with W8JI on eHam.net
> http://www.eham.net/articles/5998
> where he is ignoring the fact that loading coil is part of the radiator and its
> physical properties, where length to diameter ratio have impact on the current
> distribution in the coil.
> He is claiming that modeling programs confirm his statement that the current is
> the same at the both ends of the loading coil (close in short coils) . I am
> having hard time to see how the modeling program is capturing physical
> properties of the coil besides inductance, Q etc.
> W9UCW has done considerable amount of work on the subject and has measured that
> the current diminishes in the loading coil away from the feedpoint.
>
> Thanks!
>
> Yuri, K3BU

3002. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 17:41:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b44ijvsea7ucp6tnb6ipqgk3f2uq6blquk@4ax.com>
Source record: 110845

On Tue, 12 Aug 2003 02:48:49 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Almost correct.
>
>The transmitter output impedance has no effect whatsoever on the line's SWR.
>
>Roy Lewallen, W7EL
>

Hi Roy,

Entirely incorrect.

Transmitter output impedance that does not conform to transmission
line Z, when presented with a mismatched load through that line, adds
mismatch uncertainty in the form of an indeterminate SWR and
indeterminate Power to the load.

This has already been demonstrated twice. This has long been
documented with NBS/NIST references going back 4 decades. There is
nothing mysterious about it at all, and it conforms to the rather
simple principles of wave interference so poorly presented by Cecil in
months past.

The authoritative site:
http://www.boulder.nist.gov/div813/index.html

Direct reference:
"Juroshek, J. R.; A Direct Calibration Method for Measuring
Equivalent Source Mismatch; Microwave J., pp. 106-118;
October 1997

Obscure references:
http://www.boulder.nist.gov/div813/rfelec/device/Publications/MetrologyPublications/ARFTG0
0S_n2nNet.pdf
"With vector measurements of the generator and meter reflection
coefficients ï¿½g and ï¿½m, respectively, the power of the incident
signal am can be related to the power of the source."

http://www.boulder.nist.gov/div813/rfelec/noise/publications/00_NFRad_ARFTG.pdf
which describes radiometer calibration (perhaps too exotic for this
group)
"tests are based on two assumptions. First, the network responds
linearly to our signal (no power compression), and second, the
radiometer is sufficiently isolated from the source impedance."
...

"One of the assumptions made in deriving eq. (2) was that the output from the radiometer is not dependent on the source impedance. In the construction of the radiometer, two isolators are inserted at the input of the radiometer to isolate the radiometer from the source."
...
"The mismatch uncertainty depends strongly on the poorly known correlation between uncertainties in the measurements of different reflection coefficients, and so we use the maximum of the uncertainties obtained by assuming either complete correlation or no correlation whatsoever."

"Forthcoming Paper: Influence of Impedance Mismatch Effects on Measurements of Unloaded Q Factors of Transmission Mode Dielectric Resonators"
IEEE Transaction on Applied Superconductivity

"Analysis of Interconnection Network and Mismatch in the Nose-to-Nose Calibration
Automatic RF Techniques Group , June 15-16, 2000 , Boston, MA - June 01, 2000
"We analyze the input networks of the samplers used in the nose-to-nose calibration method. Our model demonstrates that the required input network conditions are satisfied in this method and shows the interconnection errors are limited to measurement uncertainties of input reflection coefficients and adapter S-parameters utilized during the calibration procedure. Further, the input network model fully includes the effects of mismatch reflections, and we use the model to reconcile nose-to-nose waveform correction methods with traditional signal power measurement techniques."

As I mentioned, obscure references. However, given the impetus of their discussion is long known (and that I have already provided the original references they rely on), NIST presumes the investigators already have that basis of knowledge.

73's
Richard Clark, KB7QHC

3003. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 17:48:41 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kp9ijvkmcelthto8g95g1c532h3qvbv9uv@4ax.com>
Source record: 110846

On 12 Aug 2003 11:23:27 GMT, k3bu@aol.comnoSaddam (Yuri Blanarovich)
wrote:

>Question to Roy,
>can EZNEC model loading coils in loaded antennas, like mobile whips including
>the physical properties of the coil?
>I just had some exchange with W8JI on eHam.net
>http://www.eham.net/articles/5998
>where he is ignoring the fact that loading coil is part of the radiator and its
>physical properties, where length to diameter ratio have impact on the current
>distribution in the coil.
>He is claiming that modeling programs confirm his statement that the current is
>the same at the both ends of the loading coil (close in short coils) . I am
>having hard time to see how the modeling program is capturing physical
>properties of the coil besides inductance, Q etc.
>W9UCW has done considerable amount of work on the subject and has measured that
>the current diminishes in the loading coil away from the feedpoint.
>
>Thanks!
>
>Yuri, K3BU

Hi Yuri,

When I open the load dialog window, it presents R in some form or
another (the answer to your Q provision). Are you concerned the
program will treat the load as an infinitesimally small object? If it
does, you could decimate the coil inductance and distribute it across
10 segments whose span is equivalent to your anticipated physical
length. Perhaps a lot of trouble (and perhaps there's another, better
way), but it seems to be the price of your query.

73's
Richard Clark, KB7QHC

3004. Re: Electronically tuned Helix

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 17:54:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <j4aijvk8uq9md1obe97ngq6o1phm26n5ni@4ax.com>
Source record: 110847

On 11 Aug 2003 13:07:12 -0700, whru@msn.com (Fred) wrote:

>A few years back I read a paper which described an electronically
>tuned HF Helical antenna. It was a shunt fed Helical monopole which
>employed electronically switched PIN diodes to add or subtract helix
>turns. As far as I remember a 6ft helix antenna was resonant between 4
>to 30 MHZ by switching the PIN diodes. Diameter = 19", 20 turns, Q<50,
>average power = 400W.
>Now the question to the antenna experts: was such an antenna ever
>developed and manufactured. If yes, who did.
>Thanks es 73
>Fred
>wb6iiq / dh1nwr

Hi Fred,

Seems unlikely. PIN diodes (or any diode for that matter) would have
a very difficult time switching 300W voltage potentials far in excess
of the diode's own intrinsic boundary potential. PIN diode switching
is most often employed in receive circuits where the signal level is
considerably smaller than the switching potential. Then, on the other
hand, they may have huge power sources capable of blocking the RF
potential swing anticipated at the node the PIN diode serves (talk
about cost!).

73's
Richard Clark, KB7QHC

3005. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 18:02:19 UTC
From: jder8745@aol.com
Message-ID: <20030812140219.13468.00000344@mb-m27.aol.com>
Source record: 110848

He sed:

"The transmitter output impedance has no effect whatsoever on the line's SWR."

THIS IS ABSOLUTELY CORRECT!

73 Jack

3006. Horizontal J type (G2BCX Slim Jim for those who remember)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 18:21:37 UTC
From: Savage <look@this.con>
Message-ID: <1060712400.52255.0@damia.uk.clara.net>
Source record: 110849

Back in the early 80's when I gained my class B, I built myself a 2 metre slim jim out of 3 mm wire, shoved it inside a piece of pvc wastepipe, and it worked a treat. I could hang it almost anywhere with a loop or a hook, lean it against a wall or a tree. I even used it on a bicycle with an FT290R as a /M once - but I was much younger then

Later, I built an 11 metre version from 8mm copper microbore for a friend. It worked very well with an swr of 1.5 or less on the mid band and no greater than 2.6 or so at the extremes of the 5 'bands'.

I've been thinking (always a silly thing for me to do) and I've pencilled a design for a 20 metres wire version on my computer desk and it seems to have everything I need - specifically the feed point can be very close to the shack, it doesn't need buried counterpoises or an rf earth and I can rig it "hammock style" with cord through a couple of cheap eyebolts and pulleys without climbing. My math needs refining, and I've no idea what the bandwidth would be, but it shouldn't be difficult to make one from 1.5 or 3mm copper wire or braid, or perhaps 4mm aluminum wire and 1" pvc waterpipe spacers and fire it up.

Or perhaps not. There could be good reasons why I've never heard of a 20m Slim Jim, and if it was any good, why isn't everybody using one? If I've invented something new, it's mine I tell you.... Oooh, I feel better now

Has anybody tried using a Slim Jim horizontally on HF other than on 10M?

de G6XCD

3007. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 18:31:02 UTC
From: Marylou127@city.net
Message-ID: <3F393266.B413CE85@city.net>
Source record: 110850

I used steel wool and WD-40. It really works great.

VHFRadioBuff wrote:
>
> I have an NMO magmount which has a bit of corrosion on the threads and the part
> where the antenna makes contact. The threads of the antenna also are a bit
> corroded. Can anyone recommend a good cleaner/method to remove this corrosion?
> =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
> 73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
> Beachwood, NJ USA! Grid FM29vw
> http://vhfradiobuff.tripod.com
> Fight Spam! http://spamcop.net
> National "Do Not Call" Registry: http://donotcall.gov

3008. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 18:47:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qacijvoci4cmt4fbmuj75lpsj21nnfiq72@4ax.com>
Source record: 110851

On 12 Aug 2003 18:02:19 GMT, jder8745@aol.com (JDer8745) wrote:

>He sed:
>
>"The transmitter output impedance has no effect whatsoever on the line's SWR."
>
>---------
>
>THIS IS ABSOLUTELY CORRECT!
>
>73 Jack

Hi Jack,

Hmm, the world of accurate measurement must be wrong then. :-)

It is correct that into a matched load, it makes little difference - that is not the subject at hand, and as I have said, it has already been demonstrated twice.

To this point I have seen no counter demonstrations, nor counter proposals, nor counter argument (no, Jack, yours is not an argument), nor conflicting bench data. What I have seen are sweeping statements without any supporting evidence. Given the amateur preference for the snuggly comfort of illusion, I suppose none of this will change. Not that I care, it does provide me entertainment (right now in fact) when astonished correspondents post their plight and are offered responses of nostrums and head-bobbing. I would offer that it is a joke that never grows tired - simply because so few would recognize they had a problem in the first place. In fact, this second demonstration arose through the naive investigation of a non-amateur. Too many amateurs consider themselves above such bench activity and too sophisticated to trod that path.

The flip side of the argument (and why it is so painfully ignored) is that reveals that most rigs DO exhibit a Z of nearly 50 Ohms such that this is rarely a problem. It also reveals a shortfall of bench experience in amateur construction. There was a time when many more suffered this because they built their own transmitter instead of passing a credit card across the display case to a sales clerk.

73's
Richard Clark, KB7QHC

3009. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 19:13:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f393db2_8@corp.newsgroups.com>
Source record: 110852

Richard Clark wrote:
> To this point I have seen no counter demonstrations, nor counter
> proposals, nor counter argument ...

Not unusual since your above deadline for counter demonstrations,
counter proposals, and counter arguments was 66 minutes from the
time you made the original posting. :-)

You are in a room with a 150 ohm (lossless) transmission line coming
through a hole in the wall and with a 50+j0 ohm load in the center of
the room. Are you telling us that the SWR is not (1+|rho|)/(1-|rho|)?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3010. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 19:28:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <oqfijv4d1l1cojke9dmjcb6g83stqsjbfj@4ax.com>
Source record: 110853

On Tue, 12 Aug 2003 14:13:44 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> To this point I have seen no counter demonstrations, nor counter
>> proposals, nor counter argument ...
>
>Not unusual since your above deadline for counter demonstrations,
>counter proposals, and counter arguments was 66 minutes from the
>time you made the original posting. :-)

Hi Cecil,

I see you still live in a dimensional aberration where you experience
22 days as 66 minutes. You must be oxygen starved by now.

73's
Richard Clark, KB7QHC

3011. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 20:07:34 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308121207.19a465b3@posting.google.com>
Source record: 110855

Why not seperate the inductance into
four separate loads over a length that equals one load?

ik3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030812072327.18087.00001318@mb-m15.aol.com>...
> Question to Roy,
> can EZNEC model loading coils in loaded antennas, like mobile whips including
> the physical properties of the coil?
> I just had some exchange with W8JI on eHam.net
> http://www.eham.net/articles/5998
> where he is ignoring the fact that loading coil is part of the radiator and its
> physical properties, where length to diameter ratio have impact on the current
> distribution in the coil.
> He is claiming that modeling programs confirm his statement that the current is
> the same at the both ends of the loading coil (close in short coils) . I am
> having hard time to see how the modeling program is capturing physical
> properties of the coil besides inductance, Q etc.
> W9UCW has done considerable amount of work on the subject and has measured that
> the current diminishes in the loading coil away from the feedpoint.
>
> Thanks!
>
> Yuri, K3BU

3012. Re: CD45 installation

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 20:17:10 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <JJqcnVrcarLV1qSiXTWJjQ@comcast.com>
Source record: 110856

Yaesu puts a chart in their G1000 manual that spells this out. Don't remember the exact numbers, but with the antenna 8 feet above the rotator I think you were limited to something like 1/10 the normal specification. I wouldn't go more than a foot above the rotator.

Tam/WB2TT
"Javier Henderson" <javier@KJSL.COM> wrote in message news:86lltypwr5.fsf@skylane.kjsl.com...
> I sent this question to Hy Gain, but I thought I'd present it to the
> conglomerate of experts here...
>
> The Hy Gain CD45 rotor (rotator, whatever) is rated for 5 sq ft wing
> loading if it's mounted on a mast.
>
> The question is, how long can the antenna mast be?
>
> I just got an MQ26 "mini quad", which has a rated wind loading of 1.6 sq ft,
> and I need the mast between the antenna and the rotor to be about 6-7 feet.
>
> Is this gonna work?
>
> -jav

3013. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 20:20:57 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <B_b_a.89169$cF.27552@rwcrnsc53>
Source record: 110857

Bird feeders!!!

I set up some 'squirrel feeders' in the yard but the birds eat the seeds!!!

Deacon Dave, W1MCE

Rick wrote:
> I have the same problem with my bird feeders,

3014. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 20:30:02 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030812163002.07529.00001233@mb-m14.aol.com>
Source record: 110858

>
>This approach assumes that the current gradient across a coil is the
>same as for a wire of the same outside diameter as the coil. I don't,
>however, have any measured data to confirm this. It would be a fairly
>simple matter to put toroidal current transformers just above and below
>a coil and compare their values to what EZNEC or other programs report.
>If anyone has done this or is interested in doing it, I'd love to see
>the result along with a detailed description of the methodology.
>
>Roy Lewallen, W7EL
>

Barry, W9UCW has done extensive measurements using termocuples and other methods minimizing disturbance to measured system. He found that current in (esp. longer) coils is diminishing towards the other end.
If you read the thread and some more velleyball on Topband reflector last month, there is more info.

Yuri, K3BU

3015. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 20:50:20 UTC
From: Sylvan Butler <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbjikoc.f8.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 110860

On Sun, 10 Aug 2003 18:39:47 -0500, Dan/W4NTI <w4nti@NOSPAMmindspring.com> wrote:
> No Ed Senior I am not kidding. If your stray dog comes on my property and
> chews up my yard, kills my cat, and attacks the neighborhood kid...Ill
> shoot the SOB. IF I could get away with it in this populated area I would
> have used te shotgun.

That's the way it works in my neighborhood. That's the law out
here, thank goodness.

sdb
n7owl
--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral
busybodies. The robber baron's cruelty may sometimes sleep, his
cupidity may at some point be satiated; but those who torment us for our
own good will torment us without end, for they do so with the approval
of their consciences. -- C. S. Lewis

3016. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 20:58:54 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308121258.6542d72e@posting.google.com>
Source record: 110859

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjhe05h0po7fc@corp.supernews.com>...
> Almost correct.
>
> The transmitter output impedance has no effect whatsoever on the line's SWR.
>
> Roy Lewallen, W7EL
>

My point is that if the output impedance really was at a perfect
50 Ohms, then using a perfect 50 ohms transmission line, you can never
match to anything other than 50 ohms.

If the S22 is something other than 50 Ohms (usual case), then a
transformation via 50 ohm coax about a constant VSWR is possible, for
the purposes of matching to a not-quite-perfectly-50 ohms antenna.

Slick

3017. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:03:36 UTC
From: Sylvan Butler <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbjilh8.f8.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 110863

On Sat, 09 Aug 2003 16:23:10 GMT, Stuart <srumley@sbcglobal.net> wrote:
> The squirrels here the my neighborhood have suddenly decided they like to
> eat my coax and control cables. They seem to be particularly attracted to
> the self-vulcanizing rubber used to seal the connections but they have eaten
> some coax cables as well. Anyone know of a cure for this problem?

I wonder if you could put a few lines out with several hundred volts
relative to ground...

sdb

--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral
busybodies. The robber baron's cruelty may sometimes sleep, his
cupidity may at some point be satiated; but those who torment us for our
own good will torment us without end, for they do so with the approval
of their consciences. -- C. S. Lewis

3018. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:03:40 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjilhjraett3f@corp.supernews.com>
Source record: 110861

That's what EZNEC would predict, modeled as I suggested.

Roy Lewallen, W7EL

Yuri Blanarovich wrote:
>>This approach assumes that the current gradient across a coil is the
>>same as for a wire of the same outside diameter as the coil. I don't,
>>however, have any measured data to confirm this. It would be a fairly
>>simple matter to put toroidal current transformers just above and below
>>a coil and compare their values to what EZNEC or other programs report.
>>If anyone has done this or is interested in doing it, I'd love to see
>>the result along with a detailed description of the methodology.
>>
>>Roy Lewallen, W7EL
>>
>
>
> Barry, W9UCW has done extensive measurements using termocuples and other
> methods minimizing disturbance to measured system. He found that current in
> (esp. longer) coils is diminishing towards the other end.
> If you read the thread and some more velleyball on Topband reflector last
> month, there is more info.
>
> Yuri, K3BU

3019. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:06:10 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308121306.3958186f@posting.google.com>
Source record: 110862

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308120736.7a276c14@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308120010.6f0828fe@posting.google.com>...
> >
> > But can you make a 50 Ohm dummy load with those specs that can
> > handle
> > 300 Watts? The stays at 50 Ohms out to at least 200 Megs or so?
> >
>
> 50 +/- what? What return loss are you shooting for in this 300W dummy
> load? Do you really need 40dB, or is 30dB good enough? I believe
> it's possible to bootstrap yourself into measurements that are far
> more accurate than you'll need for what you are doing, and do it quite
> economically if you don't count your time. But you ought to first ask
> yourself just what accuracy you really need, and understand why.
>

+/- 5 ohms or so. Something that doesn't swing up to 65-70 ohms or
40 ohms.

>
> > And i'm still not sure what you mean by "calibrate your SWR meter
> > to the line". All the SWR meters i have seen are all for 50 Ohms.
> >
> > Could you tell us the exact procedure?
>
> Of course not; I know nothing about YOUR SWR meter. If you understand
> how yours works, you should be able to see how to adjust it, though it
> may not be worthwhile.

I didn't think you could tell us. I've never seen an SWR meter
that you could "calibrate" to 50 or 75 ohms, or less.

Slick

3020. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:18:09 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bhblhc$2h1$1@slb3.atl.mindspring.net>
Source record: 110864

WD-40 is somewhat conductive. So be careful of it around insulated parts.

Dan/W4NTI

<Marylou127@city.net> wrote in message news:3F393266.B413CE85@city.net...
> I used steel wool and WD-40. It really works great.
>
> VHFRadioBuff wrote:
> >
> > I have an NMO magmount which has a bit of corrosion on the threads and
the part
> > where the antenna makes contact. The threads of the antenna also are a
bit
> > corroded. Can anyone recommend a good cleaner/method to remove this
corrosion?
> > =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
> > 73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
> > Beachwood, NJ USA! Grid FM29vw
> > http://vhfradiobuff.tripod.com
> > Fight Spam! http://spamcop.net
> > National "Do Not Call" Registry: http://donotcall.gov

3021. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:20:27 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bhbllk$pp9$1@slb0.atl.mindspring.net>
Source record: 110865
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Dwight Stewart" <stewartx@earthlinkNOSPAM.net> wrote in message
news:BB5D9FB4.221CE%stewartx@earthlinkNOSPAM.net...
>
>
> Where can I find an inexpensive, freestanding (or lightly guyed),
antenna
> tower? It doesn't have to support a lot of weight - a couple of small 2m
> radio antennas and one or two scanner antennas. And it also doesn't have
to
> be very tall - thirty to forty feet would be just fine. I'm sure others
> would be interested in this also.
>
>
> Dwight Stewart (W5NET)
>
> http://www.qsl.net/w5net/
>

Go to your hardware store and buy a Aluminum ladder. Clamp it to the side
of the building and guy as necessary.

Just an idea.

Dan/W4NTI

3022. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:25:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjimqok7ke8u94@corp.supernews.com>
Source record: 110866

Egad.

Given only a line's characteristic impedance and the load impedance, I can tell you exactly what the SWR is for a lossless line. For a lossy line, I only need to know, in addition, the line's length and the amount of loss per unit length. In no case do I need to know the source impedance.

If, as you insist, the source impedance affects the SWR on the line, please provide an equation that gives the SWR on the line, with source impedance being one of the variables. It's such a simple thing, surely such an equation appears in one of the several references you cite. I did notice that SWR doesn't appear in any of the titles or the quoted passages, though, so you may have to dig a little.

And if Cecil's work leads to the conclusion that the source impedance impacts the line's SWR, then it's wrong.

It is, for those who are interested, very easy to see intuitively why the source impedance doesn't affect the SWR. Consider the situation that occurs when the source is first turned on. A forward voltage wave travels down the line toward the load. A reflected wave, whose magnitude and phase are determined by the reflection coefficient at the load end of the line, returns. If we stop time just as the reflected wave is returning, we can calculate the SWR, so far, on the line, solely from the ratio of the forward and reflected waves -- it's the interference between these waves that create the standing waves. Turning time back on again, the returning wave reflects off the source (assuming a source mismatch), producing another forward wave. Let's watch this wave as it travels toward the load, reflects, and returns. Exactly the same proportion of this wave is reflected as for the original forward wave. So, when this new forward wave reflects and its reflected wave returns, we've got a total of two forward waves and two reflected waves. The forward/reflected ratio of the second pair is exactly the same as the forward/reflected ratio of the first pair -- it's the reflection coefficient at the load end. So the ratio of the total forward wave to the total reverse wave is the same for the first pair, the second pair, and the sum of the two pairs. In other words, the second pair of waves hasn't changed the SWR from what we calculated from the original pair of waves. You can continue this observation for each forward-reverse pair, and see that the SWR never changes (at least when observed when each reflected wave just returns) from the original value. And the original value was determined only by the load mismatch, not the source. The source mismatch determines how big the total forward and reflected waves end up being when all the reflections have died out to a negligible value. But it has nothing to do with the forward/reverse ratio, which

determines the SWR.

Roy Lewallen, W7EL

Richard Clark wrote:
> On Tue, 12 Aug 2003 02:48:49 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>Almost correct.
>>
>>The transmitter output impedance has no effect whatsoever on the line's SWR.
>>
>>Roy Lewallen, W7EL
>>
>
>
> Hi Roy,
>
> Entirely incorrect.
>
> Transmitter output impedance that does not conform to transmission
> line Z, when presented with a mismatched load through that line, adds
> mismatch uncertainty in the form of an indeterminate SWR and
> indeterminate Power to the load.
>
> This has already been demonstrated twice. This has long been
> documented with NBS/NIST references going back 4 decades. There is
> nothing mysterious about it at all, and it conforms to the rather
> simple principles of wave interference so poorly presented by Cecil in
> months past.
>
> The authoritative site:
> http://www.boulder.nist.gov/div813/index.html
>
> Direct reference:
> "Juroshek, J. R.; A Direct Calibration Method for Measuring
> Equivalent Source Mismatch; Microwave J., pp. 106-118;
> October 1997
>
> Obscure references:
> http://www.boulder.nist.gov/div813/rfelec/device/Publications/MetrologyPublications/ARFT
G00S_n2nNet.pdf
> "With vector measurements of the generator and meter reflection
> coefficients ï¿½g and ï¿½m, respectively, the power of the incident
> signal am can be related to the power of the source."
>
> http://www.boulder.nist.gov/div813/rfelec/noise/publications/00_NFRad_ARFTG.pdf
> which describes radiometer calibration (perhaps too exotic for this
> group)
> "tests are based on two assumptions. First, the network responds

> linearly to our signal (no power compression), and second, the
> radiometer is sufficiently isolated from the source impedance."
> ...
> "One of the assumptions made in deriving eq. (2) was that the
> output from the radiometer is not dependent on the source
> impedance. In the construction of the radiometer, two isolators
> are inserted at the input of the radiometer to isolate the
> radiometer from the source."
> ...
> "The mismatch uncertainty depends strongly on the poorly known
> correlation between uncertainties in the measurements of different
> reflection coefficients, and so we use the maximum of the
> uncertainties obtained by assuming either complete correlation or
> no correlation whatsoever."
>
> "Forthcoming Paper: Influence of Impedance Mismatch Effects on
> Measurements of Unloaded Q Factors of Transmission Mode Dielectric
> Resonators"
> IEEE Transaction on Applied Superconductivity
>
> "Analysis of Interconnection Network and Mismatch in the
> Nose-to-Nose Calibration
> Automatic RF Techniques Group , June 15-16, 2000 , Boston, MA -
> June 01, 2000
> "We analyze the input networks of the samplers used in the
> nose-to-nose calibration method. Our model demonstrates that the
> required input network conditions are satisfied in this method and
> shows the interconnection errors are limited to measurement
> uncertainties of input reflection coefficients and adapter
> S-parameters utilized during the calibration procedure. Further,
> the input network model fully includes the effects of mismatch
> reflections, and we use the model to reconcile nose-to-nose
> waveform correction methods with traditional signal power
> measurement techniques."
>
> As I mentioned, obscure references. However, given the impetus of
> their discussion is long known (and that I have already provided the
> original references they rely on), NIST presumes the investigators
> already have that basis of knowledge.
>
> 73's
> Richard Clark, KB7QHC

3023. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:32:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjin7edb0qntdc@corp.supernews.com>
Source record: 110867

Sorry, it's not clear from what you've said just what you're trying to match to what.

Truly, if you connect a 50 ohm load (be it a resistor, or some impedance transformed by a transmission line, tuner, or other means -- makes no difference) to a transmitter, and the transmitter's output impedance isn't 50 ohms, there will be a mismatch at the transmitter output.

But who cares? Most transmitters are designed to work properly when terminated with 50 ohms, but that doesn't at all mean that their output impedances are 50 ohms. And it certainly doesn't affect the SWR on any transmission line connected to the transmitter. If you were to discover that your transmitter's output impedance were, say, 10 ohms and you connected it to a 10 ohm load, you'd have a very unhappy transmitter. All you have to worry about is presenting the transmitter with the load it was designed to work into, not what the internal impedance of the transmitter is.

Roy Lewallen, W7EL

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vjhe05h0po7fc@corp.supernews.com>...
>
>>Almost correct.
>>
>>The transmitter output impedance has no effect whatsoever on the line's SWR.
>>
>>Roy Lewallen, W7EL
>>
>
>
>
> My point is that if the output impedance really was at a perfect
> 50 Ohms, then using a perfect 50 ohms transmission line, you can never
> match to anything other than 50 ohms.
>
> If the S22 is something other than 50 Ohms (usual case), then a
> transformation via 50 ohm coax about a constant VSWR is possible, for
> the purposes of matching to a not-quite-perfectly-50 ohms antenna.
>
>
> Slick

3024. Re: Electronically tuned Helix

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 21:38:34 UTC
From: whru@msn.com
Message-ID: <e52bdeaf.0308121338.5df7f3ac@posting.google.com>
Source record: 110868

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<j4aijvk8uq9md1obe97ngq6o1phm26n5ni@4ax.com>...
> On 11 Aug 2003 13:07:12 -0700, whru@msn.com (Fred) wrote:
>
> >A few years back I read a paper which described an electronically
> >tuned HF Helical antenna. It was a shunt fed Helical monopole which
> >employed electronically switched PIN diodes to add or subtract helix
> >turns. As far as I remember a 6ft helix antenna was resonant between 4
> >to 30 MHZ by switching the PIN diodes. Diameter = 19", 20 turns, Q<50,
> >average power = 400W.
> >Now the question to the antenna experts: was such an antenna ever
> >developed and manufactured. If yes, who did.
> >Thanks es 73
> >Fred
> >wb6iiq / dh1nwr
>
> Hi Fred,
>
> Seems unlikely. PIN diodes (or any diode for that matter) would have
> a very difficult time switching 300W voltage potentials far in excess
> of the diode's own intrinsic boundary potential. PIN diode switching
> is most often employed in receive circuits where the signal level is
> considerably smaller than the switching potential. Then, on the other
> hand, they may have huge power sources capable of blocking the RF
> potential swing anticipated at the node the PIN diode serves (talk
> about cost!).
>
> 73's
> Richard Clark, KB7QHC

Thank you Richard,
the PIN diodes they choose are UNITRODE (by now TI) UM4010 with a
resistance of 0.17 OHM and a maximun back bias voltage of 1000 V
(2000V breakdown voltage). The current handling capacity is 10A at an
ambient Temp of 70 degree C. You are right this thing had to be
expensive and you need about 5 or 6 of them. I couldn't find anything
on this device on the TI website, probably obsolete.
Regards
Fred, wb6iiq

3025. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:04:36 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjip3grrrgm27e@corp.supernews.com>
Source record: 110769

Hm, I've used WD-40 on everything from 115 VAC power switches to VHF slug-tuned inductors, potentiometers, and relay contacts. Whatever conductivity it might have, hasn't been a problem for me. I wouldn't use it on 100 meg level impedances, but more from worry that it would pick up dirt and grunge.

What sort of experiment can you suggest that will demonstrate and perhaps allow measurement of its conductivity?

Roy Lewallen, W7EL

Dan/W4NTI wrote:
> WD-40 is somewhat conductive. So be careful of it around insulated parts.
>
> Dan/W4NTI

3026. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:04:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3965d5$1_8@corp.newsgroups.com>
Source record: 110770

Richard Clark wrote:
> I see you still live in a dimensional aberration where you experience
> 22 days as 66 minutes.

I see that you still ignore the technical questions so I will repeat mine:
Are you saying that SWR doesn't equal (1+|rho|)/(1-|rho|)?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3027. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:16:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f396884_8@corp.newsgroups.com>
Source record: 110771

Yuri Blanarovich wrote:
> Barry, W9UCW has done extensive measurements using termocuples and other
> methods minimizing disturbance to measured system. He found that current in
> (esp. longer) coils is diminishing towards the other end.

If you add 1/4WL to the top of the antenna, the current in the coil
will *increase* towards the other end. In a standing wave antenna, the
total current is the sum of the forward current and the reflected
current. Whether the total current increases or decreases depends
on the phasing of the two currents at the point where the coil is
placed.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3028. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:20:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f396994_8@corp.newsgroups.com>
Source record: 110776

Dr. Slick wrote:
> I didn't think you could tell us. I've never seen an SWR meter
> that you could "calibrate" to 50 or 75 ohms, or less.

The calibration of the SWR meter is controlled by the internal sampling load resistor, the 'R' in Peter's V + IR equation. I have a home-brewed SWR meter that measures SWR on both balanced 450 ohm feedlines and on 300 ohm feedlines simply by changing the internal load resistors.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3029. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:22:42 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308121422.4096baf8@posting.google.com>
Source record: 110772

Had a look at the refs. I'm curious, did you actually read the
sentence that Roy wrote?

Cheers,
Tom

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<b44ijvsea7ucp6tnb6ipqgk3f2uq6blquk@4ax.com>...
> On Tue, 12 Aug 2003 02:48:49 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
> >Almost correct.
> >
> >The transmitter output impedance has no effect whatsoever on the line's SWR.
> >
> >Roy Lewallen, W7EL
> >
>
> Hi Roy,
>
> Entirely incorrect.
>
> Transmitter output impedance that does not conform to transmission
> line Z, when presented with a mismatched load through that line, adds
> mismatch uncertainty in the form of an indeterminate SWR and
> indeterminate Power to the load.
>
> This has already been demonstrated twice. This has long been
> documented with NBS/NIST references going back 4 decades. There is
> nothing mysterious about it at all, and it conforms to the rather
> simple principles of wave interference so poorly presented by Cecil in
> months past.
>
> The authoritative site:
> http://www.boulder.nist.gov/div813/index.html
>
> Direct reference:
> "Juroshek, J. R.; A Direct Calibration Method for Measuring
> Equivalent Source Mismatch; Microwave J., pp. 106-118;
> October 1997
>
> Obscure references:
> http://www.boulder.nist.gov/div813/rfelec/device/Publications/MetrologyPublications/ARFTG00S_n2nNet.pdf
> "With vector measurements of the generator and meter reflection

> coefficients ï¿½g and ï¿½m, respectively, the power of the incident
> signal am can be related to the power of the source."
>
> http://www.boulder.nist.gov/div813/rfelec/noise/publications/00_NFRad_ARFTG.pdf
> which describes radiometer calibration (perhaps too exotic for this
> group)
> "tests are based on two assumptions. First, the network responds
> linearly to our signal (no power compression), and second, the
> radiometer is sufficiently isolated from the source impedance."
> ...
> "One of the assumptions made in deriving eq. (2) was that the
> output from the radiometer is not dependent on the source
> impedance. In the construction of the radiometer, two isolators
> are inserted at the input of the radiometer to isolate the
> radiometer from the source."
> ...
> "The mismatch uncertainty depends strongly on the poorly known
> correlation between uncertainties in the measurements of different
> reflection coefficients, and so we use the maximum of the
> uncertainties obtained by assuming either complete correlation or
> no correlation whatsoever."
>
> "Forthcoming Paper: Influence of Impedance Mismatch Effects on
> Measurements of Unloaded Q Factors of Transmission Mode Dielectric
> Resonators"
> IEEE Transaction on Applied Superconductivity
>
> "Analysis of Interconnection Network and Mismatch in the
> Nose-to-Nose Calibration
> Automatic RF Techniques Group , June 15-16, 2000 , Boston, MA -
> June 01, 2000
> "We analyze the input networks of the samplers used in the
> nose-to-nose calibration method. Our model demonstrates that the
> required input network conditions are satisfied in this method and
> shows the interconnection errors are limited to measurement
> uncertainties of input reflection coefficients and adapter
> S-parameters utilized during the calibration procedure. Further,
> the input network model fully includes the effects of mismatch
> reflections, and we use the model to reconcile nose-to-nose
> waveform correction methods with traditional signal power
> measurement techniques."
>
> As I mentioned, obscure references. However, given the impetus of
> their discussion is long known (and that I have already provided the
> original references they rely on), NIST presumes the investigators
> already have that basis of knowledge.
>
> 73's
> Richard Clark, KB7QHC

3030. G5RV 450 ohm or 300 ohm Phasing line

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:24:31 UTC
From: Andy <dx90@blueyonder.co.uk>
Message-ID: <xOd_a.246$rp.66@news-binary.blueyonder.co.uk>
Source record: 110773

Hi all

If I choose G5RV Half or full size antenna what is the best phasing line to use and why 450 ohm or 300 ohm. I will be using a internal ATU on my transiever.

If I go for the full size G5RV I will have to use the first 66 feet straight harizontal up at 30 feet and the last 36 feet at a right angle sloping at 45 degrees, will this work ok?

Thanks

Andy

3031. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:24:41 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a4oijvg678d9tnlrm9924gtfk2a0arqmmb@4ax.com>
Source record: 110774

On Tue, 12 Aug 2003 14:25:47 -0700, Roy Lewallen <w7el@eznec.com>
wrote:
>If, as you insist, the source impedance affects the SWR on the line,
>please provide an equation that gives the SWR on the line, with source
>impedance being one of the variables.

Hi Roy,

Your crafted requirement reveals the shortfall inherent in the
problem. It is distance based too, and without that discussion there
is no way to forecast what SWR or Power reading you would obtain from
simply knowing both the load and source's Z's. This is why it is
called Mismatch Uncertainty.

I have provided NBS and NIST documents both recently and in the past.
Recent offerings are obscure, as I have already admitted. The earlier
citations I provided were direct and to the point and serve as the
basis of the recent work. I have provided data that exhibits the
effect. I have provided the test protocol in how to achieve that
data. I have also described that this data is also, theoretically,
achievable through standard interference math also presented by me in
the past.

It takes little imagination to observe that there is a zone of
confusion that lies between two reflecting interfaces when the path is
not fully described. My data showed that path in one foot increments
of transmission line over an interval of a quarter wavelength or more.

We have been offered evidence of this Mismatch Uncertainty by Dr.
Slick if I am to trust his postings - be that as it may, because it
requires no further proof.

Simply put, bald assertions that SWR is unaffected when read between
two discontinuities is wrong without a concomitant description of all
paths leading to the SWR meter. This is a commonplace of interference
plain and simple. I have observed no one describing this detail
(except Dr. Slick).

As all this is part of the historical record entitled:
"The Cecilian Gambit, a variation on the Galilean Defense revisited"
I do not see how its repetition here brings anything new to the mix.

None the less, this recent example has been fun. :-)

73's
Richard Clark, KB7QHC

3032. Re: Perth Plus Outbacker antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:25:33 UTC
From: Larry Loucks <Larry.Loucks@attglobal.net>
Message-ID: <3F39695D.934C3643@attglobal.net>
Source record: 110775

When I got a new vehicle I replaced my Hustler system with an Outbacker Perth. I did this because the Outbacker makes such a nice neat installation that does not attract a lot of attention. It works well for me but I mostly operate on 20-10. I really can't tell any difference on these bands versus the Hustler.

Larry

Fred wrote:
>
> Are there any of you out there that are using or have used the Outbacker
> antennas, especially the Perth Plus. I am getting tired of changing
> resonators on my hustler whe I am mobile and I don't like the many quirks
> that the screwdriver antennas have. I would like to hear from you guys
> before I shoot a bunch of bucks on a piece of gear that may not work that
> well. The hustler works like gangbusters. I would like to have another
> antenna that works as well yet like the Outbacker all one has to do is
> change the tap plug in and go with no more tuning required.
> Thanks in advance
> 73 de KE8TQ
> Fred
>
> --
>
>

3033. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:25:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f396ab8_8@corp.newsgroups.com>
Source record: 110778

Roy Lewallen wrote:
> And if Cecil's work leads to the conclusion that the source impedance
> impacts the line's SWR, then it's wrong.

It doesn't. In fact, just the opposite. My examples do NOT even
include a source impedance.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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3034. Re: Electronically tuned Helix

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:30:20 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hgqijv8aov39cf8j4q57oqpb6slo1ruvfr@4ax.com>
Source record: 110777

On 12 Aug 2003 14:38:34 -0700, whru@msn.com (Fred) wrote:

>Richard Clark <kb7qhc@comcast.net> wrote in message
news:<j4aijvk8uq9md1obe97ngq6o1phm26n5ni@4ax.com>...
>> On 11 Aug 2003 13:07:12 -0700, whru@msn.com (Fred) wrote:
>>
>> >A few years back I read a paper which described an electronically
>> >tuned HF Helical antenna. It was a shunt fed Helical monopole which
>> >employed electronically switched PIN diodes to add or subtract helix
>> >turns. As far as I remember a 6ft helix antenna was resonant between 4
>> >to 30 MHZ by switching the PIN diodes. Diameter = 19", 20 turns, Q<50,
>> >average power = 400W.
>> >Now the question to the antenna experts: was such an antenna ever
>> >developed and manufactured. If yes, who did.
>> >Thanks es 73
>> >Fred
>> >wb6iiq / dh1nwr
>>
>> Hi Fred,
>>
>> Seems unlikely. PIN diodes (or any diode for that matter) would have
>> a very difficult time switching 300W voltage potentials far in excess
>> of the diode's own intrinsic boundary potential. PIN diode switching
>> is most often employed in receive circuits where the signal level is
>> considerably smaller than the switching potential. Then, on the other
>> hand, they may have huge power sources capable of blocking the RF
>> potential swing anticipated at the node the PIN diode serves (talk
>> about cost!).
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Thank you Richard,
>the PIN diodes they choose are UNITRODE (by now TI) UM4010 with a
>resistance of 0.17 OHM and a maximun back bias voltage of 1000 V
>(2000V breakdown voltage). The current handling capacity is 10A at an
>ambient Temp of 70 degree C. You are right this thing had to be
>expensive and you need about 5 or 6 of them. I couldn't find anything
>on this device on the TI website, probably obsolete.
>Regards
>Fred, wb6iiq

Hi Fred,

Try
http://www.microsemi.com/literature/rfbrochure.pdf

73's
Richard Clark, KB7QHC

3035. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:32:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <amqijv8a8vej69ldaqjumc6dou0s3fr6j3@4ax.com>
Source record: 110779

On Tue, 12 Aug 2003 17:04:59 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> I see you still live in a dimensional aberration where you experience
>> 22 days as 66 minutes.
>
>I see that you still ignore the technical questions so I will repeat mine:
>Are you saying that SWR doesn't equal (1+|rho|)/(1-|rho|)?

Hi Cecil,

Why don't you solve the first problem before presenting your own?

73's
Richard Clark, KB7QHC

3036. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:33:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <foqijv4mn607l54jnrrqhqa8u6rnbbtcou@4ax.com>
Source record: 110780

On 12 Aug 2003 15:22:42 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Had a look at the refs. I'm curious, did you actually read the
>sentence that Roy wrote?
>
>Cheers,
>Tom
>

Hi Tom,

Yes, did you?

73's
Richard Clark, KB7QHC

3037. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:34:03 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308121434.9609036@posting.google.com>
Source record: 110781

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308120005.47844e96@posting.google.com>...
...
> You're right about this, and it reminds us that if there is any
> loss at all, we theoritically move away from a purely resistive
> characteristic impedance into a complex one. This furthers the
> complexity on the problem, as we must expect reactance in our coax.

It's not just theory, it's practice and measurable. But it's not a requirement that loss introduce reactance to Zo; it's just that if the line is lossless it must have a non-reactive Zo. Clearly if L/C = R/G, the impedance will be non-reactive.

Also, consider what reactance you do get in practical lines, at what frequencies. What effect does frequency have on the reactance? Why? Under what conditions will it really be a problem? Might the reactive part be so small that it will be totally swamped out by variations in the real part? Think a bit about how much it will or won't mess up the measurements you want to make.

Cheers,
Tom

3038. Re: Electronically tuned Helix

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:50:13 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308121450.c64e230@posting.google.com>
Source record: 110782

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<j4aijvk8uq9md1obe97ngq6o1phm26n5ni@4ax.com>...
...
>
> Seems unlikely. PIN diodes (or any diode for that matter) would have
> a very difficult time switching 300W voltage potentials far in excess
> of the diode's own intrinsic boundary potential. PIN diode switching
> is most often employed in receive circuits where the signal level is
> considerably smaller than the switching potential. Then, on the other
> hand, they may have huge power sources capable of blocking the RF
> potential swing anticipated at the node the PIN diode serves (talk
> about cost!).

Dunno about using PIN diodes to switch turns in a helix for an
antenna, but for sure they are used as TR switch elements to some
rather high powers. The usual switch topology turns on two diodes
during transmit so that there is little RF voltage across either, but
certainly they can work fine with P-P RF voltage up to their reverse
breakdown voltage, which can be hundreds of volts. (Some 1N4007s are
actually PIN structure, for example.) They can be put in series to
stand off more voltage if necessary. Just takes a very low current DC
bias voltage at half the breakdown.

I believe the HF radio used in P3 aircraft after they decided that the
ARC-94 didn't have enough frequency stability and resolution had an
electronically-switched tuner which I suppose used PIN diodes.
Perhaps some lurker knows for sure. That was quite a long time ago.
There are probably bunches of examples of power switching which also
require voltage standoff since then.

Cheers,
Tom

3039. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 22:52:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjirsjj48p1f19@corp.supernews.com>
Source record: 110783

It's admittedly hard for me to follow what you've written, but it sounds like you're saying that:

1. Source impedance affects line SWR, and
2. It's impossible to tell by how much.

Did I get that right?

Incidentally, you've brought up a new topic, that of an SWR meter. My original statement said nothing about an SWR meter; it dealt only with line SWR. As Reg and other have pointed out many times, an SWR meter reading is often very different from the SWR of a connected line, so it has no direct bearing on this discussion.

Roy Lewallen, W7EL

Richard Clark wrote:
> On Tue, 12 Aug 2003 14:25:47 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>>If, as you insist, the source impedance affects the SWR on the line,
>>please provide an equation that gives the SWR on the line, with source
>>impedance being one of the variables.
>
>
> Hi Roy,
>
> Your crafted requirement reveals the shortfall inherent in the
> problem. It is distance based too, and without that discussion there
> is no way to forecast what SWR or Power reading you would obtain from
> simply knowing both the load and source's Z's. This is why it is
> called Mismatch Uncertainty.
>
> I have provided NBS and NIST documents both recently and in the past.
> Recent offerings are obscure, as I have already admitted. The earlier
> citations I provided were direct and to the point and serve as the
> basis of the recent work. I have provided data that exhibits the
> effect. I have provided the test protocol in how to achieve that
> data. I have also described that this data is also, theoretically,
> achievable through standard interference math also presented by me in
> the past.
>
> It takes little imagination to observe that there is a zone of
> confusion that lies between two reflecting interfaces when the path is
> not fully described. My data showed that path in one foot increments
> of transmission line over an interval of a quarter wavelength or more.

>
> We have been offered evidence of this Mismatch Uncertainty by Dr.
> Slick if I am to trust his postings - be that as it may, because it
> requires no further proof.
>
> Simply put, bald assertions that SWR is unaffected when read between
> two discontinuities is wrong without a concomitant description of all
> paths leading to the SWR meter. This is a commonplace of interference
> plain and simple. I have observed no one describing this detail
> (except Dr. Slick).
>
> As all this is part of the historical record entitled:
> "The Cecilian Gambit, a variation on the Galilean Defense revisited"
> I do not see how its repetition here brings anything new to the mix.
>
> None the less, this recent example has been fun. :-)
>
> 73's
> Richard Clark, KB7QHC

3040. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 23:34:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <X0idnWgI-P_i5KSiXTWJkg@comcast.com>
Source record: 110784

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f396994_8@corp.newsgroups.com...
> Dr. Slick wrote:
> > I didn't think you could tell us. I've never seen an SWR meter
> > that you could "calibrate" to 50 or 75 ohms, or less.
>
> The calibration of the SWR meter is controlled by the internal sampling
> load resistor, the 'R' in Peter's V + IR equation. I have a home-brewed
> SWR meter that measures SWR on both balanced 450 ohm feedlines and on
> 300 ohm feedlines simply by changing the internal load resistors.
> --
> 73, Cecil http://www.qsl.net/w5dxp
Cecil,

When you do this, does the scale still display the correct SWR for
conditions other than 1:1 ?

Tam/WB2TT

3041. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 23:52:48 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308121552.340e4c7@posting.google.com>
Source record: 110785

Why not put voltage on the coax to make it work like an electric fence?

Jim Kelley <jwkelley@uci.edu> wrote in message news:<bh9028phk1@news.service.uci.edu>...
> You aren't running a Beverage antenna by any chance, are you? Cuz, if
> you give a squirrel a beverage..... :-)
>
> jk
>
> Stuart wrote:
>
> > Antenna Group~
> >
> > The squirrels here the my neighborhood have suddenly decided they like to
> > eat my coax and control cables. They seem to be particularly attracted to
> > the self-vulcanizing rubber used to seal the connections but they have eaten
> > some coax cables as well. Anyone know of a cure for this problem?
> >
> > Thanks
> >
> > Stuart, ki6qp
> >
> >

3042. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 23:52:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8osijvsqbfn8j8ttujblna0quothbtres5@4ax.com>
Source record: 110786

On Tue, 12 Aug 2003 15:52:05 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>It's admittedly hard for me to follow what you've written, but it sounds
>like you're saying that:

Hi Roy,

>1. Source impedance affects line SWR, and
>2. It's impossible to tell by how much.
>
>Did I get that right?
No. The sources offered and the data exhibited provide a very clear
answer. To state this yet again, it is the lack of knowledge in the
distances traversed between reflecting interfaces that introduces the
Mismatch Uncertainty. A smart lad might conspire to present any
particular Power measurement if he could withhold other details from
scrutiny. A lad who considered himself smart may do the same but
think he invented a free power amplifier (or dissipationless load).

This is simply an account of poor boundary controls that turn some
folk into magicians and others into the reincarnation of Galileo.
Either outcome is achieved through delusion.

>Incidentally, you've brought up a new topic, that of an SWR meter.
Look at the Subject line.

As for the aside about SWR meter reading, I have performed SWR
measurements with a variety of NBS methods (many hundreds of times) -
none of them described here very often, and some never at all. I
doubt any here are so well versed in these methods as to challenge my
data by employing them (it would only confirm the results). I would
be happy to see as much effort put to it - in that it would represent
a technical rebuttal rather than echoed denials. I would be happy to
retract my points if someone revealed an error of commission/omission
- such has not happened and discussion of that data has been wholly
absent.

Look Roy, skip the rhetoric (from all sources including me) and
explain or refute the data I obtained. If you cannot accept it,
reveal the error. If the method is too tedious to replicate - say so.
This is not the first time I've broached the subject and I certainly
don't expect many to care for one, or follow blithely for another. It
only matters in issues of accurate Power determination.

73's
Richard Clark, KB7QHC

3043. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-12 23:58:05 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308121558.1b959ff2@posting.google.com>
Source record: 110787

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308110449.1e6d37e2@posting.google.com>...
> Russ,
> The point I am making is that some comments are repeated
> so many times they take a life of their own
> Think about it, the resistors of old are a far cry from
> the carbon resistors of today which are not as porous,
> if it is a worry then coat it with epoxy !

And there goes the heat transfer characteristics of the
purpose-designed/built resistors used for liquid cooled dummy loads.

> Then there is the "rust" question, the paint cans of today
> have a teflon liner !

Paint cans are not resistors, they do not have to be surface-cooled
and the reason for the coatings is the water in todays the water-based
paints. Nobody I know uses water or latex paint in their dummy loads.

> Even the latest ham data states that
> motor oil CAN be used (no, it will not explode !) but raise
> a question of "life", possibly a suggestive comment that you
> change the oil every 5000 qso's.
> Certainly industry gives a good guide as to what is the best
> to use for their circumstances but it doesn't rule out every
> thing else for all time, and this includes motor oil of which
> there are many types.

Maybe 50,000 qso's later with the 'ole Cantenna on the side I'm still
running like new on drugstore mineral oil. Get back to us when your
reserch indicates which motor oil beats mineral oil.

Maybe ten years ago I had to wire brush, prime and repaint the can, it
was rusting from the *outside*.

> Regards
> Art

w3rv

3044. Re: Cobbwebb

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:21:12 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308121621.5d0d8257@posting.google.com>
Source record: 110788

'Doc <w5lz@cwis.net> wrote in message news:<3F330E1B.8AE77C4B@cwis.net>...
> Geo,
> What's a 'confined electrical field'?
> 'Doc

It's sorta like supergain.

w3rv

3045. Magnetic Loop Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:23:18 UTC
From: PMac <vk2evb@nella.net.au>
Message-ID: <3f3984fa@usenet.per.paradox.net.au>
Source record: 110789

Hi, I am in an area with a fairly high manmade, powerline noise and interference level. I am thinking of building a magnetic loop for 160, 80 & 40 metres and was hoping that it would not be so susceptible to the above types of interference. Also the antenna size factor appeals to me but comparisons with a dipole are hard to find. Any comments appreciated.

73 Peter VK2EVB

3046. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:32:26 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030812203226.07279.00001182@mb-m12.aol.com>
Source record: 110790

>
>When I open the load dialog window, it presents R in some form or
>another (the answer to your Q provision). Are you concerned the
>program will treat the load as an infinitesimally small object? If it
>does, you could decimate the coil inductance and distribute it across
>10 segments whose span is equivalent to your anticipated physical
>length. Perhaps a lot of trouble (and perhaps there's another, better
>way), but it seems to be the price of your query.
>
>73's
>Richard Clark, KB7QHC

That sounds reasonable.
Including physical properties of the coil (Length/diameter ratio, physical size) in the calculations of the model could help to optimize the system, allow more precise calculations and participation in the optimization routines.
If the load is treated as point, the current is considered the same at the entrance and exit of the coil, which is not the case especially in longer loading coils. Question is to what extent is program capable of capturing and then massaging it and what is the correlation to real life situations.
I got some RF ammeters, it will be interesting to see wasaaap.

Yuri, K3BUm

3047. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:36:26 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030812203626.07279.00001183@mb-m12.aol.com>
Source record: 110791

>
>What sort of experiment can you suggest that will demonstrate and
>perhaps allow measurement of its conductivity?
>

Uhm, spray it on the tongue and "taste" 9V battery and compare to no spray
"taste"? :-)

Sorry, couldn't resist to repay earth Chi.

BUm

3048. Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:40:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhc1e1$oo0$1@hercules.btinternet.com>
Source record: 110792

For anyone who may be interested.

Typical of RG-58 and RG-11 type cables.
Zo = Ro - jXo
Xo is always negative.
Angle of Zo in degrees. Always negative.
VF = relative velocity.

Freq	Ro	jXo	Angle	VF
50 Hz	967	-965	-44.95	0.034
1 kHz	220	-213	-44	0.151
10 kHz	80	-58	-36	0.41
100 kHz	56	-9.3	-9.5	0.59
1 MHz	52.4	-2.4	-2.7	0.63
10 MHz	50.7	-0.76	-0.86	0.65
100 MHz	50.2	-0.23	-0.27	0.66

Smith Chart calculations begin to be inaccurate around 2 MHz and below. So do SWR meters.

3049. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:41:22 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030812204122.07279.00001184@mb-m12.aol.com>
Source record: 110793

>
>If you add 1/4WL to the top of the antenna, the current in the coil
>will *increase* towards the other end. In a standing wave antenna, the
>total current is the sum of the forward current and the reflected
>current. Whether the total current increases or decreases depends
>on the phasing of the two currents at the point where the coil is
>placed.
>--
>73, Cecil http://www.qsl.net/w5dxp

No standing or laying waves allowed. We are talking about the (mostly)
electrical quarter wave loaded radiators (aka mobile antennas) as used in
shootouts.

Yuri

3050. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:50:34 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <uXf_a.22331$Pb7.557302@twister.southeast.rr.com>
Source record: 110794

Only one bad thing about sending hunters out with guns for animal population control. They dont take out the weak and those of poor genetic quality. They tend to take those from the top of the herd. Only restoring the balance of predatory animals will really solve the problem. BTW I am a deer hunter.

"Roger Halstead" <newsgroups@rogerhalstead.com> wrote in message news:he0gjvs3oj9g1a9nq1tt09ausf31hk6bea@4ax.com...
> On Sun, 10 Aug 2003 09:29:49 -0400, "WB3FUP \(Mike Hall\)"
> <wb3fup@msn.com> wrote:
>
> >Take a trip though Fairmont Park in Philly. Nothing green below 4 of 5
> >foot. Overpopulation is as much a problem as over hunting, a potentially
> >more serious to humans as diseased animals die..
>
>
> Here they even have limited hunts in park areas and the city forrest
> to reduce the over populations. Every time they do it's a battle with
> the environmentalists. I guess they figure starving to death, or the
> deer being killed by dogs or coyotes is more humane.
>
> At least for the time being herd management and common sense is
> prevailing.
>
> I've not had any problems with squirrels getting into the coax...yet.
> Maybe it's my cat chasing them (and the stray dogs) out of the yard.
> Big cat. Hates dogs. Loves kids. Chased every dog in the
> neighborhood home except one. They ever meet and I'll probably be
> looking for a new cat, although he did get into a fight (attacked) a
> full grown black lab that came in to the yard...and won.
>
> The dog walked up behind the little neighbor girl and the cat went
> ballistic.
>
> When he was much younger he took in after a squirrel. The squirrel
> went up a tree with the car right behind it. The squirrel bailed from
> something like 25-30 feet up. The cat never slowed and went right
> after him. However when the squirrel went up the next tree the cat
> stopped at the bottom and just looked up.... I think he learned
> something that day. <:-)) driveways are pretty hard when hit from 30
> feet up.
>
> Roger Halstead (K8RI EN73 & ARRL Life Member)
> www.rogerhalstead.com
> N833R World's oldest Debonair? (S# CD-2)

>
>
>

3051. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 00:54:29 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <9%f_a.22410$Pb7.558415@twister.southeast.rr.com>
Source record: 110795

Sqirrel is one of the 3 main ingredients of Brunswick stew, the other 2
being chicken and pork.

"Roger Halstead" <newsgroups@rogerhalstead.com> wrote in message
news:9mvfjv8etiv9ld53s5h17hguv4sp96j1vv@4ax.com...
> On Sun, 10 Aug 2003 01:21:08 +0000 (UTC), "Reg Edwards"
> <g4fgq.regp@btinternet.com> wrote:
>
> >Are squirrels edible ?
>
> You bet and they are delicious if you can get past the idea of a
> skinned one looks exactly like a rat. <:-))
>
> They are highly sought after during small game season in Michigan.
>
> Roger Halstead (K8RI EN73 & ARRL Life Member)
> www.rogerhalstead.com
> N833R World's oldest Debonair? (S# CD-2)
>
> >
> >
>

3052. Re: Magnetic Loop Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 01:31:29 UTC
From: Loopfan <nobody@nohere.moc>
Message-ID: <Rxg_a.3404$Nf3.2406@newsread4.news.pas.earthlink.net>
Source record: 110796

Hello PMac!

I've built many homebrew loops and they work great! The project was so successful for me that I wrote up quite a few pages about them:

http://www.greertech.com/hfloop/mymagloop.html

They are truly fascinating. In about 15 minutes time, you can build one of these to see if it helps. They saved the hobby for me!

73 Loopfan

PMac wrote:
> Hi, I am in an area with a fairly high manmade, powerline noise and
> interference level. I am thinking of building a magnetic loop for 160, 80 &
> 40 metres and was hoping that it would not be so susceptible to the above
> types of interference. Also the antenna size factor appeals to me but
> comparisons with a dipole are hard to find. Any comments appreciated.
>
> 73 Peter VK2EVB

3053. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 02:17:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjj7tdihjeqf4a@corp.supernews.com>
Source record: 110797

I stated that the source impedance has no effect on the line's SWR. You said that was incorrect. I can (and happily will, on request) present equations which one can solve for SWR without any reference to the source impedance, as well as an explanation for why line SWR is independent of source impedance. You have presented some reference titles and many interesting words, but not an equation that shows the dependence of the source impedance on SWR. Nor any reason why it should.

I haven't seen your data, but if it shows a dependence of SWR on source impedance, then I certainly refute it, and believe you should closely examine your methodolgy. Your references notwithstanding (which don't obviously deal directly with SWR at all), widely accepted theory and equations universally support my statement. Therefore, if your data show the contrary and you're certain they're correct, you're in a position to rewrite currently accepted principles of electromagnetics. But sorry, I don't feel it's an appropriate use of my time to find flaws in measurements that contradict established theory.

I stand by my statement.

Roy Lewallen, W7EL

Richard Clark wrote:
>. . .
> Look Roy, skip the rhetoric (from all sources including me) and
> explain or refute the data I obtained. If you cannot accept it,
> reveal the error. If the method is too tedious to replicate - say so.
> This is not the first time I've broached the subject and I certainly
> don't expect many to care for one, or follow blithely for another. It
> only matters in issues of accurate Power determination.
> 73's
> Richard Clark, KB7QHC

3054. Microvert

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 02:52:12 UTC
From: ve3bts@rac.ca
Message-ID: <1ed859b.0308121852.765e7b0f@posting.google.com>
Source record: 110799

http://www.antennex.com/preview/archive4/Apr601/microvert.htm

Did anybody try to make this small antenna?Seems like feedline does
its share of radiating.

3055. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 03:27:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f39b16e_6@corp.newsgroups.com>
Source record: 110800

Richard Clark wrote:
> Why don't you solve the first problem before presenting your own?

What first problem? My Mother is in the hospital and I haven't been
reading all the postings.
--
73, Cecil http://www.qsl.net/w5dxp

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3056. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 03:39:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f39b436$1_6@corp.newsgroups.com>
Source record: 110801

Tarmo Tammaru wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>>The calibration of the SWR meter is controlled by the internal sampling
>>load resistor, the 'R' in Peter's V + IR equation. I have a home-brewed
>>SWR meter that measures SWR on both balanced 450 ohm feedlines and on
>>300 ohm feedlines simply by changing the internal load resistors.
>
> When you do this, does the scale still display the correct SWR for
> conditions other than 1:1 ?

The scale is calibrated using known loads so yes, it displays the
correct SWR up to 5.83:1. Above 5.83:1 the resolution of the scale
is poor because the full scale SWR is infinity. I have marks at
5.83:1 and 10:1. 5.83:1 is where the reflected power equals half
the forward power. Incidentally, the Z0 of my '450' ohm ladder-
line is closer to 388 ohms.
--
73, Cecil http://www.qsl.net/w5dxp

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3057. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 03:51:09 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308121951.3c44a364@posting.google.com>
Source record: 110802

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f396994_8@corp.newsgroups.com>...
> Dr. Slick wrote:
> > I didn't think you could tell us. I've never seen an SWR meter
> > that you could "calibrate" to 50 or 75 ohms, or less.
>
> The calibration of the SWR meter is controlled by the internal sampling
> load resistor, the 'R' in Peter's V + IR equation. I have a home-brewed
> SWR meter that measures SWR on both balanced 450 ohm feedlines and on
> 300 ohm feedlines simply by changing the internal load resistors.

Cecil,

Would these be the termination resistors to ground, one for each
directional coupler? I would think that you would have to adjust the
width of the traces as well, or the thickness of the dielectric
material, or the space between the couplers and the thru-line to use
it for an impedance other than 50 Ohms (talking about commercial
equipment, that is).

Slick

3058. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 03:52:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f39b736$1_6@corp.newsgroups.com>
Source record: 110804

Yuri Blanarovich wrote:
> No standing or laying waves allowed. We are talking about the (mostly)
> electrical quarter wave loaded radiators (aka mobile antennas) as used in
> shootouts.

Those mobile antennas are standing-wave antennas. The forward current is relatively constant and is reflected at the end of the whip. The reflected current adds to the forward current to give the total current. A standing-wave antenna is similar to a transmission line with standing waves except that it is designed to radiate and the transmission line is not. The major reason that the current drops through the loading coil is the same as for a 1/4WL monopole without a loading coil. The total current is maximum at the feedpoint and drops to zero at the end of the whip because the forward and reflected currents add to those values. The forward current through the coil is virtually the same value at each end of the coil. The reflected current back through the coil is virtually the same value at each end of the coil. The phasing between those two currents is what determines the total current which is indeed different at each end of the coil.
--
73, Cecil http://www.qsl.net/w5dxp

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3059. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 03:52:17 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308121952.6801851c@posting.google.com>
Source record: 110803

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f396994_8@corp.newsgroups.com>...
> Dr. Slick wrote:
> > I didn't think you could tell us. I've never seen an SWR meter
> > that you could "calibrate" to 50 or 75 ohms, or less.
>
> The calibration of the SWR meter is controlled by the internal sampling
> load resistor, the 'R' in Peter's V + IR equation. I have a home-brewed
> SWR meter that measures SWR on both balanced 450 ohm feedlines and on
> 300 ohm feedlines simply by changing the internal load resistors.

BTW, how do you know the accuracy of your homebrew SWR meter?

Slick

3060. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 04:03:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f39b9f8_6@corp.newsgroups.com>
Source record: 110805

Dr. Slick wrote:
> Would these be the termination resistors to ground, one for each
> directional coupler?

Yes

> I would think that you would have to adjust the
> width of the traces as well, or the thickness of the dielectric
> material, or the space between the couplers and the thru-line to use
> it for an impedance other than 50 Ohms (talking about commercial
> equipment, that is).

I use a toroid to sense the RF current and an R=Z0 resistor to turn it
into a voltage. I have a capacitive voltage divider on the RF voltage
which is adjustable for calibration purposes. The only real difference
between it and a 50 ohm SWR meter is the internal load resistor. It's
actually a bridge circuit with a Z0 reference resistor. Unfortunately,
it is not very accurate for the relatively high SWRs that I run on my
ladder-line, e.g. 4:1 to 16:1
--
73, Cecil http://www.qsl.net/w5dxp

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3061. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 04:15:08 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308122015.33d8fd9@posting.google.com>
Source record: 110806

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308121434.9609036@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308120005.47844e96@posting.google.com>...
> ...
> > You're right about this, and it reminds us that if there is any
> > loss at all, we theoritically move away from a purely resistive
> > characteristic impedance into a complex one. This furthers the
> > complexity on the problem, as we must expect reactance in our coax.
>
> It's not just theory, it's practice and measurable. But it's not a
> requirement that loss introduce reactance to Zo; it's just that if the
> line is lossless it must have a non-reactive Zo. Clearly if L/C =
> R/G, the impedance will be non-reactive.
>

True. Never considered this before, thank you. Makes sense that
if the ratio of the series resistance and shunt conductance are the
same as the ratio of the series inductance and shunt capacitance, that
the transmission line will still be non-reactive.

> Also, consider what reactance you do get in practical lines, at what
> frequencies. What effect does frequency have on the reactance? Why?
> Under what conditions will it really be a problem? Might the reactive
> part be so small that it will be totally swamped out by variations in
> the real part? Think a bit about how much it will or won't mess up
> the measurements you want to make.
>
> Cheers,
> Tom

In general, using an MFJ antenna analyzer to get a rough idea of
what the series equivalent complex impedance is (these are not $80,000
vector network analyzers!), it seems that cheap 3' RG-8x jumper coax
cables mainly add series inductance to the system, as the reactance
gets higher with increasing frequency.
We try to design 9 element chebychev low-pass filters, which is
not difficult at very low power levels, as two 1/4 watt 100 Ohm
resistors make a decent dummy load all the way out to 200 megs or so.

The problem is characterizing insertion loss using higher power
transmitters, when we know that the 1000 watt cantenna swings from 40
to 70 Ohms (with reactance too) as you get above 80 megs or so. It
become difficult to know if you are moving in the right direction or
not.

Slick

3062. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 04:15:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f39bcaa_6@corp.newsgroups.com>
Source record: 110808

Dr. Slick wrote:
> BTW, how do you know the accuracy of your homebrew SWR meter?

I have a bunch of 50W 600 ohm non-inductive resistors that I use
for calibration purposes. And I really don't know the accuracy.
An SWR of 20:1 looks the same as an SWR of 25:1 on the scale.
I have an upper and lower acceptable limit to the SWRs with the
matching method I use. The SWR meter tells me if the SWR is
outside of that acceptable range.
--
73, Cecil http://www.qsl.net/w5dxp

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3063. skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 04:15:58 UTC
From: Alfred Lorona <w6wqc@dslextreme.com>
Message-ID: <bhce2k$10oejs$1@ID-49117.news.uni-berlin.de>
Source record: 110807

Does anyone have access to Proc I.R.E., 39, 767 (1951) by A.M. Clogston? It describes a way to reduce skin effect in wires by using a laminated construction and should make interesting reading.

73, AL w6wqc

3064. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 05:26:32 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308122126.db89ca0@posting.google.com>
Source record: 110809

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjin7edb0qntdc@corp.supernews.com>...
>
> Truly, if you connect a 50 ohm load (be it a resistor, or some impedance
> transformed by a transmission line, tuner, or other means -- makes no
> difference) to a transmitter, and the transmitter's output impedance
> isn't 50 ohms, there will be a mismatch at the transmitter output.
>
> But who cares? Most transmitters are designed to work properly when
> terminated with 50 ohms, but that doesn't at all mean that their output
> impedances are 50 ohms. And it certainly doesn't affect the SWR on any
> transmission line connected to the transmitter. If you were to discover
> that your transmitter's output impedance were, say, 10 ohms and you
> connected it to a 10 ohm load, you'd have a very unhappy transmitter.
> All you have to worry about is presenting the transmitter with the load
> it was designed to work into, not what the internal impedance of the
> transmitter is.
>
> Roy Lewallen, W7EL
>

As you might know, the input S11 or SWR will change when you go
from an antenna analyzer or network analyzer to measuring with the
actual full power PA and meter hooked up. This may be partly due to
the fact that the meter is usually not a perfect 50 ohm thru, and
partly due to the fact that the analyzers outputs are closer to 50
ohms than the PA.

If I understand the point you are trying to make, you are stating
that the perfect 50 ohm SWR of a system will never change.

However, keep in mind that you CAN normalize the Smith Chart to
have anything be in its center, like 10 ohms or something.

And i don't think you can expect the measured SWR with the meter
and PA to be exactly the same as what you get with a small-signal
analyzer. It's usually a bit different.

Slick

3065. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 05:48:09 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjjk8sr94jbd69@corp.supernews.com>
Source record: 110810

Dr. Slick wrote:
>
> As you might know, the input S11 or SWR will change when you go
> from an antenna analyzer or network analyzer to measuring with the
> actual full power PA and meter hooked up. This may be partly due to
> the fact that the meter is usually not a perfect 50 ohm thru, and
> partly due to the fact that the analyzers outputs are closer to 50
> ohms than the PA.

If S11 or the SWR actually does change, you've either got a nonlinear transmission line or a nonlinear load. That is, the impedance changes as the signal level changes. If you *measure* a different SWR or S11, it means that either the SWR or S11 is actually changing for the reasons I just stated, or the meter is nonlinear in the sense that its reading changes with power level (possibly due to RF ingress, but it could be a host of other things), or you're measuring with two different meters that don't agree.

It's not because of the different source impedances.

Sure, you can normalize a Smith chart to anything you'd like. That doesn't make the SWR change with source impedance.

>. . .

Roy Lewallen, W7EL

3066. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 07:06:44 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <qU6walCEOeO$EAhG@ifwtech.co.uk>
Source record: 110815

W5DXP wrote:
>Dr. Slick wrote:
>> BTW, how do you know the accuracy of your homebrew SWR meter?
>
>I have a bunch of 50W 600 ohm non-inductive resistors that I use
>for calibration purposes. And I really don't know the accuracy.
>An SWR of 20:1 looks the same as an SWR of 25:1 on the scale.
>I have an upper and lower acceptable limit to the SWRs with the
>matching method I use. The SWR meter tells me if the SWR is
>outside of that acceptable range.

It's interesting to see an example of an SWR meter for a Z0 that isn't 50 ohms, because it helps to confirm that they all work in basically the same way.

If [V] is a sample of the line voltage, and [I] is a sample of the line current, then the forward reading is the sum of two RF voltages, [V] + [I]R, where R is the resistor that converts the [I] sample into a voltage.

The reverse reading is the difference, [V] - [I]R. The "calibration to Z0" procedure consists of terminating the line in the design value of Z0, and then adjusting R so that the reverse reading [V] - [I]R is zero.

The RF voltages are either summed or subtracted, and then the resultant is detected by the diode.

Just one small point, though... it is not necessary that R = Z0. The value required depends on the sampling factors kV and kI that relate the voltage and current in the line to the sampled values [V] and [I]. In full, the instrument is calibrated to Z0 when:

kV*V - kI*I*R = 0

In a typical bridge, two out of the three constants kV, kI and R are fixed, and the third is adjustable. In a Bruene bridge, kI is fixed by the number of turns on the current-sampling toroid, R is fixed, and you calibrate the bridge by adjusting the kV factor in the voltage divider. However, it would be equally good to build-in fixed values of kV and kI, and balance the bridge by making R a small trimpot. So R really does not have to equal Z0... and in most published circuits, it doesn't.

This can also be shown in a different way, by thinking of it as a Wheatstone bridge, with Z0 as one arm. The requirement for balance is only that Z0/R2 = R3/R4. It is not necessary for any of the other resistors R2, R3 or R4 to equal Z0 in order to achieve balance.

AFAIK, the only situation where the "terminating" resistor truly needs to equal Z0 is in parallel-line couplers for microwaves, when the sampling line approaches a quarter-wavelength long and its own characteristic impedance is Z0 too.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3067. Re: G5RV 450 ohm or 300 ohm Phasing line

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 07:19:16 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308122319.bd046ad@posting.google.com>
Source record: 110811

"Andy" <dx90@blueyonder.co.uk> wrote in message
news:<xOd_a.246$rp.66@news-binary.blueyonder.co.uk>...
> Hi all
>
> If I choose G5RV Half or full size antenna what is the best phasing line to
> use and why 450 ohm or 300 ohm.

That is no phasing line. You use a phasing line when you want to feed
two or more antennas in or out of phase. You will only have one
antenna.

I will be using a internal ATU on my
> transiever.

It might work ok, but I'd be careful. Those tuners in the radios are
not really that well suited for this type of use. It will probably
tune, but keep an eye out for possible tuner overheating with large
mismatches. I always prefer an outboard tuner when tuning a ladder
line fed antenna. If it were me, I'd run ladder line the whole way. No
coax.
>
> If I go for the full size G5RV I will have to use the first 66 feet straight
> harizontal up at 30 feet and the last 36 feet at a right angle sloping at 45
> degrees, will this work ok?

It should. MK

3068. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 07:21:36 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <RVLuKBEAceO$EAnX@ifwtech.co.uk>
Source record: 110816

Dr. Slick wrote:
> As you might know, the input S11 or SWR will change when you go
>from an antenna analyzer or network analyzer to measuring with the
>actual full power PA and meter hooked up. This may be partly due to
>the fact that the meter is usually not a perfect 50 ohm thru, and
>partly due to the fact that the analyzers outputs are closer to 50 ohms
>than the PA.
>
Sorry, that is exactly wrong. S11, SWR and the impedance itself, do
not change when you connect a different instrument to the same load.
All the changes you have described are due entirely to instrument
errors.

That's how the instrument errors are determined... by knowing for a fact
that, whatever all the different instruments may say, the impedance
they're trying to measure is the one thing that has *not* changed.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3069. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 07:23:15 UTC
From: Jim Richardson <warlock@eskimo.com>
Message-ID: <3k5p01-3pf.ln1@grendel.myth>
Source record: 110812

```
-----BEGIN PGP SIGNED MESSAGE-----
Hash: SHA1

On Sun, 10 Aug 2003 01:21:08 +0000 (UTC),
Reg Edwards <g4fgq.regp@btinternet.com> wrote:
> Are squirrels edible ?
>
>
>

Heck yeah! good tasting too! Although they take a couple for a full
meal. 22lr and a little patience is all you need. Although if you want
something to stop them chewing stuff. Try the hottest sauce you can
find, something way beyond tabasco. Like grim reaper or something. Just
smear it on the stuff to be protected.

-----BEGIN PGP SIGNATURE-----
Version: GnuPG v1.2.2 (GNU/Linux)

iD8DBQE/Oedjd90bcYOAWPYRAhF4AJsFBT1Byn7KUg3hud6XP8IY3PdzuwCcDQ1b
ZDBJG2HOs07XHcCHeslMyiI=
=2AZn
-----END PGP SIGNATURE-----

--
Jim Richardson http://www.eskimo.com/~warlock

Linux, because eventually, you grow up enough to be trusted with a fork()
```

3070. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 07:58:40 UTC
From: Dwight Stewart <stewartx@earthlinkNOSPAM.net>
Message-ID: <BB5F68C7.222E6%stewartx@earthlinkNOSPAM.net>
Source record: 110813
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Tarmo Tammaru" wrote:
>
> If they still make it, the Rohn HBX series would
> be the least expensive. (Notice, I didn't say
> cheap). It comes in 8 foot... (snip)

Yep, that's the best I've found so far.

> If you live in a fringe TV area that recently got
> cable, you should be able to get a TV tower for
> free if you take it down. (snip)

Tried that already and had no luck. I found two in this area. We couldn't get the first one apart after we laid it down (someone welded the bolts) and the other fell apart as we took it down (heavy rust).

Dwight Stewart (W5NET)

http://www.qsl.net/w5net/

3071. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 08:10:26 UTC
From: Dwight Stewart <stewartx@earthlinkNOSPAM.net>
Message-ID: <BB5F6B88.222EA%stewartx@earthlinkNOSPAM.net>
Source record: 110814
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Dan/W4NTI" wrote:
>
> Go to your hardware store and buy a Aluminum
> ladder. Clamp it to the side of the building
> and guy as necessary.

As described in a previous message, there isn't a lot of room for guy wires. The area is about two and a half feet wide - just enough room for a cement slab to support a small freestanding tower. After that, there just isn't any room to run guy wires out very far. What there is (the building and a nearby fence) isn't going to provide a strong support for guy wires.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net/

3072. Re: Magnetic Loop Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 09:56:44 UTC
From: PMac <vk2evb@nella.net.au>
Message-ID: <3f3a0b62@usenet.per.paradox.net.au>
Source record: 110731

Thanks chaps, I think I will give it a whirl cya Peter VK2EVB

"PMac" <vk2evb@nella.net.au> wrote in message
news:3f3984fa@usenet.per.paradox.net.au...
> Hi, I am in an area with a fairly high manmade, powerline noise and
> interference level. I am thinking of building a magnetic loop for 160, 80
&
> 40 metres and was hoping that it would not be so susceptible to the above
> types of interference. Also the antenna size factor appeals to me but
> comparisons with a dipole are hard to find. Any comments appreciated.
>
> 73 Peter VK2EVB
>
>

3073. Jpole tuning?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 11:12:06 UTC
From: FrankW <fworm@norpak.ca>
Message-ID: <3F3A1D06.6080003@norpak.ca>
Source record: 110817

Hello All
Considering using a Jpole antenna for 2 meters
I plan to mount it on top of a 40 ft tower
I've read that it should be tuned where it will
permantently reside, The area is in a big field on a hill
Can I just mount it on the top 10ft section, tune then
put it on the tower?
Any hints and tricks regarding tuning a jpole would
be great!
Thanks in advance
Regards

3074. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 12:23:20 UTC
From: BOB <N8JRZ@NETZERO.NET>
Message-ID: <3F3A2DB8.2040600@NETZERO.NET>
Source record: 110818

is far motor oil (if you have to use it) use "nd 30" (or 40 ,20,50 the
weight is not important) the "nd" is non detergent, to not dissolve carbon

i tend to agree try to find an oil closer to what's "right"

bob

3075. Re: Magnetic Loop Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 12:49:40 UTC
From: Al - KA5JGV <aburzynski@swri.nojunk.edu>
Message-ID: <vjkcv82mfvuoce@corp.supernews.com>
Source record: 110719

> The problem with trying to null noise sources like yours is they are
> rarely from a single direction. Null one and another gets peaked. You
> might be lucky however, so you might as well give it a try. Nothing
> ventured, nothing gained.
>
> The other problem with loops is most folks install them low to the
> ground, where they work about as well as a dipole low to the ground.
>
> --
> 73, Bill W7TI

I agree with the first paragraph. However my experiences with loops (receive only for now) show a tremendous improvement in S/N for loops mounted right at ground level over dipoles mounted along the roof line. If you raise the loop, the signal improves further. Loops are something definitely worth investigating in noisy situations.

Al
KA5JGV

3076. Re: Horizontal J type (G2BCX Slim Jim for those who remember)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 12:55:10 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F3A3304.1A5E02A3@gte.net>
Source record: 110720

> Has anybody tried using a Slim Jim horizontally on HF other than on 10M?
>
> de G6XCD

See: http://www.parelectronics.com/end_fedz.htm

and http://www.universal-radio.com/catalog/hamwire/4456.html

3077. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 13:56:26 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308130556.430fd690@posting.google.com>
Source record: 110721

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<RVLuKBEAceO$EAnX@ifwtech.co.uk>...
> >
> Sorry, that is exactly wrong. S11, SWR and the impedance itself, do
> *not* change when you connect a different instrument to the same load.
> All the changes you have described are due entirely to instrument
> errors.
>
> That's how the instrument errors are determined... by knowing for a fact
> that, whatever all the different instruments may say, the impedance
> they're trying to measure is the one thing that has *not* changed.

You are right, but i never stated that the impedance we are
feeding ever changes, only the measured SWR.

Hey, we live in the real world, with real instrument errors. This
is the case i am talking about when i started the thread. I usually
DON'T measure the same SWR from antenna analyzer versus PA and meter
hooked up, and this may be due to the fact that the PA has a different
source impedance than the analyzer. I'm not claiming that the
impedance we are feeding has changed. And if you read my original
post, you will notice that the SWR didn't change when the coax length
was changed, mainly the incident power.

How would you explain what Cecil wrote? How are some people
improving SWR by changing coax length, when in theory they shouldn't
be able to do this?

Do you think the series reactance a system offers a PA may
actually improve it's incident power?

Slick

3078. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 14:05:44 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308130605.121d0404@posting.google.com>
Source record: 110722

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjjk8sr94jbd69@corp.supernews.com>...
>
> Sure, you can normalize a Smith chart to anything you'd like. That
> doesn't make the SWR change with source impedance.
>

I disagree on this point. You are caught up in the 50 Ohm world,
which i admit is easy to do. The SWR is based on the ratio of the
forward to the reflected power. If you had an analyzer that was
calibrated to 20 Ohms (the same as normalizing the Smith for 20 Ohms
in the center) you would certainly have reflected power and high SWR
going into a 50 Ohm load.

And a 20 Ohm load would have a 1:1 SWR.

Slick

3079. Re: EZNEC and Half Square

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 14:21:35 UTC
From: James <jimmy@nospam.com>
Message-ID: <3F3A496E.2454A903@nospam.com>
Source record: 110723

hi jim

check http://www.cebik.com

dr. cebik may already have a model created on file
or in one of the papers he has written.

Jim wrote:

> I'm new to EZNEC, and not too skilled but trying to learn. Does
> anyone have a .ez file for a corner connected half square they would
> be willing to share? If so, please EMAIL it to jleder@cinci.rr.com .
> Thanks!

3080. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 14:27:01 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <dbikjv4n3aerr77jj8i5hjnj1aooc7l3mn@4ax.com>
Source record: 110798

On 12 Aug 2003 02:50:35 GMT, vhfradiobuff@aol.comspamme (VHFRadioBuff)
wrote:

>I have an NMO magmount which has a bit of corrosion on the threads and the part
>where the antenna makes contact. The threads of the antenna also are a bit
>corroded. Can anyone recommend a good cleaner/method to remove this corrosion?
>=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-
>73! de Andy KC2SSB (ex: KF4KHC/HL9HCT)
>Beachwood, NJ USA! Grid FM29vw
>http://vhfradiobuff.tripod.com
>Fight Spam! http://spamcop.net
>National "Do Not Call" Registry: http://donotcall.gov

I'd just stop at the grocery or hardware store and pick up a can of
Brasso. Shined up my old brass military buckles very nicely, and
should do a fine job on whatever metal your antenna is made of.

It removes the corrosion very easily with a rag, and doesn't harm the
skin.

Bob
k5qwg

3081. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 14:28:35 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308130628.138177d9@posting.google.com>
Source record: 110724

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<RVLuKBEAceO$EAnX@ifwtech.co.uk>...
> Dr. Slick wrote:
> > As you might know, the input S11 or SWR will change when you go
> >from an antenna analyzer or network analyzer to measuring with the
> >actual full power PA and meter hooked up. This may be partly due to
> >the fact that the meter is usually not a perfect 50 ohm thru, and
> >partly due to the fact that the analyzers outputs are closer to 50 ohms
> >than the PA.
> >
> Sorry, that is exactly wrong. S11, SWR and the impedance itself, do
> *not* change when you connect a different instrument to the same load.
> All the changes you have described are due entirely to instrument
> errors.
>
> That's how the instrument errors are determined... by knowing for a fact
> that, whatever all the different instruments may say, the impedance
> they're trying to measure is the one thing that has *not* changed.

On second thought, i believe we are all wrong to equate S11 with
SWR!

Input S11 of a system will certainly never change. But the SWR
is absolutely dependant on the source impedance. If you had a network
analyzer calibrated for 20 Ohms, you would certainly have reflected
power and high VSWR going into 50 Ohms, and a 1:1 SWR going into 20
Ohms.

This would be the same as re-normalizing the Smith Chart for 20
Ohms in the center. You certainly can do this in MIMP.

I don't blame anyone for believing it's a 50-Ohm-only world!

Slick

3082. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 14:39:23 UTC
From: Robert Spooner <rls19@psu.edu>
Message-ID: <bhdiiq$1jle$1@f04n12.cac.psu.edu>
Source record: 110726

Actually, the viscosity (the number indicates viscosity, not weight or density) is important. The lower the number the better. That's one of the reasons transformer oil is better for transformers and dummy loads than drug store mineral oil - it has lower viscosity. The lower the viscosity the more easily convection currents transfer heat from the dummy load into the fluid and from the fluid to the can. That means lower thermal resistance, giving a lower resistor temperature for a given power dissipation.

73,
Bob AD3K

BOB wrote:
> is far motor oil (if you have to use it) use "nd 30" (or 40 ,20,50 the
> weight is not important) the "nd" is non detergent, to not dissolve carbon
>
> i tend to agree try to find an oil closer to what's "right"
>
> bob
>

--
Robert L. Spooner
Registered Professional Engineer
Associate Research Engineer
Intelligent Control Systems Department

Applied Research Laboratory Phone: (814) 863-4120
The Pennsylvania State University FAX: (814) 863-7841
P. O. Box 30
State College, PA 16804-0030 rls19@psu.edu

3083. Tarheel screwdriver Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 14:39:31 UTC
From: Bill Grimwood <bill@grimwood.net>
Message-ID: <vjkjct6vf9ld6f@corp.supernews.com>
Source record: 110725

I want to put a screwdrive on the back of a motorhome and have had the tarheel recommended to me. I have never heard of it or seen one. do any of you have experience with this antenna?

thanks in advance

Bill

W4WEG

3084. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 14:41:28 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308130641.40b82b3d@posting.google.com>
Source record: 110727

kelly@dvol.com (Brian Kelly) wrote in message
news:<d22b54c3.0308121558.1b959ff2@posting.google.com>...
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308110449.1e6d37e2@posting.google.com>...
> > Russ,
> > The point I am making is that some comments are repeated
> > so many times they take a life of their own
> > Think about it, the resistors of old are a far cry from
> > the carbon resistors of today which are not as porous,
> > if it is a worry then coat it with epoxy !
>
> And there goes the heat transfer characteristics of the
> purpose-designed/built resistors used for liquid cooled dummy loads.
>
> > Then there is the "rust" question, the paint cans of today
> > have a teflon liner !
>
> Paint cans are not resistors, they do not have to be surface-cooled
> and the reason for the coatings is the water in todays the water-based
> paints. Nobody I know uses water or latex paint in their dummy loads.
>
> > Even the latest ham data states that
> > motor oil CAN be used (no, it will not explode !) but raise
> > a question of "life", possibly a suggestive comment that you
> > change the oil every 5000 qso's.
> > Certainly industry gives a good guide as to what is the best
> > to use for their circumstances but it doesn't rule out every
> > thing else for all time, and this includes motor oil of which
> > there are many types.
>
> Maybe 50,000 qso's later with the 'ole Cantenna on the side I'm still
> running like new on drugstore mineral oil. Get back to us when your
> reserch indicates which motor oil beats mineral oil.
>
> Maybe ten years ago I had to wire brush, prime and repaint the can, it
> was rusting from the *outside*.
>
> > Regards
> > Art
>
> w3rv

Brian,
I have no wish for a fight.....

My responses were to the initial question,

"Can motor oil be used " and the correct answer is a
qualified YES

If you want to leave a KILOWATT active overnight then I
would certainly say NO.
I certaily would recommend the Teflon coated cans since
can seams can sometimes 'weep'when thin oils are used.
If viscosity is your main concern then additional
circulation methods will alleviate that in a way far
superior to that using the best known transformer oil
(ARRL shows a method of achieving this)
If resisters are your main worry
then use a couple of wire resisters with the windings
oriented in opposite fashion since absolute accuracy is
intended for real dummies.(Note resistors change value
over time even when not in hostile environments.)
Check the values on an old tube/valve reciever for yourself)
As a point of interest, have you considered what creates
the first point of failure, and why transformers housings
are built so mechanically strong ? Can you tell me at what
time the 'flash point ' comes into play when considering
it.s use for a dummy load ? These questions go to the very
point that I discussed i.e using industry methods as
pointers BUT with due reference to the different environnments
and duty cycles required with respect to cost and availability.

Regards
Art

3085. Re: Jpole tuning?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:04:11 UTC
From: arrow146@aol.com
Message-ID: <20030813110411.16575.00000329@mb-m25.aol.com>
Source record: 110728

<< Subject: Jpole tuning?
From: FrankW fworm@norpak.ca
Date: Wed, Aug 13, 2003 4:12 AM
Message-id: <3F3A1D06.6080003@norpak.ca>

Hello All
Considering using a Jpole antenna for 2 meters
I plan to mount it on top of a 40 ft tower
I've read that it should be tuned where it will
permantently reside, The area is in a big field on a hill
Can I just mount it on the top 10ft section, tune then
put it on the tower?
Any hints and tricks regarding tuning a jpole would
be great!
Thanks in advance
Regards >>

Use a J146/440 from <A HREF="http://ArrowAntennas.com/">ArrowAntennas.com</A>
then you
don't have to tune it, just put it up.
Also use if for 440 if you want.

73 Al Lowe N0IMW

3086. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:06:15 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308130706.1dbb1b8c@posting.google.com>
Source record: 110729
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

Dwight Stewart <stewartx@earthlinkNOSPAM.net> wrote in message
news:<BB5F6B88.222EA%stewartx@earthlinkNOSPAM.net>...
> "Dan/W4NTI" wrote:
> >
> > Go to your hardware store and buy a Aluminum
> > ladder. Clamp it to the side of the building
> > and guy as necessary.
>
>
> As described in a previous message, there isn't a lot of room for guy
> wires. The area is about two and a half feet wide - just enough room for a
> cement slab to support a small freestanding tower.

A shallow concrete slab will not support any tower unless the tower is
well bracketed to the house. There are only two choices: A large block
of concrete for the base or a slab with a house bracket.

> After that, there just
> isn't any room to run guy wires out very far. What there is (the building
> and a nearby fence) isn't going to provide a strong support for guy wires.

Use a mast made from steel pipe. I've used 'em several times, works
fine. Assume the bottom section of the mast is made from a full length
of standard 2.5" Schedule 40 galvanized steel pipe x 21 feet long. Top
the base section with a couple 10-12 foot lengths of smaller diameter
pipe and assemble the mast & antennas. Drive a five foot length of 3"
pipe into the ground, clean it out, raise the mast to a vertical
position and drop it into the 3" pipe. Bracketing might be optional
depending on the load vs. the stress & deflection calcs. No concrete
and only a few square inches of real estate req'd in either case. Will
not be "light" and the pipe will cost several hundred dollars.
Aluminum pipe would be 40% lighter but would be considerably more
expensive.

> Dwight Stewart (W5NET)

w3rv

3087. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:08:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3a55c4$1_5@corp.newsgroups.com>
Source record: 110730

Dr. Slick wrote:
> And i don't think you can expect the measured SWR with the meter
> and PA to be exactly the same as what you get with a small-signal
> analyzer. It's usually a bit different.

The actual conceptual SWR and the difficulty in measuring the SWR are two
different things. Low power level SWRs are difficult to measure because
of the diode voltage drops. Better to use a class-B amp for such where the
zero-crossing points are aligned.
--
73, Cecil http://www.qsl.net/w5dxp

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3088. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:18:17 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <j6lShSX5aIO$EASR@ifwtech.co.uk>
Source record: 110735

Dr. Slick wrote:
>"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
>news:<RVLuKBEAceO$EAnX@ifwtech.co.uk>...
>> >
>> Sorry, that is exactly wrong. S11, SWR and the impedance itself, do
>> *not* change when you connect a different instrument to the same load.
>> All the changes you have described are due entirely to instrument
>> errors.
>>
>> That's how the instrument errors are determined... by knowing for a fact
>> that, whatever all the different instruments may say, the impedance
>> they're trying to measure is the one thing that has *not* changed.
>
>
> You are right, but i never stated that the impedance we are
>feeding ever changes, only the measured SWR.
>
Oh dear... just when I thought it was safe to go back into the waves...

[On the other points, I'll reply to your second, corrected, posting.]

> How would you explain what Cecil wrote?

Who else but Cecil would dare attempt that? :-)

> How are some people
>improving SWR by changing coax length, when in theory they shouldn't
>be able to do this?
>
There are two possible reasons. One is instrument error - SWR meters are
not perfect.

The other possible reason is that the *outer* surface of the coax has
currents on it, so it has become part of the antenna. In that case,
changing the length of coax is not only changing the length of feedline
(the inner surfaces of the coax), but also is changing the antenna
itself. The voltage and current distributions on all the wires will
shift around, resulting in a different V, I and relative phase at the
top of the coax - in other words, a different feedpoint impedance. Then
the SWR (as measured on the *inside* of the feedline) genuinely will
change.

This SWR change is usually quite difficult to predict, because you
didn't mean there to be any current on the outer surface of the coax in
the first place. The only practical way to see if there could be a
problem is to use a clamp-on RF current meter to see how much surface

current is present.

If the SWR changes with feedline length *and* you have significant surface current, then you know one probable reason... but in all cases, these can also be instrument error in the SWR meter.

> Do you think the series reactance a system offers a PA may
>actually improve it's incident power?

To answer your exact question: I don't think there is a valid general answer. It depends on the specific PA design, and also on what you mean by "improve".

What I do know is that changes in the load impedance presented to a PA will change several of its operating conditions, all at the same time. Some of those changes will be "improvements" - but others definitely won't be.

For example, reducing the load impedance will usually make the output device operate in a more linear way... but the efficiency drops and the greater heat dissipation and current are likely to shorten the lifetime of the device. Is that an improvement?

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3089. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:23:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3a5926$1_5@corp.newsgroups.com>
Source record: 110732

Ian White, G3SEK wrote:
> The RF voltages are either summed or subtracted, and then the resultant
> is detected by the diode.

I know you know this, Ian, but let's make sure that everyone understands that the summation (or subtraction) is a phasor (vector) summation. It is the phasing between the total voltage and total current that allows the forward wave to be separated from the reflected wave, and vice versa. The directional coupler designer assumes that the ratio of Vfor/Ifor = Z0 and that the ratio of Vref/Iref = Z0. If that assumption is incorrect, the SWR meter will still assume that the assumption is correct.

> Just one small point, though... it is not necessary that R = Z0.

That's true and is just a habit on my part. I set R=Z0 and then adjust the voltage accordingly for calibration purposes. For awhile, I was using a 450 ohm load for ladder-line with a measured Z0 of 388 ohms. It still worked pretty well.

> AFAIK, the only situation where the "terminating" resistor truly needs
> to equal Z0 is in parallel-line couplers for microwaves, when the
> sampling line approaches a quarter-wavelength long and its own
> characteristic impedance is Z0 too.

In most of the slotted line pickups that I have seen, the internal load resistor is equal to the Z0 of the slotted line. I don't know if that is necessary or not.
--
73, Cecil http://www.qsl.net/w5dxp

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3090. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:30:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3a5ac5$1_5@corp.newsgroups.com>
Source record: 110733

Dr. Slick wrote:

> Roy Lewallen <w7el@eznec.com> wrote:
>>Sure, you can normalize a Smith chart to anything you'd like. That
>>doesn't make the SWR change with source impedance.
>>
> I disagree on this point. You are caught up in the 50 Ohm world,
> which i admit is easy to do. The SWR is based on the ratio of the
> forward to the reflected power. If you had an analyzer that was
> calibrated to 20 Ohms (the same as normalizing the Smith for 20 Ohms
> in the center) you would certainly have reflected power and high SWR
> going into a 50 Ohm load.

Not if the feedline has a Z0 of 50 ohms. The problem would be in believing
what you believe about what the 20 ohm SWR meter is trying to tell you.

It is trying to tell you that it is being misused but you are inferring
that it is trying to tell you the actual SWR. It is not.

> And a 20 Ohm load would have a 1:1 SWR.

Not if the feedline has a Z0 of 50 ohms. If a DC voltmeter gives an
erroneous reading for RF voltage, do you blame the voltmeter or the
user of the voltmeter?
--
73, Cecil http://www.qsl.net/w5dxp

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3091. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:32:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3a5b6e$1_5@corp.newsgroups.com>
Source record: 110734

Dr. Slick wrote:
> But the SWR is absolutely dependant on the source impedance.

The impedance for which the SWR meter is calibrated is NOT the
same thing as the source impedance. If you are using an SWR meter
calibrated for 20 ohms in a 50 ohm environment, you are misusing
the SWR meter.
--
73, Cecil http://www.qsl.net/w5dxp

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3092. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 15:37:32 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <wpUm1GZ8slO$EAQD@ifwtech.co.uk>
Source record: 110736

Dr. Slick wrote:
>"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
>news:<RVLuKBEAceO$EAnX@ifwtech.co.uk>...
>> Dr. Slick wrote:
>> > As you might know, the input S11 or SWR will change when you go
>> >from an antenna analyzer or network analyzer to measuring with the
>> >actual full power PA and meter hooked up. This may be partly due to
>> >the fact that the meter is usually not a perfect 50 ohm thru, and
>> >partly due to the fact that the analyzers outputs are closer to 50 ohms
>> >than the PA.
>> >
>> Sorry, that is exactly wrong. S11, SWR and the impedance itself, do
>> *not* change when you connect a different instrument to the same load.
>> All the changes you have described are due entirely to instrument
>> errors.
>>
>> That's how the instrument errors are determined... by knowing for a fact
>> that, whatever all the different instruments may say, the impedance
>> they're trying to measure is the one thing that has *not* changed.
>
>
> On second thought, i believe we are all wrong to equate S11 with
>SWR!
>
> Input S11 of a system will certainly never change. But the SWR
>is absolutely dependant on the source impedance.

No! SWR, S11, return loss, rho, Y-parameters, Z-parameters, etc, etc are all different derived functions of the same two variables: an arbitrary complex impedance, and the system reference impedance Z0 (a constant which may or may not be defined as complex).

Only those two variables are involved, so all of these functions are locked together. If one variable changes, all the derived functions change too. Either all change, or none change; nothing else is logically possible.

As Roy says, the equations relating any one of these parameters to any other are all well known. NONE of them ever involves source impedance.

> If you had a network
>analyzer calibrated for 20 Ohms, you would certainly have reflected
>power and high VSWR going into 50 Ohms, and a 1:1 SWR going into 20
>Ohms.
>

> This would be the same as re-normalizing the Smith Chart for 20
>Ohms in the center. You certainly can do this in MIMP.
>
> I don't blame anyone for believing it's a 50-Ohm-only world!

No argument about any of that... but it's a totally separate point that has no relevance whatever to your earlier statements about source impedance.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3093. Re: Tarheel screwdriver Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 16:05:12 UTC
From: Tom Brown N4TAB <tab@signalgrp.com>
Message-ID: <Ykt_a.36271$Pb7.643446@twister.southeast.rr.com>
Source record: 110737

Bill Grimwood wrote:
> I want to put a screwdrive on the back of a motorhome and have had the
> tarheel recommended to me. I have never heard of it or seen one. do any of
> you have experience with this antenna?
>
>
> thanks in advance
>
> Bill
>
> W4WEG
>
>

Here's the website: http://www.tarheelantennas.com/

Mine's been in service for a couple of years with no problems and
excellent performance, 80 through 10.

Tom N4TAB

(no involvement with Tarheel except as a customer)

3094. Weird Mobile Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 16:20:56 UTC
From: "Michael J. Donohue VE3YF" <mdonohue@sympatico.ca>
Message-ID: <mapkjvo1e36ka68753vd5a6io9bu0i4ms7@4ax.com>
Source record: 110738

Hi:
I have suddenly developed a weird mobile setup problem. When
my IC-706 is in the car and antenna (HF) is hooked up, everything is
all is ok ie swr. But when I hook up the ground wire from the frame of
the car to the ground post I now get get high swr. I have checked the
antenna system with an analyzer and it appears ok. Any idea's???

73 De Mike
VE3YF

3095. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 16:55:41 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308130855.21cc8951@posting.google.com>
Source record: 110739

Non-linear, or time variant. I'd expect some variation going between
low and high power with typical dummy loads, because the resistance
will change with temperature. In fact, the loss in the transmission
line will change with temperature, too, and it's significant enough to
be able to measure with ham-type equipment if you are careful. But
I'd FIRST suspect other things going on: different calibrations
between different instruments, and the fact that SWR meters that use
uncompensated diode detectors will not read the same SWR at low power
as at high: they will fail to read high enough at low powers.

The resistance of the copper in the transmission line changes with
temperature. If ambient is 20C and you put in enough power to heat up
the line (center conductor) to 70C, that's a 50C change, and will
result in about an 18% increase in resistance. So if you had a line
which had 3dB loss at 20C, it would increase to about 3.5dB at 70C.
If the load end has a 2:1 SWR, then the sending end will have about
1.40:1 SWR at 20C and about 1.35:1 at 70C. It's not a _big_ change,
but it should be observable on an SWR meter that is accurate over a
wide range of powers.

I want to make it clear that this is in support of what Roy and Ian
are saying, as an added detail, and not contrary to the notion that
SWR on a line in a linear, time-invariant system with steady-state
excitation does not depend on the source impedance.

Cheers,
Tom

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjjk8sr94jbd69@corp.supernews.com>...
> Dr. Slick wrote:
> >
> > As you might know, the input S11 or SWR will change when you go
> > from an antenna analyzer or network analyzer to measuring with the
> > actual full power PA and meter hooked up. This may be partly due to
> > the fact that the meter is usually not a perfect 50 ohm thru, and
> > partly due to the fact that the analyzers outputs are closer to 50
> > ohms than the PA.
>
> If S11 or the SWR actually does change, you've either got a nonlinear
> transmission line or a nonlinear load. That is, the impedance changes as
> the signal level changes. If you *measure* a different SWR or S11, it
> means that either the SWR or S11 is actually changing for the reasons I
> just stated, or the meter is nonlinear in the sense that its reading
> changes with power level (possibly due to RF ingress, but it could be a
> host of other things), or you're measuring with two different meters

> that don't agree.
>
> It's not because of the different source impedances.
>
> Sure, you can normalize a Smith chart to anything you'd like. That
> doesn't make the SWR change with source impedance.
>
> >. . .
>
> Roy Lewallen, W7EL

3096. FS: Army 3KW Generator, needs work, $50 central Texas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 17:07:26 UTC
From: thedeuceguy@sbcglobal.net
Message-ID: <f84ce68c.0308130907.38149f96@posting.google.com>
Source record: 110740

Get it out of the back of my truck! I got it in a package deal and have little or no mechanical ability. Will take almost anything on trade (except ham stuff as I'm not a ham. Locals know me as The Battery Guy.)

Here's a link for pics on the generator:

http://f1.pg.briefcase.yahoo.com/bc/thedeuceguy@sbcglobal.net/lst?&.dir=/My+Photos/Genset+for+sale&.src=bc&.view=t&.begin=1&.order=&.done=http%3a//f1.pg.briefcase.yahoo.com/bc/thedeuceguy@sbcglobal.net/lst%3f%26.dir=/My%2bPhotos/Genset%2bfor%2bsale%26.src=bc%26.view=t

On further exam of the engines, both are missing a small downdraft carb but otherwise look like you'd have the parts from one to repair the damage to the other. from the tags on the engine it would appear to have just been rebuilt in '93 and then damaged, maybe by a forklift, and then scrapped. Most damage seems to be to the coolings shrouds.The oil looks brand new and the engine and gen turns (the spare engine does not, but I did not have much leverage).

4 cylinder engine, also have an extra engine. Cage a little bent up, Not for the faint of heart but would make a very nice genset if you know what you are doing. I will consider trading for almost anything (NO recreational pharmaceuticals please). I got this genset yesterday as part of a package and am keeping the little genset. I'll trade for a gun (maybe with some cash for the right one), a 21" monitor, a cruiser type bicycle or mountain bike, heck, just about anything!

Jeff
Temple
254/791-2340

3097. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 17:23:14 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308130923.28f1eccd@posting.google.com>
Source record: 110741

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308130628.138177d9@posting.google.com>...

> On second thought, i believe we are all wrong to equate S11 with
> SWR!

(Of course they are not equal, just related by a formula [which is
usually stated slightly incorrectly])

If your reference impedance for measuring S11 is not the line
characteristic impedance, it's true that SWR = (1+|S11|)/(1-|S11)
won't give you the right answer. But then you haven't really measured
the reflection coefficient on the line, if you've used the wrong
reference impedance, since reflection coefficient is _defined_ as
reverse voltage divided by forward voltage. All this is right at the
heart of why I've been telling you that you should make sure your SWR
meter is calibrated to the impedance you think it is, and in
particular, to the line impedance (or close to that) if you really
want to know the SWR on the line. On the other hand, knowing measured
S11 and the reference impedance for it, and the line characteristic
impedance, you can determine the SWR on that line. But your "SWR"
meter isn't really an S11 meter; at best it's a |S11| meter.

This also brings up another point: do YOU define S11 to be the same
as reflection coefficient?

Cheers,
Tom

3098. Re: double sized quad antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 17:25:44 UTC
From: Brian Howie <brian@nospam.demon.co.uk>
Message-ID: <7YeOLTAYSnO$EwCu@b-howie.demon.co.uk>
Source record: 110742

In message <b0ce6aad.0308110842.28db8939@posting.google.com>, W8EJO
<rfmscpa@earthlink.net> writes
>Brian
>
>See ARRL Antenna Compendiums Vol 5, pg 55 & Vol 6, pg 227 for
>construction articles. Claimed gain is approx. 2dbd over 1 wl quads &
>2.5 dbd over yagis with same boom length.
>
>Terry
>W8EJO
>
>Brian Howie <brian@nospam.demon.co.uk> wrote in message
>news:<+lLfUOBDAqN$EwJB@b-howie.demon.co.uk>...
>> I recall many years ago seeing a 3 ele quad antenna in one of the RSGB
>> handbooks. Instead of the usual 1 lambda loops it used 2 lambda and had
>> an open circuit at the top of each element -it may also have been fed by
>> a 1/4 matching transformer. The claimed gain was high. Does anyone have
>> any info ?

Thanks, I'll see if I can find a copy of the ARRL Antenna Compendium.
Does the antenna have a name so that I can do a search for it on the
web?

Brian GM4DIJ

--
Brian Howie

3099. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 17:38:47 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308130938.2136f248@posting.google.com>
Source record: 110743

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f2c7e02_3@corp.newsgroups.com>...
> WB3FUP (Mike Hall) wrote:
> > Actually only the morse operators will have half a
> > chance of operating if the BPL goes through. They
> > need the least amount of signal to be able to
> > communicate.
>
> Actually, PACTOR II gets through when I can't even hear
> the CW ID signals.

Cecil,
The most important aspect of all this is, if it is accepted
what would be the new emmission standards in Industry?
I can imagine a lot of users of RF driers will be happy
with the minimising of restrictions as well as other
manufacturers and users of such equipment.
Medical costs will also rise since equipment
used will now have to face new challenges.
The FCC got into hot water very quickly with their last
actions with Congress which also raised the ire of many others.
I doubt that they would be willing to follow the path of money
on this one because the cost related to required determinations
thru out Industry will fall on their own department.
They must also realise that numbers DO count with Congress since
looking after the Countries interests is NOT the first priority,
personal re-election is ahead of EVERY thing.
Haven't seen any statistics yet as to why Japan threw out the idea
or the timing of the same proposal in the U.K./EEC.
If the ARRL is so desparate for money maybe a short term membership
scheme would be in order, say $2 for a years subsciption to QST
without the last 2/3 s of the publication being offered!
Regards
Art

3100. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 17:47:14 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308130947.59856b03@posting.google.com>
Source record: 110744

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308122015.33d8fd9@posting.google.com>...

> The problem is characterizing insertion loss using higher power
> transmitters, when we know that the 1000 watt cantenna swings from 40
> to 70 Ohms (with reactance too) as you get above 80 megs or so. It
> become difficult to know if you are moving in the right direction or
> not.

So if you have 200 feet of RG-213 and 200 feet of RG-58, put those in series to the cantenna. Coil them loosely and cool them with a fan if needed, if you are running high power (or start the chain with larger coax). That should get you close to 15dB attenuation in the coax at 100MHz and a 1.02:1 or better SWR at the input end for a 2:1 SWR at the cantenna. At lower frequencies where the line loss is lower, the cantenna is good enough that you don't need the line loss as compensation. Do I have you worried about what the actual impedance of the coax is from earlier postings? If so, good! Now you're in a position to think about what's good enough, and measure what you have to see if it meets the desired goals.

If that's all too kludgey for you, go buy a good load. Or just tune the cantenna for bands of interest. You could make a set of small boxes with L networks, each of which compensates the cantenna on a particular band. Or look up one of the articles about how to make a better "cantenna", probably starting with the parts you have. There are lots of options. Why settle for a setup which will only lead you deeper into confusion? Short of really precision measurements, there's a lot you can do trading off time and careful thought for the high cost of commercial equipment.

Cheers,
Tom

3101. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 17:54:40 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308130954.6d4883d0@posting.google.com>
Source record: 110745

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjj7tdihjeqf4a@corp.supernews.com>...

> I stand by my statement.

I, and I'm sure many others, likely including the authors of certain
cited papers, stand beside you.

Cheers,
Tom

3102. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 19:24:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjl44b15a2nbf2@corp.supernews.com>
Source record: 110746

Tom Bruhns wrote:
>
> So if you have 200 feet of RG-213 and 200 feet of RG-58, put those in
> series to the cantenna. Coil them loosely and cool them with a fan if
> needed, if you are running high power (or start the chain with larger
> coax). . .

One thing to keep in mind when you use coax as an attenuator or dummy load is that the portion of the cable nearest the transmitter dissipates most of the power. If you had, say, 6 dB per 100 ft attenuation and a 200 ft cable, the first 50 ft dissipate 1/2 the power (and that's concentrated toward the transmitter end), the next 50 ft dissipate 1/4 the power, the next 50 ft 1/8, and the final 50 ft 1/16. So do as Tom says and put the heavier coax up front, and allow for more air circulation for the coax nearest the transmitter if dissipation becomes a problem.

Roy Lewallen, W7EL

3103. Re: Weird Mobile Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 19:44:51 UTC
From: Fred <peerenbf@dma.org>
Message-ID: <Pine.LNX.4.44.0308131544210.8267-100000@dmapub.dma.org>
Source record: 110747

On Wed, 13 Aug 2003, Michael J. Donohue VE3YF wrote:

> Hi:
> I have suddenly developed a weird mobile setup problem. When
> my IC-706 is in the car and antenna (HF) is hooked up, everything is
> all is ok ie swr. But when I hook up the ground wire from the frame of
> the car to the ground post I now get get high swr. I have checked the
> antenna system with an analyzer and it appears ok. Any idea's???
>
> 73 De Mike
> VE3YF
>
>
Check the coax ground at the antenna end.

Fred KE8TQ

--

3104. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 20:06:38 UTC
From: N2EY@AOL.COM
Message-ID: <c2356669.0308131206.881b198@posting.google.com>
Source record: 110748

"John" <my-callsign@qsl.net> wrote in message
news:<rN3Za.1074$r21.83626@newsfep2-gui.server.ntli.net>...
> Does coax have a shelf life?
>
> I was rummaging around my father's garage the other day and came across a
> roll of URM43 that I know to be over 20 years old. It looks OK and the
> copper is shiny. However, can I be confident that it will not have lost any
> of its electrical or physical properties?

1) Build, beg, borrow or buy a decent wattmeter and dummy load of the
characteristic Z of the cable.

2) Connect the output of your rig to the dummy load through the cable
to be tested. Put the wattmeter between the rig and cable to be
tested. Measure power on the highest band.

3) Move the wattmeter so that it is between the cable to be tested and
the dummy load. Measure power on the highest band (don't change
anything else!)

Difference is loss at the highest band when matched. A little math
will give you the answer in dBs.

73 de Jim, N2EY

3105. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 20:50:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3aa5e3_4@corp.newsgroups.com>
Source record: 110749

Ian White, G3SEK wrote:
> Dr. Slick wrote:
>> How would you explain what Cecil wrote?
>
> Who else but Cecil would dare attempt that? :-)

In my example, the SWR on the ladder-line is not changing (except for losses in the ladder-line). Changing the length of the ladder-line changes the 50 ohm SWR meter *reading*, i.e. it changes the impedance seen by the transmitter.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 80,000 Newsgroups - 16 Different Servers! =-----

3106. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 21:02:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3aa8a9_4@corp.newsgroups.com>
Source record: 110750

Tom Bruhns wrote:
> On the other hand, knowing measured
> S11 and the reference impedance for it, and the line characteristic
> impedance, you can determine the SWR on that line.

That's true for a one-port load but not usually true for a two-port
impedance discontinuity in the transmission line.

> This also brings up another point: do YOU define S11 to be the same
> as reflection coefficient?

S11 is the (physical) reflection coefficient when a2 equals zero. When
a2 is not zero, the physical reflection coefficient, S11, will not usually
equal the measured reflection coefficient, the square root of Pref/Pfwd.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 80,000 Newsgroups - 16 Different Servers! =-----

3107. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 21:31:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlbh78a3k9md1@corp.supernews.com>
Source record: 110751

Dr. Slick wrote:
> . . .
> How would you explain what Cecil wrote? How are some people
> improving SWR by changing coax length, when in theory they shouldn't
> be able to do this?

The observation that changing line length changes the measured SWR is regularly reported in this newsgroup, and the explanation is as regularly provided.

There are at least three ways this can happen.

1. The SWR meter is designed for an SWR that's different from the line impedance. It's easy to show that this will result in different readings for different line lengths. I've measured RG-58 at over 60 ohms characteristic impedance, so this can happen even with a perfect 50 ohm SWR meter and "50 ohm" line. In this case, changing line length isn't really changing the line's SWR, just the meter reading.

2. There's significant loss in the cable. In that case, the longer the distance between the meter and the load, the better the SWR.

3. There's current on the outside of the coax. This means that the outside of the transmission line is actually part of the antenna. When you change its length, it changes the effective length of the antenna, which really does change the SWR. Current on the outside of the cable can also get into a poorly shielded SWR meter and modify its reading.

And this is all in agreement with established theory. So you see, theory does say you can change the SWR reading, and in some cases, the actual SWR, by changing the coax length. But only under very specific circumstances. When observations don't match theory, chances are overwhelming high that either the observation is erroneous or misinterpreted, or theory is being misapplied.

Roy Lewallen, W7EL

3108. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 21:46:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7i9ljv8vnpi3ocid28pc82s2o95dklqlu0@4ax.com>
Source record: 110752

On Tue, 12 Aug 2003 19:17:16 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>I haven't seen your data, but

Hi Roy,

Such a study in peer review.

My correspondence in this thread replies directly to the subject
offered, and presents confirmatory evidence of the original author's
observation. I have presented method (before this thread was started)
that matches the author's problem. I have presented authoritative
sources that predict such behavior. I have presented data (again,
predating this topic) that conforms to those sources. I have
presented reason (long established theory) which explains the genesis
of the original author's predicament:
"The limits of uncertainty are obtained by evaluating
(1 ï¿½ |SourceGamma| |LoadGamma|)ï¿½
since SourceGamma and LoadGamma are complex
quantities."

You may find simpler expressions, or formula, that provide a neater
solution in the face of a matched source; but this does not answer the
subject line above.

73's
Richard Clark, KB7QHC

3109. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 21:50:29 UTC
From: jder8745@aol.com
Message-ID: <20030813175029.13432.00000332@mb-m27.aol.com>
Source record: 110753

Roy Lewallen, W7EL sed...

"The transmitter output impedance has no effect whatsoever on the line's SWR."

Of course.

Good grief, is there still someone out there who does not know this???

Jack K9CUN

3110. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 22:28:17 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhee21edb1@titan.btinternet.com>
Source record: 110754

```
--
=======================
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
=======================
"JDer8745" <jder8745@aol.com> wrote in message
news:20030813175029.13432.00000332@mb-m27.aol.com...
> Roy Lewallen, W7EL sed...
>
> "The transmitter output impedance has no effect whatsoever on the line's
SWR."
> ---------------------------------------------
>
> Good grief, is there still someone out there who does not know this???
---------------------------------------------

Here comes the $64,000 question . . . . Of what possible use is the SWR
when they think they've got it ???
```

3111. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 22:28:50 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <pLDANroiurO$EAxJ@ifwtech.co.uk>
Source record: 110755

Richard Clark wrote:
> "The limits of uncertainty are obtained by evaluating
> (1 ï¿½ |SourceGamma| |LoadGamma|)ï¿½
> since SourceGamma and LoadGamma are complex
> quantities."

That is the mismatch uncertainly between a source impedance and a load impedance.

SWR on a transmission line connecting the source and load impedance is a totally separate quantity, determined only by the load impedance and Z0. (Z0 may be defined as either the line impedance, or the system reference impedance; either definition is valid, provided you state which one you're using and calculate accordingly).

(And always in a linear, time-invariant system, as Tom points out...)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3112. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 22:38:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <91fljvke4natjcf9s4cpqslm6fqagl6r3q@4ax.com>
Source record: 110756

On Wed, 13 Aug 2003 23:28:50 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>Richard Clark wrote:
>> "The limits of uncertainty are obtained by evaluating
>> (1 ï¿½ |SourceGamma| |LoadGamma|)ï¿½
>> since SourceGamma and LoadGamma are complex
>> quantities."
>
>That is the mismatch uncertainly between a source impedance and a load
>impedance.

Hi Ian,

As this has been stated by me, explicitly, through several rounds by
now, just what point are you offering that casts a new light on the
discussion?

Do you have anything to offer in regard to actual methods performed,
data obtained, the offered references that predict them, and their
correlation to the subject of this thread?

73's
Richard Clark, KB7QHC

3113. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 22:43:09 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <PvScnfV_2NiaIqeiXTWJiw@crocker.com>
Source record: 110757

where does that come from?

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bhc1e1$oo0$1@hercules.btinternet.com...
> For anyone who may be interested.
>
> Typical of RG-58 and RG-11 type cables.
> Zo = Ro - jXo
> Xo is always negative.
> Angle of Zo in degrees. Always negative.
> VF = relative velocity.
>
> Freq Ro jXo Angle VF
> ------ ------ ------ ------ ------
> 50 Hz 967 -965 -44.95 0.034
> 1 kHz 220 -213 -44 0.151
> 10 kHz 80 -58 -36 0.41
> 100 kHz 56 -9.3 -9.5 0.59
> 1 MHz 52.4 -2.4 -2.7 0.63
> 10 MHz 50.7 -0.76 -0.86 0.65
> 100 MHz 50.2 -0.23 -0.27 0.66
>
> Smith Chart calculations begin to be inaccurate around 2 MHz and below.
So
> do SWR meters.
>
>

3114. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 22:47:15 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bhef87ket1@slb5.atl.mindspring.net>
Source record: 110758

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vjip3grrrgm27e@corp.supernews.com...
> Hm, I've used WD-40 on everything from 115 VAC power switches to VHF
> slug-tuned inductors, potentiometers, and relay contacts. Whatever
> conductivity it might have, hasn't been a problem for me. I wouldn't use
> it on 100 meg level impedances, but more from worry that it would pick
> up dirt and grunge.
>
> What sort of experiment can you suggest that will demonstrate and
> perhaps allow measurement of its conductivity?
>
> Roy Lewallen, W7EL
>
> Dan/W4NTI wrote:
> > WD-40 is somewhat conductive. So be careful of it around insulated
parts.
> >
> > Dan/W4NTI
>

I seen a dumbarsed backyard mechanic spray it on his AM car radio chasis
(inside) to 'clean out the bugs and stuff'.

Never worked again.

So I don't use it on electronics.

Dan/W4NTI

3115. Re: Weird Mobile Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 22:59:53 UTC
From: "Michael J. Donohue VE3YF" <mdonohue@sympatico.ca>
Message-ID: <4jgljv8u0loli64healv8723ki3drp7uaq@4ax.com>
Source record: 110761

Hi:
Probably beneficial to clarify something, the antenna is a Hustler
attached to a 3 magnet mount type system. This type of system has
no physical ground, only capactive type ground.

73 De Mike
VE3YF

On Wed, 13 Aug 2003 16:20:56 +0000, Michael J. Donohue VE3YF
<mdonohue@sympatico.ca> wrote:

>Hi:
> I have suddenly developed a weird mobile setup problem. When
>my IC-706 is in the car and antenna (HF) is hooked up, everything is
>all is ok ie swr. But when I hook up the ground wire from the frame of
>the car to the ground post I now get get high swr. I have checked the
>antenna system with an analyzer and it appears ok. Any idea's???
>
>73 De Mike
>VE3YF
>

3116. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:01:13 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308131501.70ea090f@posting.google.com>
Source record: 110759

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308130938.2136f248@posting.google.com>...
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f2c7e02_3@corp.newsgroups.com>...
> > WB3FUP (Mike Hall) wrote:
> > > Actually only the morse operators will have half a
> > > chance of operating if the BPL goes through. They
> > > need the least amount of signal to be able to
> > > communicate.
> >
> > Actually, PACTOR II gets through when I can't even hear
> > the CW ID signals.
>
> Cecil,
> The most important aspect of all this is, if it is accepted
> what would be the new emmission standards in Industry?
> I can imagine a lot of users of RF driers will be happy
> with the minimising of restrictions as well as other
> manufacturers and users of such equipment.
> Medical costs will also rise since equipment
> used will now have to face new challenges.
> The FCC got into hot water very quickly with their last
> actions with Congress which also raised the ire of many others.
> I doubt that they would be willing to follow the path of money
> on this one because the cost related to required determinations
> thru out Industry will fall on their own department.
> They must also realise that numbers DO count with Congress since
> looking after the Countries interests is NOT the first priority,
> personal re-election is ahead of EVERY thing.
> Haven't seen any statistics yet as to why Japan threw out the idea

Try this: http://www.arrl.org/tis/info/HTML/plc/#Amateur_Interference_Studies

> or the timing of the same proposal in the U.K./EEC.
> If the ARRL is so desparate for money maybe a short term membership
> scheme would be in order, say $2 for a years subsciption to QST
> without the last 2/3 s of the publication being offered!
> Regards
> Art

w3rv

3117. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:06:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlh3t6j086v99@corp.supernews.com>
Source record: 110760

Dr. Slick wrote:
>
> I disagree on this point. You are caught up in the 50 Ohm world,
> which i admit is easy to do. The SWR is based on the ratio of the
> forward to the reflected power.

That's not correct. The SWR (more correctly VSWR) is, by definition, the ratio of the highest to lowest voltages which appear on a line long enough to have both a maximum and minimum. It can be calculated from the forward and reverse voltage waves. ISWR, the current standing wave ratio, is numerically equal to the VSWR.

If you had an analyzer that was
> calibrated to 20 Ohms (the same as normalizing the Smith for 20 Ohms
> in the center) you would certainly have reflected power and high SWR
> going into a 50 Ohm load.
>
> And a 20 Ohm load would have a 1:1 SWR.
>
Loads do not have an SWR, only transmission lines do. The fact that you get a reading on an SWR meter when it's connected to a resistor doesn't alter that.

You have to realize that an SWR meter isn't really measuring SWR, as Reg has repeatedly pointed out. It's actually measuring an impedance, and reporting that on a scale marked SWR. So you have to be careful to avoid making the mistake of confusing an SWR meter reading with the SWR on a cable it's connected to. The two correspond only if the cable's Z0 equals the SWR meter's.

Likewise, you have to realize that you don't change the SWR or "reflected power" when you change the normalization of your network analyzer or Smith chart. Those things are a function only of the load and transmission line impedance, not on your measurements or calculations.

Roy Lewallen, W7EL

3118. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:09:27 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlh9aqq947he7@corp.supernews.com>
Source record: 110762

Dr. Slick wrote:
>
> On second thought, i believe we are all wrong to equate S11 with
> SWR!
>
> Input S11 of a system will certainly never change. But the SWR
> is absolutely dependant on the source impedance.

I give up. People will believe what they want to believe, no matter what -- it's like arguing religion. But I hope some of the lurkers have learned that SWR is independent of source impedance, even if some of the active posters just can't seem to.

>. . .

Roy Lewallen, W7EL

3119. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:13:13 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlhgchtvc0u40@corp.supernews.com>
Source record: 110763

Believe me, Ian, I know how frustrating it can get. But remember all the lurkers out there who benefit from your insightful postings. Please keep it up -- it is worth while. For their sake.

Roy Lewallen, W7EL

Richard Clark wrote:
> On Wed, 13 Aug 2003 23:28:50 +0100, "Ian White, G3SEK"
> <G3SEK@ifwtech.co.uk> wrote:
>
>
>>Richard Clark wrote:
>>
>>> "The limits of uncertainty are obtained by evaluating
>>> (1 ï¿½ |SourceGamma| |LoadGamma|)ï¿½
>>> since SourceGamma and LoadGamma are complex
>>> quantities."
>>
>>That is the mismatch uncertainly between a source impedance and a load
>>impedance.
>
>
> Hi Ian,
>
> As this has been stated by me, explicitly, through several rounds by
> now, just what point are you offering that casts a new light on the
> discussion?
>
> Do you have anything to offer in regard to actual methods performed,
> data obtained, the offered references that predict them, and their
> correlation to the subject of this thread?
>
> 73's
> Richard Clark, KB7QHC

3120. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:16:48 UTC
From: Fred <peerenbf@dma.org>
Message-ID: <Pine.LNX.4.44.0308131904010.15314-100000@dmapub.dma.org>
Source record: 110764

For all of you that don't think the interferance is going to be "not so bad" even in CW, should come to Dayton, Ohio or any other city that still runs electric trolly lines and listen to the S-9 +40 signal that the 400 hertz trolly lines produce, and you can here it on a mobile reciever up to 2000 feet from the lines, especially when a trolly is in the area and moving. It cost money to fight the big money in DC, the power companies have an almost unlimited purse into which we the consumers have to keep pouring cash. They can hire the most costly lobbiest groups around for their cause. I run CW, PSK, RTTY and SSB here and it will really wipe out any and all signals on all bands, especially in wet and foggy weather, you guys better think again about simply bashing the ARRL about wanting money to fight this, or just sell your rigs now and buy stock in the power companies that will be polluting the RF spectrum from DC to Daylight with a bunch of noise that sounds like a geiger counter gone nuts in an uranium deposit. If the power companies get their way HF amateur radio will cease to exist as we know it. As I said, come to Dayton for the Hamvention next year and I will challenge you to do any HF work any were near an elelctric trolly line. Or just drive near any high tension power line and listen to the S-9 + noise levels from them, and with no broad spectrum data streams on them yet. The power companies have the FCC chair in their pockets guys and the power companies won't lift a finger now to clean up their act. What do you think they will tell you when BPL wipes out you Ham radio and other RF spectrums. You guessed it, they will tell you to go away and shut up as the FCC says that they have the right to do it.......

Fred KE8TQ
XYL Lorraine KC8HWV

On 13 Aug 2003, Brian Kelly wrote:
> aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308130938.2136f248@posting.google.com>...
> > W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f2c7e02_3@corp.newsgroups.com>...
> > > WB3FUP (Mike Hall) wrote:
> > > > Actually only the morse operators will have half a
> > > > chance of operating if the BPL goes through. They
> > > > need the least amount of signal to be able to
> > > > communicate.
> > >
> > > Actually, PACTOR II gets through when I can't even hear
> > > the CW ID signals.
> >
> > Cecil,
> > The most important aspect of all this is, if it is accepted
> > what would be the new emmission standards in Industry?

> > I can imagine a lot of users of RF driers will be happy
> > with the minimising of restrictions as well as other
> > manufacturers and users of such equipment.
> > Medical costs will also rise since equipment
> > used will now have to face new challenges.
> > The FCC got into hot water very quickly with their last
> > actions with Congress which also raised the ire of many others.
> > I doubt that they would be willing to follow the path of money
> > on this one because the cost related to required determinations
> > thru out Industry will fall on their own department.
> > They must also realise that numbers DO count with Congress since
> > looking after the Countries interests is NOT the first priority,
> > personal re-election is ahead of EVERY thing.
> > Haven't seen any statistics yet as to why Japan threw out the idea
>
> Try this: http://www.arrl.org/tis/info/HTML/plc/#Amateur_Interference_Studies
>
>
> > or the timing of the same proposal in the U.K./EEC.
> > If the ARRL is so desparate for money maybe a short term membership
> > scheme would be in order, say $2 for a years subsciption to QST
> > without the last 2/3 s of the publication being offered!
> > Regards
> > Art
>
> w3rv
>

--

3121. 2m 9 Element Tonna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:21:54 UTC
From: John <john@vhfdx.idps.co.uk>
Message-ID: <3f3ac755_2@mk-nntp-2.news.uk.tiscali.com>
Source record: 110765

Do the 2m 9 element Tonnas have insulated reflectors/directors or are they electrically grounded to the boom?

Thanks

John, G1ARI

3122. Re: Weird Mobile Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:23:55 UTC
From: Fred <peerenbf@dma.org>
Message-ID: <Pine.LNX.4.44.0308131921040.15314-100000@dmapub.dma.org>
Source record: 110766

On Wed, 13 Aug 2003, Michael J. Donohue VE3YF wrote:

> Hi:
> Probably beneficial to clarify something, the antenna is a Hustler
> attached to a 3 magnet mount type system. This type of system has
> no physical ground, only capactive type ground.
>
> 73 De Mike
> VE3YF
>
>
>
> On Wed, 13 Aug 2003 16:20:56 +0000, Michael J. Donohue VE3YF
> <mdonohue@sympatico.ca> wrote:
>
> >Hi:
> > I have suddenly developed a weird mobile setup problem. When
> >my IC-706 is in the car and antenna (HF) is hooked up, everything is
> >all is ok ie swr. But when I hook up the ground wire from the frame of
> >the car to the ground post I now get get high swr. I have checked the
> >antenna system with an analyzer and it appears ok. Any idea's???
> >
> >73 De Mike
> >VE3YF
> >
>
>
Still either ground the mag mount to the vehicle or don't ground the rig,
otherwise you have a situation that I have run in to myself a few times,
with the ground on the rig and not on the antenna mount the SWR was out of
sight, with both grounded, or both ungrounded the SWR was just fine.
Fred KE8TQ
73
--

3123. Re: Weird Mobile Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:25:43 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjli7s18dd3p28@corp.supernews.com>
Source record: 110767

Are you saying that the antenna system, with the ground wire connected, looks ok with an analyzer but not the rig's SWR meter? If so, I'd guess that the ground wire is causing a current that's getting into the rig. You might try putting out four or so wires spaced evenly around the car, each to its own ground rod, to force the current to flow more or less symmetrically from the antenna base downward, as it was without the wire -- if that's practical. There are also some things you could do to isolate the rig from stray currents, such as putting common mode chokes on the feedline and power wires, and possibly isolating the rig from the car chassis. But that might be more trouble than it's worth.

Roy Lewallen, W7EL

Michael J. Donohue VE3YF wrote:
> Hi:
> Probably beneficial to clarify something, the antenna is a Hustler
> attached to a 3 magnet mount type system. This type of system has
> no physical ground, only capactive type ground.
>
> 73 De Mike
> VE3YF
>
>
>
> On Wed, 13 Aug 2003 16:20:56 +0000, Michael J. Donohue VE3YF
> <mdonohue@sympatico.ca> wrote:
>
>
>>Hi:
>> I have suddenly developed a weird mobile setup problem. When
>>my IC-706 is in the car and antenna (HF) is hooked up, everything is
>>all is ok ie swr. But when I hook up the ground wire from the frame of
>>the car to the ground post I now get get high swr. I have checked the
>>antenna system with an analyzer and it appears ok. Any idea's???
>>
>>73 De Mike
>>VE3YF
>>
>
>

3124. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:26:46 UTC
From: Sylvan Butler <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbjli9m.itf.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 110768

On Tue, 12 Aug 2003 15:04:36 -0700, Roy Lewallen <w7el@eznec.com> wrote:
> Hm, I've used WD-40 on everything from 115 VAC power switches to VHF
> slug-tuned inductors, potentiometers, and relay contacts. Whatever
> conductivity it might have, hasn't been a problem for me. I wouldn't use
> it on 100 meg level impedances, but more from worry that it would pick
> up dirt and grunge.
>
> What sort of experiment can you suggest that will demonstrate and
> perhaps allow measurement of its conductivity?
>
> Roy Lewallen, W7EL
>
> Dan/W4NTI wrote:
>> WD-40 is somewhat conductive. So be careful of it around insulated parts.

And I've used WD-40 in and around ignition components on several
engines and fired things up a LOT better than with the water that
was previously there.

I suspect WD-40 conducts no better than white kerosene.

sdb

--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral
busybodies. The robber baron's cruelty may sometimes sleep, his
cupidity may at some point be satiated; but those who torment us for our
own good will torment us without end, for they do so with the approval
of their consciences. -- C. S. Lewis

3125. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:44:23 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308131544.2c6521be@posting.google.com>
Source record: 110669

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f3a5b6e$1_5@corp.newsgroups.com>...
> Dr. Slick wrote:
> > But the SWR is absolutely dependant on the source impedance.
>
> The impedance for which the SWR meter is calibrated is NOT the
> same thing as the source impedance. If you are using an SWR meter
> calibrated for 20 ohms in a 50 ohm environment, you are misusing
> the SWR meter.

Agreed. Then any mismatch loss from PA to the 50 ohm coax is
never measured at the meter. So we never really measure the reflected
power coming right out of the PA, even if we attach the meter directly
to it's output.

Slick

3126. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:55:31 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <QaicnYRKk_kOTaeiXTWJiA@ctc.net>
Source record: 110671

>
> I give up. People will believe what they want to believe, no matter what
> -- it's like arguing religion. But I hope some of the lurkers have
> learned that SWR is independent of source impedance, even if some of the
> active posters just can't seem to.
>
> >. . .
>
> Roy Lewallen, W7EL

After the first two replies on a question it is usually beter to give up.
Right or wrong one just can not win.

I have not seen a whole lot of equations on SWR but the few I have seen
never mention the source at all.

3127. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-13 23:55:41 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308131555.238e16f0@posting.google.com>
Source record: 110670

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<wpUm1GZ8slO$EAQD@ifwtech.co.uk>...
> >
> > Input S11 of a system will certainly never change. But the SWR
> >is absolutely dependant on the source impedance.
>
> No! SWR, S11, return loss, rho, Y-parameters, Z-parameters, etc, etc are
> all different derived functions of the same two variables: an arbitrary
> complex impedance, and the system reference impedance Z0 (a constant
> which may or may not be defined as complex).
>

Correct, but it doesn't have to be 50 Ohms.

> Only those two variables are involved, so all of these functions are
> locked together. If one variable changes, all the derived functions
> change too. Either all change, or none change; nothing else is logically
> possible.
>

How about a 50 Ohm resistor, which is always 50 Ohms (impedance
doesn't change), fed with 20 ohms? Or 75?

Cecil is correct in saying that the SWR meter would then have to
be designed for 20 or 75 ohms, but that is beside the point.

SWR doesn't have to be strictly 50 ohms, and will involve TWO
impedances. If your source doesn't match your reference impedance
(normalized center of Smith Chart), then you won't be measuring the
reflected power coming right off the source.

And because most PA are not 50 ohms output, and most SWR meters
are 50 Ohms, there is problem.

> As Roy says, the equations relating any one of these parameters to any
> other are all well known. NONE of them ever involves source impedance.
>
>

Assuming the source impedance is 50 ohms, which it usually isn't
with most PAs.

> > If you had a network
> >analyzer calibrated for 20 Ohms, you would certainly have reflected
> >power and high VSWR going into 50 Ohms, and a 1:1 SWR going into 20
> >Ohms.
> >

> > This would be the same as re-normalizing the Smith Chart for 20
> >Ohms in the center. You certainly can do this in MIMP.
> >
> > I don't blame anyone for believing it's a 50-Ohm-only world!
>
> No argument about any of that... but it's a totally separate point that
> has no relevance whatever to your earlier statements about source
> impedance.

it's very relevant if you consider the port on a network analyzer
to be 50 ohms or not... It should be, but your PA may be quite far
off.

Slick

3128. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:04:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <t7kljv0mcdo4ft9irohlni6hjldvtpo3lf@4ax.com>
Source record: 110672

On Wed, 13 Aug 2003 16:13:13 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Believe me, Ian, I know how frustrating it can get. But remember all the
>lurkers out there who benefit from your insightful postings. Please keep
>it up -- it is worth while. For their sake.
>
>Roy Lewallen, W7EL

Hi Roy,

It is nice of you to commend Ian to continue the good effort. Why
didn't you do it directly instead of posting him through me? Are the
lurkers to take some lesson by this breach of netiquette? :-)

73's
Richard Clark, KB7QHC

3129. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:07:06 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <KoA_a.95484$Oz4.22831@rwcrnsc54>
Source record: 110673

What's the source for this data? How long is the line in wavelengths? At
50 Hz one wavelength is 3,720 miles. I would expect that the test line
was more like wire than transmission line!

At 100 kHz, one wavelength is 1.86 miles. I suspect that the test line
was still a non significant section of a wavelength therefore acting
more like a wire than a transmission line.

At 1 MHz and higher the data looks like a transmission line. The data
seems to indicates a transmission line that is about 1.4 to 1.5 meters
long!!!

I hope you are trying to pull our legs with this "DATA"

Deacon Dave, W1MCE
+ + +
Reg Edwards wrote:

> For anyone who may be interested.
>
> Typical of RG-58 and RG-11 type cables.
> Zo = Ro - jXo
> Xo is always negative.
> Angle of Zo in degrees. Always negative.
> VF = relative velocity.
>
> Freq Ro jXo Angle VF
> ------ ------ ------ ------ ------
> 50 Hz 967 -965 -44.95 0.034
> 1 kHz 220 -213 -44 0.151
> 10 kHz 80 -58 -36 0.41
> 100 kHz 56 -9.3 -9.5 0.59
> 1 MHz 52.4 -2.4 -2.7 0.63
> 10 MHz 50.7 -0.76 -0.86 0.65
> 100 MHz 50.2 -0.23 -0.27 0.66
>
> Smith Chart calculations begin to be inaccurate around 2 MHz and below. So
> do SWR meters.
>
>

3130. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:12:46 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308131612.6032d4ff@posting.google.com>
Source record: 110674

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308130923.28f1eccd@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308130628.138177d9@posting.google.com>...
>
> impedance, you can determine the SWR on that line. But your "SWR"
> meter isn't really an S11 meter; at best it's a |S11| meter.
>

Of course. We have no phase information. Only the magnitude of
the voltage reflection coefficient.

> This also brings up another point: do YOU define S11 to be the same
> as reflection coefficient?
>
> Cheers,
> Tom

I define the S11 as the complex impedance, which never changes,
but S11 can also refer to the magnitude of the reflection coefficient
at a particular phase, AT A PARTICULAR NORMALIZED REFERENCE IMPEDANCE.
If you define the reflection coefficient as having phase
information, then yes, they are the same, but only at a particular
reference impedance.

Change the reference impedance, and you will have a new reflection
coefficient, but the complex impedance will still be measured to be
the same.

You can do this is Motorola's Impedance Matching Program (MIMP).

What this all comes down to is that your 50 Ohm SWR meters only
measure reflected powers after it, not before, so any mismatch from PA
to reference impedance (50 ohm coax from PA to meter) is not measured.

Slick

3131. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:13:36 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308131613.afe684e@posting.google.com>
Source record: 110675

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308130605.121d0404@posting.google.com>...
> The SWR is based on the ratio of the
> forward to the reflected power.

Exactly! And (in a linear, time-invariant system at steady-state,
with enough forward power to be interesting,) that ratio does not
depend on where the forward power comes from; it's determined by the
load attached to the line and the line itself. (I trust we ARE
talking about a situation with only one source, feeding only one end
of the line...)

Cheers,
Tom

3132. Connector for Belden 89913?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:17:31 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308131617.33a1ee9f@posting.google.com>
Source record: 110676

Hi all,

Anyone have any leads on N type connectors specifically for Belden 89913? That's a plenum-rated version of 9913, with slightly different dimensions and significantly thinner jacket. (0.364 inches over the jacket, versus 0.405 inches for 9913.)

Cheers,
Tom

3133. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:19:46 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308131619.367ee7d3@posting.google.com>
Source record: 110677

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<j6lShSX5alO$EASR@ifwtech.co.uk>...
>
> > How would you explain what Cecil wrote?
>
> Who else but Cecil would dare attempt that? :-)
>

I can understand your fear...

>
> > Do you think the series reactance a system offers a PA may
> >actually improve it's incident power?
>
>>
> For example, reducing the load impedance will usually make the output
> device operate in a more linear way... but the efficiency drops and the
> greater heat dissipation and current are likely to shorten the lifetime
> of the device. Is that an improvement?

By improve, i mean increase the incident power. I think this is
possible, and i've actually measured it, if you read my original post.

If you can improve the incident power (tuning) of a PA with
varying the coax length, you might be able to adjust the SWR too, in
certain cases... though in my case, the SWR stayed about the same.

Slick

3134. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:25:59 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <NEWdnUpG1oWFSqeiXTWJjg@comcast.com>
Source record: 110678

I never thought about coax having a low frequency effect, but makes sense.
Twisted pair telephone wire is considered to be 600 - 900 Ohms with a large
capacitive component at voice frequencies, by 25KHz it is about 135, and at
T1/E1 frequencies, which are over 1 MHz, about 100 Ohms.

Tam/WB2TT
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bhc1e1$oo0$1@hercules.btinternet.com...
> For anyone who may be interested.
>
> Typical of RG-58 and RG-11 type cables.
> Zo = Ro - jXo
> Xo is always negative.
> Angle of Zo in degrees. Always negative.
> VF = relative velocity.
>
> Freq Ro jXo Angle VF
> ------ ------ ------ ------ ------
> 50 Hz 967 -965 -44.95 0.034
> 1 kHz 220 -213 -44 0.151
> 10 kHz 80 -58 -36 0.41
> 100 kHz 56 -9.3 -9.5 0.59
> 1 MHz 52.4 -2.4 -2.7 0.63
> 10 MHz 50.7 -0.76 -0.86 0.65
> 100 MHz 50.2 -0.23 -0.27 0.66
>
> Smith Chart calculations begin to be inaccurate around 2 MHz and below.
So
> do SWR meters.
>
>

3135. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:30:20 UTC
From: Dan/W4NTI <w4nti@NOSPAMmindspring.com>
Message-ID: <bhel5jrlt1@slb0.atl.mindspring.net>
Source record: 110679

"Sylvan Butler" <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid> wrote in
message
news:slrnbjli9m.itf.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid...
> On Tue, 12 Aug 2003 15:04:36 -0700, Roy Lewallen <w7el@eznec.com> wrote:
> > Hm, I've used WD-40 on everything from 115 VAC power switches to VHF
> > slug-tuned inductors, potentiometers, and relay contacts. Whatever
> > conductivity it might have, hasn't been a problem for me. I wouldn't use
> > it on 100 meg level impedances, but more from worry that it would pick
> > up dirt and grunge.
> >
> > What sort of experiment can you suggest that will demonstrate and
> > perhaps allow measurement of its conductivity?
> >
> > Roy Lewallen, W7EL
> >
> > Dan/W4NTI wrote:
> >> WD-40 is somewhat conductive. So be careful of it around insulated
parts.
>
> And I've used WD-40 in and around ignition components on several
> engines and fired things up a LOT better than with the water that
> was previously there.
>
> I suspect WD-40 conducts no better than white kerosene.
>
> sdb
>
> --
> | Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
> | Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
> It may be better to live under robber barons than under omnipotent moral
> busybodies. The robber baron's cruelty may sometimes sleep, his
> cupidity may at some point be satiated; but those who torment us for our
> own good will torment us without end, for they do so with the approval
> of their consciences. -- C. S. Lewis

We are discussing RF components. Not High Voltage spark coils and plugs.

Dan/W4NTI

3136. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:34:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlm8c48i7r4ea@corp.supernews.com>
Source record: 110680

Dr. Slick wrote:
>
> Agreed. Then any mismatch loss from PA to the 50 ohm coax is
> never measured at the meter. So we never really measure the reflected
> power coming right out of the PA, even if we attach the meter directly
> to it's output.

No "reflected power" comes out of a PA.

Roy Lewallen, W7EL

3137. Re: Jpole tuning?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:35:07 UTC
From: gmz79@aol.comnospam
Message-ID: <20030813203507.13370.00000645@mb-m27.aol.com>
Source record: 110681

>Hello All
>Considering using a Jpole antenna for 2 meters
>I plan to mount it on top of a 40 ft tower

Spend the money and put a dual band gain ant up there,
youll never regret it.
Greg Z
to thine own sound be true

3138. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:37:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlme8gg3fqt25@corp.supernews.com>
Source record: 110682

If you ever do see an equation which shows transmission line SWR as a function of source impedance, please let me know where you see it. I'll add it to my list of untrustworthy sources.

A simple experiment could be set up to disprove it.

Roy Lewallen, W7EL

Ralph Mowery wrote:
>
> After the first two replies on a question it is usually beter to give up.
> Right or wrong one just can not win.
>
> I have not seen a whole lot of equations on SWR but the few I have seen
> never mention the source at all.
>
>
>

3139. Re: Connector for Belden 89913?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:40:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlmk27s9ffg62@corp.supernews.com>
Source record: 110683

You might check with The Wireman. He carries good quality standard N connectors and might be able to get the special one you need.

Roy Lewallen, W7EL

Tom Bruhns wrote:
> Hi all,
>
> Anyone have any leads on N type connectors specifically for Belden
> 89913? That's a plenum-rated version of 9913, with slightly different
> dimensions and significantly thinner jacket. (0.364 inches over the
> jacket, versus 0.405 inches for 9913.)
>
> Cheers,
> Tom

3140. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 00:46:00 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308131646.6276c514@posting.google.com>
Source record: 110684

aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308130641.40b82b3d@posting.google.com>...
> kelly@dvol.com (Brian Kelly) wrote in message
news:<d22b54c3.0308121558.1b959ff2@posting.google.com>...
>
>
> "Can motor oil be used " and the correct answer is a
> qualified YES

What API spec crankcase oils do you have in mind?

> If you want to leave a KILOWATT active overnight then I
> would certainly say NO.
> I certaily would recommend the Teflon coated cans since
> can seams can sometimes 'weep'when thin oils are used.

In the case of a paint can being used for the housing for a dummy load
the outer surface of the can needs to be able to radiate as much power
as possible. A Teflon liner between the oil and inner surface of the
metal can is a thermal insulator and will degrade the ability of the
can and the dummy load to transfer the BTUs in the oil to the air
surrounding the can.

Simply degrease the can thoroughly and resolder the seams. Still won't
get rid of all the oil forever because the relief valves burp and/or
leak here and there.

> If viscosity is your main concern then additional
> circulation methods will alleviate that in a way far
> superior to that using the best known transformer oil
> (ARRL shows a method of achieving this)

I once wound a double-layer full length coil of 1/4" copper tubing
which was immersed in the mineral oil and soldered into the lid of a
Cantenna. I ran faucet water thru the coil. The dummy load ran quite
cool under all conditions when we were key-down smoke testing 2kW
output HF amps for an hour at a crack.

> If resisters are your main worry
> then use a couple of wire resisters with the windings
> oriented in opposite fashion since absolute accuracy is
> intended for real dummies.
> (Note resistors change value
> over time even when not in hostile environments.)
> Check the values on an old tube/valve reciever for yourself)

Dummy loads are simply places where one can dump RF power without cluttering up the bands. And I certainly wouldn't get involved with winding any inductors when non-inductive 50 Ohm deposited-film resistors are freely available.

> As a point of interest, have you considered what creates
> the first point of failure,

No, I've never had a dummy load fail.

> and why transformers housings
> are built so mechanically strong ?

Because they're the stuctural supports and housings for particulaly heavy AC power machinery often located outdoors and subject to all sorts of physical abuse. Plus the shells need to be of heavy enough plate to reliably facilitate leakproof welds. I fail to understand what this topic has to do with ham radio dummy load mechanicals.

> Can you tell me at what
> time the 'flash point ' comes into play when considering
> it.s use for a dummy load ?

No, but if the flash point ever becomes a concern I'll look up the temp and take it from there.

> These questions go to the very
> point that I discussed i.e using industry methods as
> pointers BUT with due reference to the different environnments
> and duty cycles required with respect to cost and availability.

. . OK.

> Regards
> Art

w3rv

3141. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:08:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gbnljv0sak9mke068qnkh66340g4fdslkg@4ax.com>
Source record: 110685

On 13 Aug 2003 17:46:00 -0700, kelly@dvol.com (Brian Kelly) wrote:

>aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308130641.40b82b3d@posting.google.com>...
>> kelly@dvol.com (Brian Kelly) wrote in message
news:<d22b54c3.0308121558.1b959ff2@posting.google.com>...

>> If viscosity is your main concern then additional
>> circulation methods will alleviate that in a way far
>> superior to that using the best known transformer oil
>> (ARRL shows a method of achieving this)
>
>I once wound a double-layer full length coil of 1/4" copper tubing
>which was immersed in the mineral oil and soldered into the lid of a
>Cantenna. I ran faucet water thru the coil. The dummy load ran quite
>cool under all conditions when we were key-down smoke testing 2kW
>output HF amps for an hour at a crack.

Imagine, water. And everyone is looking for the best oil. ;-)

>
>> If resisters are your main worry
>> then use a couple of wire resisters with the windings
>> oriented in opposite fashion since absolute accuracy is
>> intended for real dummies.
>> (Note resistors change value
>> over time even when not in hostile environments.)
>> Check the values on an old tube/valve reciever for yourself)

Those same resistors were specified at ï¿½20% for ordinary production
runs. Time has nothing to do with any implication of value drift when
the initial value far exceeds the worst drift in the worst of
circumstances.

Hi Brian,

As an aside to Art's observation, the world's best resistors (for
drift and accuracy) are stored in oil. They are roughly the size of a
coke can (actually thinner and taller, maybe the "new" coke can size)
and a Watt of dissipation would stress them (through the tension of
the wire element by thermal expansion).

The best oil I would search for (if it really mattered all that much,
it doesn't) would be Dow-Corning 200CP Silicone Fluid. This is what
is used in HP's Caloric Power meter. Problem there, and shared with
many of these exotic suggestions, is the minimum one barrel order. I
think someone earlier suggested begging which seems the best bet still

going.

73's
Richard Clark, KB7QHC

3142. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:10:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlobjbckua785@corp.supernews.com>
Source record: 110686

I apologize for the discourtesy. It did indeed set a bad example.

Roy Lewallen, W7EL

Richard Clark wrote:
> On Wed, 13 Aug 2003 16:13:13 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>Believe me, Ian, I know how frustrating it can get. But remember all the
>>lurkers out there who benefit from your insightful postings. Please keep
>>it up -- it is worth while. For their sake.
>>
>>Roy Lewallen, W7EL
>
>
> Hi Roy,
>
> It is nice of you to commend Ian to continue the good effort. Why
> didn't you do it directly instead of posting him through me? Are the
> lurkers to take some lesson by this breach of netiquette? :-)
>
> 73's
> Richard Clark, KB7QHC

3143. Re: Weird Mobile Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:15:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3ae408$1_8@corp.newsgroups.com>
Source record: 110687

Michael J. Donohue VE3YF wrote:
> Probably beneficial to clarify something, the antenna is a Hustler
> attached to a 3 magnet mount type system. This type of system has
> no physical ground, only capactive type ground.

Attach a physical ground and see what happens. You may somehow have
lost the capacitive coupling.
--
73, Cecil http://www.qsl.net/w5dxp

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3144. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:24:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlp5p8hlvahb2@corp.supernews.com>
Source record: 110688

Brian Kelly wrote:
>
> In the case of a paint can being used for the housing for a dummy load
> the outer surface of the can needs to be able to radiate as much power
> as possible. A Teflon liner between the oil and inner surface of the
> metal can is a thermal insulator and will degrade the ability of the
> can and the dummy load to transfer the BTUs in the oil to the air
> surrounding the can.
> . . .

Don't tell my wife that. She's been thinking all along that the food she's been putting in the Teflon lined frying pan has actually been cooking!

Seriously, what you've got is a series of "thermal resistances" in series. This is a legitimate if simplified way of evaluating temperature drop, and is widely used in determining chip temperature of transistors and ICs. From the resistor, you've got the thermal resistance of the oil, in series with the thermal resistance of the Teflon, then the metal can, then finally the resistance of the can-to-air transfer, or "connection". The temperature difference between the resistor and the air is calculated like the voltage in a circuit, where the circuit's "current" is the amount of power being transferred. That is, DT = THETA * P, where DT is the temperature differential, P the power, and THETA all the thermal resistances in series. In electronics, DT is usually in degrees C, P in watts, and THETA in degrees C per watt.

While the thermal resistance of the Teflon layer is undoubtedly several orders of magnitude greater than the thermal resistance of the can, I'd be willing to bet that it's much less than the can-to-air thermal resistance, and probably (because of its very small thickness) even much less than the resistor-to-Teflon thermal resistance through the oil (unless, perhaps, the oil is very rapidly stirred). So, in the big picture, the Teflon layer doesn't make any difference.

Roy Lewallen, W7EL

3145. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:32:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3ae801$1_8@corp.newsgroups.com>
Source record: 110689

Roy Lewallen wrote:

> Dr. Slick wrote:
>> I disagree on this point. You are caught up in the 50 Ohm world,
>> which i admit is easy to do. The SWR is based on the ratio of the
>> forward to the reflected power.
>
> That's not correct. The SWR (more correctly VSWR) is, by definition, the
> ratio of the highest to lowest voltages which appear on a line long
> enough to have both a maximum and minimum. It can be calculated from the
> forward and reverse voltage waves. ISWR, the current standing wave
> ratio, is numerically equal to the VSWR.

For Dr. Slick: Knowing the forward and reflected powers, one can use the
following equation to obtain SWR. 'Sqrt' means "square root of".

SWR = [Sqrt(Pfwd)+Sqrt(Pref)]/[Sqrt(Pfwd)-Sqrt(Pref)]
--
73, Cecil http://www.qsl.net/w5dxp

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3146. Re: Old coax

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:39:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjlq1sck1h2v90@corp.supernews.com>
Source record: 110690

I disagree that it's not of any practical use. The MFJ antenna analyzer uses essentially this method, and on every occasion where I've used it (mostly on RG-58 cable, occasionally on RG-213), it agrees within a tenth of a dB or so with measurements made with a Bird wattmeter. Agreed that the Bird isn't terribly accurate, but it's not too bad for comparative readings where the differences aren't great.

Assuming that the measurement is made with an SWR meter, I agree that the result won't be accurate if the line impedance is different from the SWR meter's. However, for the normal variations one sees in "50 ohm" cable, the results are accurate enough to be quite useful. The method certainly shouldn't be used for lines whose nominal characteristic impedance isn't the same as the meter's. I apologize for not pointing this out, and thank Reg for doing so.

Contrary to (1) below, no slotted line or voltmeter is necessary to use this equation.

I do agree that this wouldn't be a good method to measure very small amounts of loss. But for the original purpose of deciding whether old cable is usable, it should be fine. If the loss is that small, there's no reason not to use the line.

There are many occasions where a casual measurement is better than no measurement at all -- always with the caveat that you realize the limitations of the measurement's accuracy and don't try to draw conclusions from it that aren't justified. This is certainly a method that gives results which, under a number of circumstances, is quite useful.

Roy Lewallen
Certifed Reg's Old Wife, Nit-picker, and Busy-body

Reg Edwards wrote:
> "Roy Lewallen" wrote
>
>>You can also determine the loss by measuring the input impedance or SWR
>>of an open or short circuited piece of cable -- the better the SWR, the
>>higher the loss. Loss in dB = 10 * log[(SWR + 1) / (SWR - 1)].
>
>
> ==========
>
> The above formula may be correct but it's not of any practical use.
>
> (1) It applies only when SWR is measured by running alongside a slotted
> line with a voltmeter, stopping to make a note of the voltmeter readings at

> the max and min points, and then calculating Vmax/Vmin. It is of academic
> interest and is entirely unrelated to line Zo.
>
> (2) The error in application arises from the confusion caused by the
> old-wives incorrect assumption that the TLI (Transmitter Loading Indicator)
> actually measures SWR. It doesn't.
>
> (3) If the ordinary TLI did measure SWR then the measurement would apply
> only to 50-ohm lines. On any other line, such as old coax when Zo is
> unknown, the measurement would be meaningless.
>
> (4) If the cable to be checked was really 50 ohms and the so-called SWR
> meter was standardised on 75 ohms then the measurement would be equally
> meaningless.
>
> (5) If the shack 50-ohm SWR meter can be relied upon (and most of them
> can't) then the ONLY information to be gleaned is to measure both the
> short-circuit and open-circuit SWRs. If they are in the same ball park then
> the unknown cable is probably not far from 50 ohms.
>
> (6) Line attenuation is a very small quantity. It is the most difficult of
> all line parameters to measure accurately. The last instrument to choose is
> the SWR meter in the shack. The most attrocious mechanical damage can be
> caused over a short length without hardly any effect on attenuation over a
> longer length. To detect the presence of other than catastrophic cable
> faults is not possible by attenuation tests. There are far more sensitive
> ways of detecting and locating faults.
>
> (7) To check an old length of line just test for DC continuity and look at
> the ends. If all is bright and clean there's nothing wrong with it.
> ----
> Reg, G4FGQ
>
>
>
>

3147. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:53:24 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f3aecb0_3@news1.prserv.net>
Source record: 110691
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

Brian:

You should mention to telescope the sections, rather than using threaded
reducing fittings, which are not strong enough for this kind of application.
Out of curiosity, how much overlap do you use?

--
Crazy George
Remove NO and SPAM from return address
"Brian Kelly" <kelly@dvol.com> wrote in message
news:d22b54c3.0308130706.1dbb1b8c@posting.google.com...

<snip>.
>
> Use a mast made from steel pipe. I've used 'em several times, works
> fine. Assume the bottom section of the mast is made from a full length
> of standard 2.5" Schedule 40 galvanized steel pipe x 21 feet long. Top
> the base section with a couple 10-12 foot lengths of smaller diameter
> pipe and assemble the mast & antennas. Drive a five foot length of 3"
> pipe into the ground, clean it out, raise the mast to a vertical
> position and drop it into the 3" pipe. Bracketing might be optional
> depending on the load vs. the stress & deflection calcs. No concrete
> and only a few square inches of real estate req'd in either case. Will
> not be "light" and the pipe will cost several hundred dollars.
> Aluminum pipe would be 40% lighter but would be considerably more
> expensive.
>
> > Dwight Stewart (W5NET)
>
> w3rv

3148. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:54:07 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3aed0d$1_8@corp.newsgroups.com>
Source record: 110692

Dr. Slick wrote:
> So we never really measure the reflected
> power coming right out of the PA, even if we attach the meter directly
> to it's output.

If the forward power out of a PA is 100 watts and the reflected power
into the PA is 50 watts, the PA is generating 50 watts, *by definition*.

Given that definition, the implication is clear. All PA's, by definition,
must re-reflect 100% of the incident reflected energy. Thus, everything
you are worried about has already been defined out of existence. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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3149. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 01:56:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3aeda3$1_8@corp.newsgroups.com>
Source record: 110693

Ralph Mowery wrote:
> I have not seen a whole lot of equations on SWR but the few I have seen
> never mention the source at all.

When someone defined the generated power as the forward power minus the
reflected power, the entire problem was defined out of existence. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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3150. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 02:03:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3aef51_8@corp.newsgroups.com>
Source record: 110694

Dr. Slick wrote:
> And because most PA are not 50 ohms output, and most SWR meters
> are 50 Ohms, there is problem.

The problem is solved by the 50 ohm coax. No matter what power the generator is generating, the ratio of Vfwd/Ifwd is 50 ohms. No matter what reflected power is incident upon the generator, the ratio of Vref/Iref is 50 ohms. The PA is forced to accept those conditions. The load is in control of the PA's load line. A generator putting out 100V at 2A can have an internal impedance of 5 ohms, 50 ohms, 500 ohms, or anything else.
--
73, Cecil http://www.qsl.net/w5dxp

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3151. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 02:10:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3af0d4$1_8@corp.newsgroups.com>
Source record: 110695

Roy Lewallen wrote:

> Dr. Slick wrote:
>> Agreed. Then any mismatch loss from PA to the 50 ohm coax is
>> never measured at the meter. So we never really measure the reflected
>> power coming right out of the PA, even if we attach the meter directly
>> to it's output.
>
> No "reflected power" comes out of a PA.

By definition. I wonder who invented that definition? It seems pretty
obvious that not all PA's are Z0-matched so they will always re-reflect
100% of the incident reflected power. But that is exactly what that
definition implies.
--
73, Cecil http://www.qsl.net/w5dxp

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3152. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 02:40:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhesqjmso1@hercules.btinternet.com>
Source record: 110696

Dear all, Here's a useful tip -

The loss along any sort of HF transmission line, SWR or not, increases with line temperature according to just ONE HALF of the resistance-temperature coefficient of the conductors. Why ? It's something to do with skin effect.

RTC of copper is near enough 0.4 percent per degree C.

So loss along any line, in dB or nepers, increases by 0.2 percent per degree C.

Now you may not think this matters very much. But if you consider a seasonal change in temperature on the ocean bottom of only 2 degree C along a 2000-mile transatlantic cable which has an attenuation at 5 MHz of 1.6 dB per mile, total attenuation = 3,200 dB, then you will appreciate the responsibilty laid on the shoulders of the design engineers of the first oceanic telephone cable systems.

An uncertainty of 0.4 percent of 3,200 dB = 13 dB which is enough to wreck system operation. Omission of a submerged repeater allows signals to fall below noise level at the last repeater. Addition of one more repeater overloads the last repeater causing cross-modulation, cross-talk and noise. Bear in mind repeaters are both-direction amplifiers and the lowest speech channels are at 60 KHz where overall attenuation over the same distance is only about 350 dB.

Repeater power is fedover the the inner cable conductor from constant current sources at both ends, maximum voltage = 10 KV. +ve from one end, -ve from the other. During magnetic storms and other disturbances the potential difference between ground electrodes in N.America and W.Europe can rise to several thousand volts. Although the last time I measured it on an AVO-8 it was only 1.3 volts. I did, of course, make use of the safety grounding stick before using the crocodile clips on the ends of the meter leads. Depended on the tides and the flow of the Gulf Stream across the Earth's magnetic line of force.

It always struck me as being highly incongruous, even absurd, that in normal operation, cables of the highest possible quality materials, manufactured by automatically controlled, specially-designed precision machinery, laid at great expense by an 8000-ton, specially-design ship over thousands of miles, should end up by being terminated with a foot or so of soldered, screwed-up, cotton-covered 22-gauge wire rescued from the terminal-station scrap bin. This is true. I have seen both ends with my own eyes. On one occasion I even did the soldering after completing overall tests! But I was careful to use a fairly straight length of wire with sufficient sag to eliminate any

possible tension beyond that due to its own weight.

Dear readers, believe me, there's no time to worry about SWR when loss in revenue amounts to $100,000 per hour + repair-ship expenses every time a flatfish trawler scoops up a cable in its net, cuts it free with an axe, and the skipper sneaks away at top speed without telling anybody in case he has to pay for the damage.

Coax cable Zo = 43 ohms. Diameter over polyethylene = 1 inch. Inner conductor = longitudinal overlapping crimped copper tape, laid over the cable's principal strength-member of a number of high-tensile steel wires, overall inner diameter about 1/3 inch. Outer conductor = 6, touching, longitudinal aluminium tapes with a small spiral lay. Sheath = 0.1-inch thick extrusion of black polyethylene if I remember correctly. For shallow water and continental shelves there was a number of protective heavy iron wires laid on a bed of tarred hessian as had been used for 100 years on the first of the Atlantic telegraph cables.

I sometimes think of (the later) Lord Kelvin who followed his calculations with the recommendation to investors "Go ahead, make and lay the bloody stuff". But it was Heaviside, a generation later, a genius who died of neglect, who eventually described how the "bloody stuff" and radio propagation really worked.

Folks, just a little light-hearted digression, a respite from so-called SWR meters. Please continue with your discussion. ;o)

Reg, G4FGQ

3153. Re: Tarheel screwdriver Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 02:54:46 UTC
From: kd4xv@aol.comzzz
Message-ID: <20030813225446.09040.00000470@mb-m05.aol.com>
Source record: 110697

>I want to put a screwdrive on the back of a motorhome and have had the
>tarheel recommended to me. I have never heard of it or seen one. do any of
>you have experience with this antenna?
>
>
>thanks in advance
>
>Bill
>
>W4WEG
>
>
>

I have had a model 200 on the left rear of my Expedition for about a year now. It is very tuff! There are lots of low trees on the approach to my house and it hits them all. My wife tried to destroy it by hanging the whip in the basketball goal.. It bent the Steel channel iron mount and turned over the basketball goal which rode down the Tarheel.. It dinged the paint in one spot.. That was the only damage to the antenna and the paint has not chipped from where it was damaged.. Performance wise, and in short, It works GREAT!

I used The optional mount and it is also very durable... Works well with the Automatic Screwdriver Antenna Controller. (dosn't like to tune 40m when it's raining though).

Robert who makes the tarheel is a really nice fellow. He answered all kinds of questions for me when I was making my purchase decision.

My model 200 tunes 10-80 and also works very well on 6 meters. I don't even have to take the whip off. I don't know if yours will do this but I just tune mine to 20 meters and it is just right for 6m.

I have recommended this antenna to others before and I encourage you to try it. I don't think you will be disappointed

Wally Brown
KD4XV

3154. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 02:59:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhetul$o03$1@hercules.btinternet.com>
Source record: 110698

"David Robbins" wrote
> where does that come from?
==========

Out of my head. I've just said so, havn't I ?

3155. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 03:07:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bheudmoet1@hercules.btinternet.com>
Source record: 110699

"Dave Shrader" wrote
> What's the source for this data?
==========

In my head. I just calculated it from first principles.

I did copy a teeny bit from Volta, Ampere and Ohm.

Isn't it in the ARRL Handbook?

3156. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 03:16:18 UTC
From: Peter Brackett <ab4bc@ix.netcom.com>
Message-ID: <bhev22$8qs$1@slb5.atl.mindspring.net>
Source record: 110700

Tarmo:

[snip]
"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:NEWdnUpG1oWFSqeiXTWJjg@comcast.com...
> I never thought about coax having a low frequency effect, but makes sense.
> Twisted pair telephone wire is considered to be 600 - 900 Ohms with a
large
> capacitive component at voice frequencies, by 25KHz it is about 135, and
at
> T1/E1 frequencies, which are over 1 MHz, about 100 Ohms.
[snip]

Depending upon it's length and how it is terminated, telephone twisted pair
is
approximately 5 - 10K Ohms and highly capacitive at the very low end near
100 - 200 Hz and only reaches 600 Ohms somewhere in the range of
1 - 2 KHz and then as you noted it continues downward to around 100 Ohms
at over 1MHz. In the usual lengths in which it is deployed by the telephone
companies,
i.e. [1500 Ohm design rules which "reach" to a maximum of 18,000 feet] it is
quite lossy usually having a DC resistance in the neighbourhood of 1500
Ohms.

For modern xDSL systems which span from a few hundred Hz up into the MHz,
the telephone twisted pair can fairly be considered a very lossy broad band
channel with
essentially no constant Zo. Zo varies all over the map! Cecil would have a
problem
calculating his "reflections" without a constant Zo, heh, heh... To
complicate things, such lines
often contains bridged taps, which are open circuit stubs hanging off the
line for "sparing"
purposes, and these stubs causes 1/4 wave "suck out" notches in the broad
band
transmission bandwidth.

Full duplex echo cancelled data transmission by xDSL techniques over such
channels
is problematic to say the least, but occurs in millions of instances daily.
In some xDSLs
the transmitters are operating simultaneously in the same bandwidth from
both ends while
the receivers on both ends have to operate in the presence of those local
transmitters over

18,000 foot distances with high attenuation and lots of cross-talk without errors.

All of this is accomplished with dedicated DSP processors.

--
Peter K1PO
Indialantic By-the-Sea, FL

3157. Steppir Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 03:43:53 UTC
From: Carl Walthall <motorola1@insightbb.com>
Message-ID: <ZzD_a.95775$cF.29132@rwcrnsc53>
Source record: 110701

Can anyone tell me what they think about the Steppir Antenna's? I have a High Sierra and like the antenna alot but hate the manual tuning.

Thanks in Advance Carl

http://www.steppir.com/

3158. Re: Steppir Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 04:02:05 UTC
From: Keyboard In The Wilderness <KITW@forest.com>
Message-ID: <0RD_a.33464$ff.16883@fed1read01>
Source record: 110702

See 20 reviews at eHam.net
http://www.eham.net/reviews/detail/1833

"Carl Walthall" <motorola1@insightbb.com> wrote in message
news:ZzD_a.95775$cF.29132@rwcrnsc53...
> Can anyone tell me what they think about the Steppir Antenna's? I have a
> High Sierra and like the antenna alot but hate the manual tuning.
>
> Thanks in Advance Carl
>
> http://www.steppir.com/
>
>

3159. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 06:42:16 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <L4p4htDI9yO$EAHC@ifwtech.co.uk>
Source record: 110705

Dr. Slick wrote:
>
>> As Roy says, the equations relating any one of these parameters to any
>> other are all well known. NONE of them ever involves source impedance.
>
> Assuming the source impedance is 50 ohms, which it usually isn't
>with most PAs.
>
NO - and this is the central point.

When Roy and I are saying:
>>NONE of them ever involves source impedance.
- that is exactly what we mean.

We didn't mean there is a hidden assumption about what the source impedance is - we meant what we said: it isn't there at all, in any of the equations we're talking about.

Look them up; and then go deeper and look at how they are derived. They involve only the load impedance and Z0. That's "only", as in "no hidden additives."

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3160. Re: 2m 9 Element Tonna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 07:24:17 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <Coz6FvGhkzO$EA3l@ifwtech.co.uk>
Source record: 110704

John wrote:
>Do the 2m 9 element Tonnas have insulated reflectors/directors or are they
>electrically grounded to the boom?

Tonna's production over the last several years uses insulated plastic clips on top of the boom. These came in at about the same time as the sleeve "balun" for the driven element.

If you're offered an old one that uses elements through the boom with metal clips, you should probably just say no. At its present age the boom-element contacts will be corroded and unreliable.

With all old Tonnas, there's also a question about corrosion of the riveted joint between the driven element and the hairpin loop, inside the insulator where you can't get to clean it. I've used Tonnas for many years, but on new driven elements I now apply hot-melt glue around the locations where water could get in.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3161. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 07:30:20 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <d4I9xpHMqzO$EA0I@ifwtech.co.uk>
Source record: 110703

Richard Clark wrote:
>On Wed, 13 Aug 2003 23:28:50 +0100, "Ian White, G3SEK"
><G3SEK@ifwtech.co.uk> wrote:
>
>>Richard Clark wrote:
>>> "The limits of uncertainty are obtained by evaluating
>>> (1 ï¿½ |SourceGamma| |LoadGamma|)ï¿½
>>> since SourceGamma and LoadGamma are complex
>>> quantities."
>>
>>That is the mismatch uncertainly between a source impedance and a load
>>impedance.
>
>Hi Ian,
>
>As this has been stated by me, explicitly, through several rounds by
>now, just what point are you offering that casts a new light on the
>discussion?
>
>Do you have anything to offer in regard to actual methods performed,
>data obtained, the offered references that predict them, and their
>correlation to the subject of this thread?

Yes - the very next sentence that I wrote, and you deleted:

>>SWR on a transmission line connecting the source and load impedance
>>is a totally separate quantity, determined only by the load impedance
>>and Z0.

The subject is why SWR meters might read differently with different
lengths of coax. Your statements about mismatch uncertainty are true,
but not relevant.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3162. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 08:43:07 UTC
From: Dwight Stewart <stewartx@earthlinkNOSPAM.net>
Message-ID: <BB60C4D7.2237B%stewartx@earthlinkNOSPAM.net>
Source record: 110706
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Brian Kelly" wrote:
>
> A shallow concrete slab will not support any
> tower unless the tower is well bracketed to
> the house. There are only two choices: A large
> block of concrete for the base or a slab with
> a house bracket.

The word "slab" was probably a poor choice. I was mainly referring to the width, not depth, of the concrete. The concrete will pretty much fill the entire hole below the ground surface.

> Use a mast made from steel pipe. I've used 'em
> several times, works fine. Assume the bottom
> section of the mast is made from a full length
> of standard 2.5" Schedule 40 galvanized steel
> pipe x 21 feet long. Top the base section with
> a couple 10-12 foot lengths of smaller diameter
> pipe and assemble the mast & antennas. Drive a
> five foot length of 3" pipe into the ground,
> clean it out, raise the mast to a vertical
> position and drop it into the 3" pipe. (snip)

To make it freestanding, one would have to use some fairly thick steel pipe (both wall thickness and pipe diameter), especially for longer lengths. And pipe that heavy would almost require a crane to move it around. Because of that, steel pipe might be fine for shorter masts (or guyed taller masts using thinner pipe), but wouldn't really be feasible for a taller freestanding structure (unless one owned a crane, but then the crane itself could just be used to support the antennas).

Dwight Stewart (W5NET)

http://www.qsl.net/w5net/

3163. Re: Steppir Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 10:15:25 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vjmocmim6gfjf4@corp.supernews.com>
Source record: 110707

Carl
I have had the 3 el yagi and big vertical for some time now.
I am just about to order the 4th element expansion kit.
Excellent product by nice folks.
H.
NQ5H

"Carl Walthall" <motorola1@insightbb.com> wrote in message
news:ZzD_a.95775$cF.29132@rwcrnsc53...
> Can anyone tell me what they think about the Steppir Antenna's? I have a
> High Sierra and like the antenna alot but hate the manual tuning.
>
> Thanks in Advance Carl
>
> http://www.steppir.com/
>
>

3164. Re: BPL - act today to save our HF bands

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 11:27:21 UTC
From: WB2JKX <mycall-N0SPAM@arrl.net>
Message-ID: <tmK_a.100068$0v4.6920138@bgtnsc04-news.ops.worldnet.att.net>
Source record: 110708

Fred <peerenbf@dma.org> wrote in message
news:Pine.LNX.4.44.0308131904010.15314-100000@dmapub.dma.org...
> For all of you that don't think the interferance is going to be "not so
> bad" even in CW, should come to Dayton, Ohio or any other city that still
> runs electric trolly lines and listen to the S-9 +40 signal that the 400
> hertz trolly lines produce, and you can here it on a mobile reciever up to
> 2000 feet from the lines, especially when a trolly is in the area and
> moving. It cost money to fight the big money in DC, the power companies
> have an almost unlimited purse into which we the consumers have to keep
> pouring cash. They can hire the most costly lobbiest groups around for
>
400 Hz, really??

3165. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 11:35:34 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <UCidnY1cArKQ6aaiXTWJig@crocker.com>
Source record: 110709

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bhetul$o03$1@hercules.btinternet.com...
> "David Robbins" wrote
> > where does that come from?
> ==========
>
> Out of my head. I've just said so, havn't I ?
>
>
ok, just wanted to make sure you weren't pulling it out of somewhere else.

3166. Re: G5RV 450 ohm or 300 ohm Phasing line

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 12:05:13 UTC
From: Andy <dx90@blueyonder.co.uk>
Message-ID: <ZVK_a.8262$Ox6.7543@news-binary.blueyonder.co.uk>
Source record: 110710

Thanks Mark for your reply.
It was on the MoonRaker web site http://www.moonrakerukltd.com they called it a phasing line on there G5RV.
All noted on the external ATU. I was hoping to rely on the one in the FT1000MP Field. Looks as if I will have to sort some thing out with a external ATU this way.

73 de Andy

"Mark Keith" <nm5k@wt.net> wrote in message news:25eb70d7.0308122319.bd046ad@posting.google.com...
> "Andy" <dx90@blueyonder.co.uk> wrote in message news:<xOd_a.246$rp.66@news-binary.blueyonder.co.uk>...
> > Hi all
> >
> > If I choose G5RV Half or full size antenna what is the best phasing line to
> > use and why 450 ohm or 300 ohm.
>
> That is no phasing line. You use a phasing line when you want to feed
> two or more antennas in or out of phase. You will only have one
> antenna.
>
> I will be using a internal ATU on my
> > transiever.
>
> It might work ok, but I'd be careful. Those tuners in the radios are
> not really that well suited for this type of use. It will probably
> tune, but keep an eye out for possible tuner overheating with large
> mismatches. I always prefer an outboard tuner when tuning a ladder
> line fed antenna. If it were me, I'd run ladder line the whole way. No
> coax.
> >
> > If I go for the full size G5RV I will have to use the first 66 feet straight
> > harizontal up at 30 feet and the last 36 feet at a right angle sloping at 45
> > degrees, will this work ok?
>
> It should. MK

3167. Re: G5RV 450 ohm or 300 ohm Phasing line

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 13:14:52 UTC
From: Jim Leder <jleder@cinci.rr.com>
Message-ID: <pm2njvk73a9mrvtnrc86fe57ph1721ifd5@4ax.com>
Source record: 110711

Been using a full sized, coax fed G5RV here for 7 years to a Kenwood TS450sat (auto antenna tuner) with no problems. Tuner tunes antenna with no problem, and while I consider the G5RV a compromise antenna, it works well enough.

3168. Re: Connector for Belden 89913?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 14:20:09 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <qZOcnerW_IIBB6aiXTWJiA@comcast.com>
Source record: 110713

He could also check out the Amphenol and Amp web sites.

Tam/WB2TT
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vjlmk27s9ffg62@corp.supernews.com...
> You might check with The Wireman. He carries good quality standard N
> connectors and might be able to get the special one you need.
>
> Roy Lewallen, W7EL

3169. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 14:29:40 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308140629.29e942a4@posting.google.com>
Source record: 110714

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<gbnljv0sak9mke068qnkh66340g4fdslkg@4ax.com>...
> On 13 Aug 2003 17:46:00 -0700, kelly@dvol.com (Brian Kelly) wrote:
>
> >aunwin@insightbb.com (Art Unwin KB9MZ) wrote in message
news:<85ed38d.0308130641.40b82b3d@posting.google.com>...
> >> kelly@dvol.com (Brian Kelly) wrote in message
news:<d22b54c3.0308121558.1b959ff2@posting.google.com>...
>
> >> If viscosity is your main concern then additional
> >> circulation methods will alleviate that in a way far
> >> superior to that using the best known transformer oil
> >> (ARRL shows a method of achieving this)
> >
> >I once wound a double-layer full length coil of 1/4" copper tubing
> >which was immersed in the mineral oil and soldered into the lid of a
> >Cantenna. I ran faucet water thru the coil. The dummy load ran quite
> >cool under all conditions when we were key-down smoke testing 2kW
> >output HF amps for an hour at a crack.
>
> Imagine, water. And everyone is looking for the best oil. ;-)

Heh.

> >> If resisters are your main worry
> >> then use a couple of wire resisters with the windings
> >> oriented in opposite fashion since absolute accuracy is
> >> intended for real dummies.
> >> (Note resistors change value
> >> over time even when not in hostile environments.)
> >> Check the values on an old tube/valve reciever for yourself)
>
> Those same resistors were specified at ï¿½20% for ordinary production
> runs. Time has nothing to do with any implication of value drift when
> the initial value far exceeds the worst drift in the worst of
> circumstances.

I'll settle for a 1.2 SWR every time.

> Hi Brian,
>
> As an aside to Art's observation, the world's best resistors (for
> drift and accuracy) are stored in oil. They are roughly the size of a
> coke can (actually thinner and taller, maybe the "new" coke can size)
> and a Watt of dissipation would stress them (through the tension of

> the wire element by thermal expansion).
>
> The best oil I would search for (if it really mattered all that much,
> it doesn't) would be Dow-Corning 200CP Silicone Fluid. This is what
> is used in HP's Caloric Power meter. Problem there, and shared with
> many of these exotic suggestions, is the minimum one barrel order. I
> think someone earlier suggested begging which seems the best bet still
> going.

I've found myself in the position of having to chase down small quantities of exotic lubes normally sold only in barrel type quantities by the producers. There are "job lot" suppliers out there which repackage the stuff in smaller quantities. But boy, tracking them down was quite an exercise.

I spent a day and a half on the phone calling around trying to buy a lousy two pounds of a specific DuPont Teflon-bearing grease. The worn-out DuPont tech rep finally wrote an order for a two pound sample but I had to drive 50 miles to the Dupey warehouse to pick it up.

I imagine it's much easier to simply run a web search today.

> 73's
> Richard Clark, KB7QHC

w3rv

3170. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 14:41:53 UTC
From: jder8745@aol.com
Message-ID: <20030814104153.07099.00001314@mb-m12.aol.com>
Source record: 110715

Someone sed:

"The SWR is based on the ratio of the forward to the reflected power."

But this isn't the *definition* of SWR.

Trivia question: What is the definition of SWR?

73 de Jack, K9CUN

3171. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 14:52:49 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <cYCdnaOIk__eP6aiXTWJjw@comcast.com>
Source record: 110716

Peter,

I once worked on stuff that operated on leased 4 wire lines in the frequency range of a few KHz to about 200 Khz. We were told by Telco systems engineers to design for 135 Ohms. There were restrictions on what cable was usable. 19 ga was OK, 26 was definately not. Loading coils had to be removed. I think it was called a "G" something conditioned line.

There is an FCC approved model for a telephone line input impedance at voice frequencies. I can't remember the details, but it was something like two resistors in series with a sum of around 1000 Ohms; the larger resistor being shunted with a fair sized capacitor. You need this model to design, for instance, a hybrid for a modem.

When the line is very short relative to a wavelength you could treat it as something other than a transmission line. For instance, I once used a 1 inch length of RG 58 as a neutralizing capacitor for an HF traansmitter.

Tam/WB2TT

3172. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 14:56:26 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308140656.7b80695c@posting.google.com>
Source record: 110717

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjlp5p8hlvahb2@corp.supernews.com>...
> Brian Kelly wrote:
> >
> > In the case of a paint can being used for the housing for a dummy load
> > the outer surface of the can needs to be able to radiate as much power
> > as possible. A Teflon liner between the oil and inner surface of the
> > metal can is a thermal insulator and will degrade the ability of the
> > can and the dummy load to transfer the BTUs in the oil to the air
> > surrounding the can.
> > . . .
>
> Don't tell my wife that. She's been thinking all along that the food
> she's been putting in the Teflon lined frying pan has actually been cooking!

Hee! Couple weeks ago I got stupid and tried to fry a couple eggs in a
bare aluminum pan. I wound up with one edible egg and one which
alloyed itself with the pan.

> Seriously, what you've got is a series of "thermal resistances" in
> series. This is a legitimate if simplified way of evaluating temperature
> drop, and is widely used in determining chip temperature of transistors
> and ICs. From the resistor, you've got the thermal resistance of the
> oil, in series with the thermal resistance of the Teflon, then the metal
> can, then finally the resistance of the can-to-air transfer, or
> "connection". The temperature difference between the resistor and the
> air is calculated like the voltage in a circuit, where the circuit's
> "current" is the amount of power being transferred. That is, DT = THETA
> * P, where DT is the temperature differential, P the power, and THETA
> all the thermal resistances in series. In electronics, DT is usually in
> degrees C, P in watts, and THETA in degrees C per watt.

Yup. There isn't a steady-state thermal circuit out there which can't
be modeled on the bench with a pile of resistors. Gets hairy when
fluid dyanmics gets into the mix, laminar vs. turbulent flow, etc.
Ditto the electrical network simulation of mechanical vibrations. A
lot of grad school theses were written in the general topic area back
in analog computer days. Mother Nature could care less about the lines
between engineering disciplines.

> While the thermal resistance of the Teflon layer is undoubtedly several
> orders of magnitude greater than the thermal resistance of the can, I'd
> be willing to bet that it's much less than the can-to-air thermal
> resistance,

Blow air on the can with a fan. In the limit dunk the can in a bucket
with water running in/out.

> and probably (because of its very small thickness) even much
> less than the resistor-to-Teflon thermal resistance through the oil
> (unless, perhaps, the oil is very rapidly stirred). So, in the big
> picture, the Teflon layer doesn't make any difference.

Agreed.

Nobody ever died from an engineering troll.

> Roy Lewallen, W7EL

w3rv

3173. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 15:10:25 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308140710.4d3fd41a@posting.google.com>
Source record: 110718
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message
news:<3f3aecb0_3@news1.prserv.net>...
> Brian:
>
> You should mention to telescope the sections, rather than using threaded
> reducing fittings, which are not strong enough for this kind of application.
> Out of curiosity, how much overlap do you use?

I've done it both ways depending on a lot of variables. I noramally do
use threaded pipe reducers. As long as they're either steel or wrought
iron that is. The cheap hardware store cast grey iron reducers are
non-no's. I retap the reducers to get more thread engagement length.
It's been demonstrated that Schedule 40 pipe will fail in bending
before decent reducers fail. But in situations where the loads get
dicey and/or parts of the mast are tubing vs. pipe I use at least six
inch overlaps and have the joints welded.

> --
> Crazy George

w3rv

3174. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 15:13:16 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <YuqcnVgRKKGSOqaiXTWJhA@comcast.com>
Source record: 110619
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Dwight Stewart" <stewartx@earthlinkNOSPAM.net> wrote in message
news:BB5F68C7.222E6%stewartx@earthlinkNOSPAM.net...
> "Tarmo Tammaru" wrote:
> >
> > If they still make it, the Rohn HBX series would
> > be the least expensive. (Notice, I didn't say
> > cheap). It comes in 8 foot... (snip)
>
>
> Yep, that's the best I've found so far.

Dwight,

My first tower consisted of 3 sections of Rohn HBX. This gave me 24 feet. To the top of this I added a 10 foot piece of 2 inch OD Al pipe. This was fastened to the tower with angle iron and U bolts at the top plate and the rotor shelf. Somebody gave it to me. It actually started life as a Hygain vertical. The middle of the second section was fastened to the end of the garage with TV house brackets. The ground mount consisted of three pieces of pipe driven into the ground, with 1 bag of concrete to add some strength.

BTW, have you considered a roof tower? Even a garage roof would give you at least 12 free feet.

Tam/WB2TT

3175. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 15:13:56 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308140713.6ee599a9@posting.google.com>
Source record: 110620

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308130855.21cc8951@posting.google.com>...
...
> The resistance of the copper in the transmission line changes with
> temperature. If ambient is 20C and you put in enough power to heat up
> the line (center conductor) to 70C, that's a 50C change, and will
> result in about an 18% increase in resistance. So if you had a line
> which had 3dB loss at 20C, it would increase to about 3.5dB at 70C.
> If the load end has a 2:1 SWR, then the sending end will have about
> 1.40:1 SWR at 20C and about 1.35:1 at 70C. It's not a _big_ change,
> but it should be observable on an SWR meter that is accurate over a
> wide range of powers.

Correction... First, thanks to Reg for his posting on the same
general topic. He pointed out that the RF resistances changes as the
square root of the DC resistance, and though I know that perfectly
well, had not put that into the above statements. With that
correction, I believe the result will be more like a change of 8% in
RF resistance, a loss change from 3.00dB to 3.26dB, and a change from
about 1.40 to 1.37 SWR. The point is the same; it would be observable
on a good SWR meter, though not distinguishable from other effects on
a typical cheap one.

Cheers,
Tom

3176. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 15:30:53 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308140730.335e340e@posting.google.com>
Source record: 110621

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<d4I9xpHMqzO$EA0l@ifwtech.co.uk>...
...
> The subject is why SWR meters might read differently with different
> lengths of coax. Your statements about mismatch uncertainty are true,
> but not relevant.

Somewhere in all this mess, I believe RC posted that the OP's
originally posted observations supported his claim (that source
impedance affects line SWR), but yet when I go back and read the OP's
observations, they are that the POWER delivered to the load changes
significantly with line length and the measured line SWR DOES NOT
change noticably.

It seems to me that the OP's observations directly support that the
line SWR does not change with changes in source impedance: if the
transmitter output impedance is not equal to the line impedance, the
additional line can be though of as lumped with the transmitter and
where it connects to the original length would be the point where the
source impedance would be measured...and it would have changed
significantly with added line, while the SWR did not.

Cheers,
Tom

3177. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 15:51:59 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308140751.32260bea@posting.google.com>
Source record: 110622
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

Dwight Stewart <stewartx@earthlinkNOSPAM.net> wrote in message
news:<BB60C4D7.2237B%stewartx@earthlinkNOSPAM.net>...
> "Brian Kelly" wrote:
> >
> > A shallow concrete slab will not support any
> > tower unless the tower is well bracketed to
> > the house. There are only two choices: A large
> > block of concrete for the base or a slab with
> > a house bracket.
>
>
> The word "slab" was probably a poor choice. I was mainly referring to the
> width, not depth, of the concrete. The concrete will pretty much fill the
> entire hole below the ground surface.

OK.

> > Use a mast made from steel pipe. I've used 'em
> > several times, works fine. Assume the bottom
> > section of the mast is made from a full length
> > of standard 2.5" Schedule 40 galvanized steel
> > pipe x 21 feet long. Top the base section with
> > a couple 10-12 foot lengths of smaller diameter
> > pipe and assemble the mast & antennas. Drive a
> > five foot length of 3" pipe into the ground,
> > clean it out, raise the mast to a vertical
> > position and drop it into the 3" pipe. (snip)
>
>
> To make it freestanding, one would have to use some fairly thick steel
> pipe (both wall thickness and pipe diameter), especially for longer lengths.

That's nonsense. If you want a properly-designed pipe mast you do it
by the numbers, not with amateur "eyeball structural engineering"
and/or broad-brush statements like "have to use some fairly thick
steel pipe . . ". You won't know a thing about any pipe sizes until
and unless you run the numbers. A 40 foot pipe mast analysis is as
simple as it gets in the field of applied mechanics, any sophomore
student in any engineering discipline including the EEs who brought
you your HT can handle the job. A pipe mast is just a classic
cantilever beam.

> And pipe that heavy would almost require a crane to move it around. Because
> of that, steel pipe might be fine for shorter masts (or guyed taller masts

> using thinner pipe), but wouldn't really be feasible for a taller
> freestanding structure (unless one owned a crane, but then the crane itself
> could just be used to support the antennas).

You gather up five buddies. You hang a pulley near the house bracket.
Run a rope from the ground, thru the pulley then down to the midpoint
of the mast. There's your "crane". Three guys walk the mast up and two
pull on the rope and up she goes.
>
> Dwight Stewart (W5NET)
>
> http://www.qsl.net/w5net/

w3rv

w3rv

3178. Re: Tarheel screwdriver Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 16:01:34 UTC
From: James <jimbo@nospam.net>
Message-ID: <3F3BB25C.7F88166B@nospam.net>
Source record: 110623

Hi,

Tahreel attends most of the NC hamfests and has their product on the table along

with those from other companies. It is what is inside that counts, outside can look
pretty and all but if there is junk parts inside it will not last.

Tarheel antenna last because they have quality parts and construction.

When I get my general (soon) time to buy a tarheel antenna !

jimbo

Bill wrote:

> I want to put a screwdrive on the back of a motorhome and have had the
> tarheel recommended to me. I have never heard of it or seen one. do any of
> you have experience with this antenna?
>
> thanks in advance
>
> Bill
>
> W4WEG

3179. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 16:20:33 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <IFO_a.101113$cF.29827@rwcrnsc53>
Source record: 110624

There is NO definition of SWR!!

There is a definition for VSWR!

There is a definition of ISWR!

But, unfortunately, there is NO definition for SWR!! Why don't you
offer one?

Deacon Dave, W1MCE

JDer8745 wrote:
> Someone sed:
>
> "The SWR is based on the ratio of the forward to the reflected power."
>
> But this isn't the *definition* of SWR.
>
> Trivia question: What is the definition of SWR?
>
> 73 de Jack, K9CUN

3180. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 17:02:44 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <UgP_a.58210$Pb7.791842@twister.southeast.rr.com>
Source record: 110625

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308111324.7c3872d@posting.google.com...
> "Jimmy" <Gfender@carolina.rr.com> wrote in message
news:<KcHZa.22761$VR6.415447@twister.southeast.rr.com>...
> > This means your shield has RF on it .
> > Also triming cable has nothing to do with SWR.
>
> In theory, yes. It would be on the constant VSWR circles, assuming
> 50 Ohm transmission line!
>
> Trimming the cable WILL have something to do with the series
> reactance that the PA will see, and may affect the impedance match.
>
>
> Slick

Yes I think you pretty well paraphrased the part of my post you clipped
off..

3181. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 17:18:50 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308140918.2433137e@posting.google.com>
Source record: 110626

kelly@dvol.com (Brian Kelly) wrote in message
news:<d22b54c3.0308140656.7b80695c@posting.google.com>...
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vjlp5p8hlvahb2@corp.supernews.com>...
> > Brian Kelly wrote:
> > >
> > > In the case of a paint can being used for the housing for a dummy load
> > > the outer surface of the can needs to be able to radiate as much power
> > > as possible. A Teflon liner between the oil and inner surface of the
> > > metal can is a thermal insulator and will degrade the ability of the
> > > can and the dummy load to transfer the BTUs in the oil to the air
> > > surrounding the can.
> > > . . .
> >
> > Don't tell my wife that. She's been thinking all along that the food
> > she's been putting in the Teflon lined frying pan has actually been cooking!
>
> Hee! Couple weeks ago I got stupid and tried to fry a couple eggs in a
> bare aluminum pan. I wound up with one edible egg and one which
> alloyed itself with the pan.
>
>
> > Seriously, what you've got is a series of "thermal resistances" in
> > series. This is a legitimate if simplified way of evaluating temperature
> > drop, and is widely used in determining chip temperature of transistors
> > and ICs. From the resistor, you've got the thermal resistance of the
> > oil, in series with the thermal resistance of the Teflon, then the metal
> > can, then finally the resistance of the can-to-air transfer, or
> > "connection". The temperature difference between the resistor and the
> > air is calculated like the voltage in a circuit, where the circuit's
> > "current" is the amount of power being transferred. That is, DT = THETA
> > * P, where DT is the temperature differential, P the power, and THETA
> > all the thermal resistances in series. In electronics, DT is usually in
> > degrees C, P in watts, and THETA in degrees C per watt.
>
> Yup. There isn't a steady-state thermal circuit out there which can't
> be modeled on the bench with a pile of resistors. Gets hairy when
> fluid dyanmics gets into the mix, laminar vs. turbulent flow, etc.
> Ditto the electrical network simulation of mechanical vibrations. A
> lot of grad school theses were written in the general topic area back
> in analog computer days. Mother Nature could care less about the lines
> between engineering disciplines.

May I suggest that you also invoke the laws of partial pressures?
As for those that are using motor oils and transmission fluids for
years
perhaps they should be reported for having weapons of mass destruction
(WMD) !
I am sure the 'authorities' will arrange for pick up for disposal in
Irak
so they can be readily 'found' and the exhausted searchers can finally
come home. We just had a transformer blow up in the County court
house which created multi $ damage to the superstructure .
Perhaps I should suggest that they look for a homemade dummy load gone
bad
and blame it on a CB er.
Art
>
>
> > While the thermal resistance of the Teflon layer is undoubtedly several
> > orders of magnitude greater than the thermal resistance of the can, I'd
> > be willing to bet that it's much less than the can-to-air thermal
> > resistance,
>
> Blow air on the can with a fan. In the limit dunk the can in a bucket
> with water running in/out.
>
> > and probably (because of its very small thickness) even much
> > less than the resistor-to-Teflon thermal resistance through the oil
> > (unless, perhaps, the oil is very rapidly stirred). So, in the big
> > picture, the Teflon layer doesn't make any difference.
>
> Agreed.
>
> Nobody ever died from an engineering troll.
>
> > Roy Lewallen, W7EL
>
> w3rv

3182. Need info on making a boomerang TV antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 17:46:47 UTC
From: NSworley45@aol.com
Message-ID: <3F3BCB37.3A8B6762@aol.com>
Source record: 110627
Cross-posted to: rec.radio.amateur.antenna,sci.electronics.repair

I'm looking for any info on how to make a boomerang shaped TV vehicle roof mount antenna for VHF/UHF use. Or a good used antenna. Please REMOVE the "NS" from my email to reply or call 334-347-5281 (or reply to the group).

3183. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 18:17:38 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjnki2m9ct3u9d@corp.supernews.com>
Source record: 110628

You must not have seen my posting yesterday on this thread, where I gave the definition. Do I need to post it again?

Roy Lewallen, W7EL

JDer8745 wrote:
> Someone sed:
>
> "The SWR is based on the ratio of the forward to the reflected power."
>
> But this isn't the *definition* of SWR.
>
> Trivia question: What is the definition of SWR?
>
> 73 de Jack, K9CUN

3184. Re: Connector for Belden 89913?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 18:22:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjnkrm8v4o7d4f@corp.supernews.com>
Source record: 110629

Do those companies sell directly to consumers in small quantities?

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> He could also check out the Amphenol and Amp web sites.
>
> Tam/WB2TT
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vjlmk27s9ffg62@corp.supernews.com...
>
>>You might check with The Wireman. He carries good quality standard N
>>connectors and might be able to get the special one you need.
>>
>>Roy Lewallen, W7EL
>
>
>

3185. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 18:26:46 UTC
From: That Other George <uce@ftc.gov>
Message-ID: <Xns93D792FAB9FDuceftcgov@216.168.3.44>
Source record: 110630
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

I bought a 30 foot tower from my local TV shop a few years back for $35.00 a 10 section. The company that makes it is American Tower I think they are in FL but a call to my local TV shop and he still sells the stuff only the price is now $41.00 a 10 foot section :-) It's free standing to 30 feet with a 3 foot X 3 foot X 3 foot base, or you can do what I did and stick 3 feet of the 30 foot tower in a 3' X 3' X 3' hole and fill it with quickcrete and run the garden hose on it for a few min :-) I used 2 U clamps to clamp it to the house in the middel of the 2nd section so my tower is good to 50 feet I'm told with a 6sq ft load

> Where can I find an inexpensive, freestanding (or lightly guyed),
> antenna
> tower? It doesn't have to support a lot of weight - a couple of small
> 2m radio antennas and one or two scanner antennas. And it also doesn't
> have to be very tall - thirty to forty feet would be just fine. I'm
> sure others would be interested in this also.
>
>
> Dwight Stewart (W5NET)
>
> http://www.qsl.net/w5net/
>

--
That Other George

Please send your spam to: uce@ftc.gov

http://webpages.charter.net/moment/

http://webpages.charter.net/moment/winjunk.htm

3186. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 18:28:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qvhnjv48qul6p42ssuhlm081gaetic27kj@4ax.com>
Source record: 110631

On Thu, 14 Aug 2003 08:30:20 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>
>The subject is why SWR meters might read differently with different
>lengths of coax. Your statements about mismatch uncertainty are true,
>but not relevant.
>

Hi Ian,

Look at the subject line above. Everything reported by me responds directly to it. I notice you have nothing relevant to add in that regard.

To this point NO ONE has responded to the data, nor to the authoritative citations. It would be more useful for you folks to point out error rather than simply arm-chair your way through this with denial. To this point NO ONE has offered any synopsis of my error in method. Such close examination appears to be confined to re-evaluations of the CFA which lack both, and thus make a more amusing target that does not test anyone's skill beyond debate. In the words of Ho Chi Minh: "Paper Tigers."

Also to this point, the only "critics" have been those with a voiced interest in not assigning a value to Source Z, but again demonstrating a more than ample capacity to arm-chair their way through byzantine explanations of what it is "not." Bench work seems to be anathema, however I do enjoy the zen-cartwheels being performed, thanks.

If I were to offer this with the infinite regress of Cecil's logic, hide my data, and embellish my method, you would all be compounding this thread to 600 entries. I don't play that game, sorry to disappoint you fellows, but I don't write to entertain (even if I can do it better than you without really trying - sometimes, like now, opportunity begs). The repetition of data, like denial, is not debate, so I am satisfied to post real bench work once, and pull paper tails until that goes stale.

I am particularly amused by protestations that examination of data is not worth anyone's time, but offering editorialization is. :-)
Clearly most of you should take more pleasure in your amusing recreations.

You guys worry this out of all proportion, you act like this is especially important and it certainly seems to set your teeth on edge. As many would point out, this is only a hobby; it's not like your job

is on the line, or that you have to meet a customer's expectation. :-)

73's
Richard Clark, KB7QHC

3187. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 18:49:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3bda3c_2@corp-news.newsgroups.com>
Source record: 110632

Richard Clark wrote:
> I am particularly amused by protestations that examination of data is
> not worth anyone's time, but offering editorialization is. :-)

For those of us who missed the data, what date and title does
that posting possess?
--
73, Cecil, W5DXP

3188. Re: Steppir Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:06:32 UTC
From: buddy clark <buddycl@swbell.net>
Message-ID: <Y4R_a.1696$B77.1359@newssvr22.news.prodigy.com>
Source record: 110633

i've owned a 3 element for about 18
months now. i'm quite pleased with
it's performance and the level of support
i receive from john & company. i met
them at hamcom in arlington, tx several
months back and they are a pleasure to
talk to face to face. i especially like the
180 degree flip function.

pros: good f/b, gain, side rejection, fairly
light weight, easy assembly. essentially a
monobander from 13.8 mhz to 54 mhz.

cons: a bit on the expensive side, you really
need to keep varments away from the control
cable.

final recommendation: buy one, you'll love it

larry
kd5foy

"Carl Walthall" <motorola1@insightbb.com> wrote in message
news:ZzD_a.95775$cF.29132@rwcrnsc53...
> Can anyone tell me what they think about the Steppir Antenna's? I have a
> High Sierra and like the antenna alot but hate the manual tuning.
>
> Thanks in Advance Carl
>
> http://www.steppir.com/
>
>

3189. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:08:11 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <i5lnjv88r8m8shh3clc6j9kdi049j9tk0b@4ax.com>
Source record: 110634

On 14 Aug 2003 08:30:53 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<d4I9xpHMqzO$EA0l@ifwtech.co.uk>...
>...
>> The subject is why SWR meters might read differently with different
>> lengths of coax. Your statements about mismatch uncertainty are true,
>> but not relevant.
>
>Somewhere in all this mess, I believe RC posted that the OP's
>originally posted observations supported his claim (that source
>impedance affects line SWR), but yet when I go back and read the OP's
>observations, they are that the POWER delivered to the load changes
>significantly with line length and the measured line SWR DOES NOT
>change noticably.
>
>It seems to me that the OP's observations directly support that the
>line SWR does not change with changes in source impedance: if the
>transmitter output impedance is not equal to the line impedance, the
>additional line can be though of as lumped with the transmitter and
>where it connects to the original length would be the point where the
>source impedance would be measured...and it would have changed
>significantly with added line, while the SWR did not.
>
>Cheers,
>Tom

Hi Tom,

Thanks for actually looking. You are indeed correct in your statement
about the "small" variation of SWR:
>SWR DOES NOT change noticably.
This, too, is consistent with the data I have offered. Casual
benchwork is as likely to reveal that as not. This is to say that no
real examination was originally performed, it was discovered by
accident (the portents of the variation of Power were more
distracting) and the readings were discarded as, perhaps, simple
statistical fluctuation. If through the sheer chance of opportunistic
luck in drawing different line lengths into the original posting,
those values may have been far more significant. If I had trimmed my
data to a very short interval, it would have matched his. The
variation follows a sine curve shape (if anyone had actually viewed
the data, this would be obvious) and you can take several readings
along the slope with alarm, or several along the crest to
indifference. This simply reveals that the original posting lacked

many essential details, but contained many confirmatory ones.

This does not change the fact that as a subset of my data, that it lacks supporting my results simply because it does not go to the breadth nor depth of my study. I in fact offered three significant quotes of his original observations made that are classic indicators of Mismatch Uncertainty. The simple point of that issue is that you cannot measure Power with any promise of accuracy when placed between two discontinuities. Unless you can describe all paths. This is a staple of simple wave interference. It necessarily follows that if you cannot determine Power due to this indeterminacy, you have no chance of determining SWR (you can certainly offer a reading and go on about life blithely unaware).

Simply put, I don't see anyone here willing to put their "faith" to the test; and I am the only one here with my skin in the game. I am far more likely to accept error through honest effort equal to mine that demonstrates it. But critics to this point have not only refused to step up to the bench, but they have also denied the argument through aggressively ignoring my methods and their results. I observe far more reading of my comments here, than with that one posting. As such, it is more than obvious that entertainment is the driving force for this criticism, not technical review.

73's
Richard Clark, KB7QHC

3190. Re: Connector for Belden 89913?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:19:01 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308141119.7078048b@posting.google.com>
Source record: 110635

Thanks Roy and Tam (and the person who emailed). Wireman, Amphenol
and Amp don't help, but HD Communications does have connectors, both
clamp and crimp, for this cable. Google came through again.

Cheers,
Tom

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<qZOcnerW_IIBB6aiXTWJiA@comcast.com>...
> He could also check out the Amphenol and Amp web sites.
>
> Tam/WB2TT
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vjlmk27s9ffg62@corp.supernews.com...
> > You might check with The Wireman. He carries good quality standard N
> > connectors and might be able to get the special one you need.
> >
> > Roy Lewallen, W7EL

3191. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:25:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ujnnjv0l4b81hjni7kggggsdorq1e8cr9p@4ax.com>
Source record: 110636

On 14 Aug 2003 07:29:40 -0700, kelly@dvol.com (Brian Kelly) wrote:

>
>I spent a day and a half on the phone calling around trying to buy a
>lousy two pounds of a specific DuPont Teflon-bearing grease. The
>worn-out DuPont tech rep finally wrote an order for a two pound sample
>but I had to drive 50 miles to the Dupey warehouse to pick it up.
>
>I imagine it's much easier to simply run a web search today.
>
>> 73's
>> Richard Clark, KB7QHC
>
>w3rv

Hi Brian,

That is exactly how I get all my exotic electronics parts, engineering samples. FREE. Need a 24 bit ADC? How about GHZ GBWP amps? Precision V-F-V converters? FREE.

Now, if I wanted to buy one they would tell me to take a hike.

As for your last comment about web searching. That is my current business. I build web robots and if anyone is interested, my current model that I call GrantBot will search through nearly 2000 pages of legislation funding of Grants offered and awarded by every department, agency, institute, consortium, office, bureau, center, program, group, division, administration, service, ... in the government.

This offer is free to individuals.

I have a generic robot that is workable, but which remains to gain recent work's improvements. However, it requires that you have some foreknowledge of potential links (it is a targeted web robot, not a free roaming one).

That too is free to individuals.

When I say individuals, that means those not using it as a tool of their paid work. If you are a sole proprietor, I still consider you an individual.

73's
Richard Clark, KB7QHC

3192. Re: Connector for Belden 89913?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:31:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <QoadnSE-xOwWfqaiXTWJiw@comcast.com>
Source record: 110637

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vjnkrm8v4o7d4f@corp.supernews.com...
> Do those companies sell directly to consumers in small quantities?
>
> Roy Lewallen, W7EL

That's a gray area, but let's say no. My thought was to find a part number, which he could then call any one of a dozen people up with, and ask if they have it, without giving a long explanation. In fact, maybe the first place he should go is the Belden web site, they may have a recommendation.

Actually, there may be a simpler solution. Put about a 4 - 6 inch length of heat shrink tubing over the jacket to build it up , and use a normal connector intended for 9913. There may be a problem with an RG8 type connector, in that the center conductor may not go in the pin hole.

Tam/WB2TT

3193. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:51:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1uonjvs913lruobripnsu5nkml0fatltam@4ax.com>
Source record: 110638

On Thu, 14 Aug 2003 10:52:49 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:
>
>There is an FCC approved model for a telephone line input impedance at voice
>frequencies. I can't remember the details, but it was something like two
>resistors in series with a sum of around 1000 Ohms; the larger resistor
>being shunted with a fair sized capacitor. You need this model to design,
>for instance, a hybrid for a modem.
>

Hi Tam,

Sounds more like the model for the K-1 relay, or a hybrid decoupling
network or balancing network description. Telephone is the land of
600 Ohm specifications (min. 550, max. 850) for many good reasons
related to their networks.

The passband for voice frequencies does not demonstrate any simple one
time constant roll-off characteristic. Ma Bell couldn't afford that
kind of waste.

73's
Richard Clark, KB7QHC

3194. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:52:06 UTC
From: Joe Strain <jstrain1@cfl.rr.com>
Message-ID: <GLR_a.46003$On2.2216083@twister.tampabay.rr.com>
Source record: 110640
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

THIS PLACE MIGHT BE A START if you got the surfin time for searching

http://www.fairradio.com/0mk-12.htm

12 foot Military Mast Kit. Comes with: three 47" long x 1 3/8"
fiberglass mast sections, one 8" top mast section which holds
two horizontal arial antennas and also has 16 feet of RG-58 coax
with a male BNC connection at the end, two 28" antenna elements
that thread to the top section, one guy ring with guy rope, three
9" stainless steel stakes, one 27" long mast base which mounts
directly into the ground, and O.D. green carrying bag with handle.
There is no indication of a model number on the assembly.
Excellent for field day or other portable antenna use.

12 lbs sh. #MK-12, $59.50 each; 2 for $99.50

yodar

"Dwight Stewart" <stewartx@earthlinkNOSPAM.net> wrote in message
news:BB5D9FB4.221CE%stewartx@earthlinkNOSPAM.net...
>
>
> Where can I find an inexpensive, freestanding (or lightly guyed),
antenna
> tower? It doesn't have to support a lot of weight - a couple of small 2m
> radio antennas and one or two scanner antennas. And it also doesn't have
to
> be very tall - thirty to forty feet would be just fine. I'm sure others
> would be interested in this also.
>
>
> Dwight Stewart (W5NET)
>
> http://www.qsl.net/w5net/
>
>

3195. Re: double sized quad antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 19:57:06 UTC
From: Eskay <sieb_kNOS@PAMyahoo.ca>
Message-ID: <uOR_a.57216$PD3.4585681@nnrp1.uunet.ca>
Source record: 110639

Brian Howie wrote:

> In message <b0ce6aad.0308110842.28db8939@posting.google.com>, W8EJO
> <rfmscpa@earthlink.net> writes
>
>> Brian
>>
>> See ARRL Antenna Compendiums Vol 5, pg 55 & Vol 6, pg 227 for
>> construction articles. Claimed gain is approx. 2dbd over 1 wl quads &
>> 2.5 dbd over yagis with same boom length.
>>
>> Terry
>> W8EJO
>>
>> Brian Howie <brian@nospam.demon.co.uk> wrote in message
>> news:<+lLfUOBDAqN$EwJB@b-howie.demon.co.uk>...
>>
>>> I recall many years ago seeing a 3 ele quad antenna in one of the RSGB
>>> handbooks. Instead of the usual 1 lambda loops it used 2 lambda and had
>>> an open circuit at the top of each element -it may also have been fed by
>>> a 1/4 matching transformer. The claimed gain was high. Does anyone have
>>> any info ?
>
>
> Thanks, I'll see if I can find a copy of the ARRL Antenna Compendium.
> Does the antenna have a name so that I can do a search for it on the web?
>
> Brian GM4DIJ
>
The article in Volume 5 page 55 is called: The K5BO BI-Square beam.
Author Rick.Bibby K5BO.
The article in volume 6 page 227 is called: The expanded Quad (X-O)
Antenna for 144 Mhz. Author Fred Smith W6DV (SK)
73 de Eskay, VE3JUA.

3196. Re: Steppir Antenna?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:02:23 UTC
From: Jim - KK1W <jmullen@rockys.com>
Message-ID: <vjnqlirfll5eb7@corp.supernews.com>
Source record: 110641

Carl,

I've had a 3 element up since early July. Not a long time to comment on durability but I feel I can comment on performance.

I have it up about 50' on a tower. It replaced a Hygain TH3jr at the same height. So far I would say it's far superior to the Hygain. Hard to make comparisons since I took one down and replaced it with the SteppIR but I am able to work just about anything I can hear, even at QRP levels. We have a local net on 10M every week and there were always a few stations that were in the noise at my location. Now they are weak but Q5 copy.

Add to that the ability to tune everywhere from 13.5 to 54 and it's a great antenna. The signals on 17m are really exciting to hear. I have not tried the antenna on 6M as yet so I can't comment on that band.

Plusses:
1. Covers every band with gain and good swr.
2. The ability to switch 180 degrees or bi-directional in a few seconds.
3. Good gain, not bad F/B

Minuses:
1. Heavy, at around 45# it's no lightweight!
2. Moving parts. Have to wait until we go through a typical New England winter to really know how it stands up.
3. Expensive

I followed the newsgroups over the last year and from everything I would expect it to survive our winters. Its not cheap, but a Force 12 five band antenna is around $900 and a 10 element log is not much cheaper. I have it interfaced with my rig and computer and it tracks the rig frequency just fine. I have personally talked with the owners both at Boxboro and at Dayton. They are committed to great service and producing a good product. I would recommend them highly.

Feel free to drop me a note off line if you'd like more info.

See a few pictures at: http://webpages.charter.net/kk1w/photo.htm

'73...

Jim, KK1W

"Carl Walthall" <motorola1@insightbb.com> wrote in message
news:ZzD_a.95775$cF.29132@rwcrnsc53...
> Can anyone tell me what they think about the Steppir Antenna's? I have a
> High Sierra and like the antenna alot but hate the manual tuning.
>

> Thanks in Advance Carl
>
> http://www.steppir.com/
>
>

3197. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:05:28 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <nvpnjv8o8nb84jfcglrfd1om37ar68itj1@4ax.com>
Source record: 110642

On Wed, 13 Aug 2003 00:50:34 GMT, "Jimmy" <Gfender@carolina.rr.com>
wrote:

>Only one bad thing about sending hunters out with guns for animal population
>control. They dont take out the weak and those of poor genetic quality. They
>tend to take those from the top of the herd. Only restoring the balance of
>predatory animals will really solve the problem. BTW I am a deer hunter.

That's one of those ...well, yah, kinda, sorta, almost, ...things.
Nature is going to take care of the genetic problems. Without
predators the genetic errors don't usually last long.

As for the weak, reducing the size of the heard leaves more food for
them to get stronger. So even with harvesting the strong the herd
will get stronger.

Yet there is no real, or at least perfect answer...even with predatory
animals. That solution also cycles.

For instance the Fox population cycles greatly from a few healthy
animals to a great many when food is plentiful. Then Mange sweeps
through the fox population decimating it (if you haven't seen it, it
looks something like a terminal case of very painful dandruff). The
heard will drop from over population to almost a rarity in a year or
two. Then the rabbit and varmint populations explode. OTOH "as I
recall" it takes the Fox population about eight to ten years to
recover and then the cycle begins again

Here in the metropolitan area we have a huge coyote population, or at
least far more than most people realize. They prey on deer,
particularly the weak in infirm. They are also good at keeping the
stray cat population down..

Cats who run loose all the time, don't last long around here...nor do
dogs. We also have Bobcats and even this far south in the more highly
populated areas the occasional black bear waders into town.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

>
>"Roger Halstead" <newsgroups@rogerhalstead.com> wrote in message
>news:he0gjvs3oj9g1a9nq1tt09ausf31hk6bea@4ax.com...
>> On Sun, 10 Aug 2003 09:29:49 -0400, "WB3FUP \(Mike Hall\)"
>> <wb3fup@msn.com> wrote:
>>

>> >Take a trip though Fairmont Park in Philly. Nothing green below 4 of 5
>> >foot. Overpopulation is as much a problem as over hunting, a potentially
>> >more serious to humans as diseased animals die..
>>
>>
>> Here they even have limited hunts in park areas and the city forrest
>> to reduce the over populations. Every time they do it's a battle with
>> the environmentalists. I guess they figure starving to death, or the
>> deer being killed by dogs or coyotes is more humane.
>>
>> At least for the time being herd management and common sense is
>> prevailing.
>>
>> I've not had any problems with squirrels getting into the coax...yet.
>> Maybe it's my cat chasing them (and the stray dogs) out of the yard.
>> Big cat. Hates dogs. Loves kids. Chased every dog in the
>> neighborhood home except one. They ever meet and I'll probably be
>> looking for a new cat, although he did get into a fight (attacked) a
>> full grown black lab that came in to the yard...and won.
>>
>> The dog walked up behind the little neighbor girl and the cat went
>> ballistic.
>>
>> When he was much younger he took in after a squirrel. The squirrel
>> went up a tree with the car right behind it. The squirrel bailed from
>> something like 25-30 feet up. The cat never slowed and went right
>> after him. However when the squirrel went up the next tree the cat
>> stopped at the bottom and just looked up.... I think he learned
>> something that day. <:-)) driveways are pretty hard when hit from 30
>> feet up.
>>
>> Roger Halstead (K8RI EN73 & ARRL Life Member)
>> www.rogerhalstead.com
>> N833R World's oldest Debonair? (S# CD-2)
>>
>>
>>
>

3198. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:07:20 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308141207.46fb3c40@posting.google.com>
Source record: 110643

jder8745@aol.com (JDer8745) wrote in message
news:<20030814104153.07099.00001314@mb-m12.aol.com>...

> Trivia question: What is the definition of SWR?

Oh, Jack, that's not a _trivia_ question, that's a _TRICK_ question! :-)

Cheers,
Tom

3199. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:07:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u7qnjv4uc5oopajglo41buin4vks58o2tr@4ax.com>
Source record: 110644

On Thu, 14 Aug 2003 11:49:39 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> I am particularly amused by protestations that examination of data is
>> not worth anyone's time, but offering editorialization is. :-)
>
>For those of us who missed the data, what date and title does
>that posting possess?

Hi Cecil,

How curious of you to have missed this pï¿½an to your style:
"The Cecilian Gambit, a variation on the Galilean Defense revisited"

Even more unfortunate, you are probably the only one who could simply confirm or refute my data through efforts at your own bench. This was posted July 20, some 25 days now and referenced perhaps a couple of days ago.

You might want to compare it to your puzzle that same couple of days ago when you compressed those then 22 days into 66 minutes. ;-)

I would counter your puzzle by moving the load outside of your hypothetical room (same load, same line, same drive, same room too). That can wait however.

73's
Richard Clark, KB7QHC

3200. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:13:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3bedd4$1_2@corp-news.newsgroups.com>
Source record: 110645

Richard Clark wrote:
> How curious of you to have missed this pï¿½an to your style:

Not curious at all, Richard. My Mother is in the hospital
with terminal leukemia.
--
73, Cecil, W5DXP

3201. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:17:40 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308141217.1a70e32e@posting.google.com>
Source record: 110646

Richard,

Thank you very much for posting that reference to John Juroshek's
article. It happens to cover a topic very near and dear to my heart,
and I called John and we had a nice chat about it. In addition, I
told him where I saw the reference, and asked him if he would say that
the SWR on a line, in steady state excitation, with a source at one
end and a load at the other, depended on the source's source
impedance. He said it of course does not, and cannot understand how
you would have interpreted it that way.

Should I check with any of the other authors?

Cheers,
Tom

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<b44ijvsea7ucp6tnb6ipqgk3f2uq6blquk@4ax.com>...
> On Tue, 12 Aug 2003 02:48:49 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
> >Almost correct.
> >
> >The transmitter output impedance has no effect whatsoever on the line's SWR.
> >
> >Roy Lewallen, W7EL
> >
>
> Hi Roy,
>
> Entirely incorrect.
>
> Transmitter output impedance that does not conform to transmission
> line Z, when presented with a mismatched load through that line, adds
> mismatch uncertainty in the form of an indeterminate SWR and
> indeterminate Power to the load.
>
> This has already been demonstrated twice. This has long been
> documented with NBS/NIST references going back 4 decades. There is
> nothing mysterious about it at all, and it conforms to the rather
> simple principles of wave interference so poorly presented by Cecil in
> months past.
>
> The authoritative site:
> http://www.boulder.nist.gov/div813/index.html

>
> Direct reference:
> "Juroshek, J. R.; A Direct Calibration Method for Measuring
> Equivalent Source Mismatch; Microwave J., pp. 106-118;
> October 1997
>
> Obscure references:
> http://www.boulder.nist.gov/div813/rfelec/device/Publications/MetrologyPublications/ARFT
G00S_n2nNet.pdf
> "With vector measurements of the generator and meter reflection
> coefficients ï¿½g and ï¿½m, respectively, the power of the incident
> signal am can be related to the power of the source."
>
> http://www.boulder.nist.gov/div813/rfelec/noise/publications/00_NFRad_ARFTG.pdf
> which describes radiometer calibration (perhaps too exotic for this
> group)
> "tests are based on two assumptions. First, the network responds
> linearly to our signal (no power compression), and second, the
> radiometer is sufficiently isolated from the source impedance."
> ...
> "One of the assumptions made in deriving eq. (2) was that the
> output from the radiometer is not dependent on the source
> impedance. In the construction of the radiometer, two isolators
> are inserted at the input of the radiometer to isolate the
> radiometer from the source."
> ...
> "The mismatch uncertainty depends strongly on the poorly known
> correlation between uncertainties in the measurements of different
> reflection coefficients, and so we use the maximum of the
> uncertainties obtained by assuming either complete correlation or
> no correlation whatsoever."
>
> "Forthcoming Paper: Influence of Impedance Mismatch Effects on
> Measurements of Unloaded Q Factors of Transmission Mode Dielectric
> Resonators"
> IEEE Transaction on Applied Superconductivity
>
> "Analysis of Interconnection Network and Mismatch in the
> Nose-to-Nose Calibration
> Automatic RF Techniques Group , June 15-16, 2000 , Boston, MA -
> June 01, 2000
> "We analyze the input networks of the samplers used in the
> nose-to-nose calibration method. Our model demonstrates that the
> required input network conditions are satisfied in this method and
> shows the interconnection errors are limited to measurement
> uncertainties of input reflection coefficients and adapter
> S-parameters utilized during the calibration procedure. Further,
> the input network model fully includes the effects of mismatch
> reflections, and we use the model to reconcile nose-to-nose
> waveform correction methods with traditional signal power

> measurement techniques."
>
> As I mentioned, obscure references. However, given the impetus of
> their discussion is long known (and that I have already provided the
> original references they rely on), NIST presumes the investigators
> already have that basis of knowledge.
>
> 73's
> Richard Clark, KB7QHC

3202. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:28:27 UTC
From: Joe Strain <jstrain1@cfl.rr.com>
Message-ID: <LhS_a.46017$On2.2220160@twister.tampabay.rr.com>
Source record: 110647

Do they still sell sulfur candles...Solid sulfur and a binder in a what looks like s SKOAL tin, with a wick.

We'd put that on a tin pieplate in the attic, light it off, and go out in the yard for several hours

Everything in the attic would leave town or die

Yodar
==========
"Mike Coslo" <mcoslo@adelphia.net> wrote in message
>
> Heh! As one of the veterns of the squirrel versus human wars, I tried
> the live trap route, and it doesn't work at all. You might catch one,
> but that's about it. Here in the squirrel capital of central PA, we have
> dozens of the little buggers. I had to seal up every opening in my
> house, and seal the corner molding on my vinyl siding. Brats would climb
> up there and munch a hole into the attic. Then they got in through the
> triple walled chimney. I found that by chance. So I had to put wire
> cloth on that. But wattya do about the ones who already got into the
> attic? I made an escape route by drilling a hole in the side of the
> house entering into the attic, and put a long narrow box over it so that
> would jump out when they got thirsty and hungry enough. We're at a
> standoff for the moment......
>
> - Mike KB3EIA -
>
>

3203. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:35:10 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <0vqnjvsru7niqr7g2qa06cikbsl62fi6l7@4ax.com>
Source record: 110655

On Mon, 11 Aug 2003 23:44:50 GMT, Mike Coslo <mcoslo@adelphia.net>
wrote:

<:-))

Tree rats are one of the smartest animals around. But they do cook up
good. <:-))
>
> Heh! As one of the veterns of the squirrel versus human wars, I tried
>the live trap route, and it doesn't work at all. You might catch one,
>but that's about it. Here in the squirrel capital of central PA, we have

They were wrecking our bird feeders so we purchased one of the new
big ones that have a top of solid plastic that kinda looks like an
umbrella, but smooth.

The little buggers slid down the wire and then chewed through the top
where the attachment points fits.

Sooo...as I'm building a fiberglass airplane, I took a bunch of
"milled fibers" (just a lot of short fibers that almost make a springy
like powder. Kinda like a cotton ball but without the adhesion)

I mixed up a batch of mill fiber, cabosil (silicon dioxide) and Vinyl
Ester Resin (Dow Derakane) and filled the hole as well as the recess
on the inside of the top.

It must be the fibers as they absolutely will not bother that feeder
any more, although they do try to jump from the tree to the side of
it. That usually alerts my cat who is tall enough to stand on his
hind feet and put both front paws around the dead bolt on the door.
I've seen him pick birds out of the air at 6 feet and he's chased
every dog in the neighborhood home save one.

We had only had him for a few months when he took in after a squirrel.
The squirrel headed up the nearest tree...with "Streak" right behind
him. When the squirrel ran out of tree with the cat closing in the
squirrel jumped to safety ... except young cat in the heat of the
chase forgot he was 20 to 30 feet up and continued right after the
squirrel. Darn near landing on him too...Cat landed in the drive way
with a sound much akin to a ripe watermelon being dropped. He
immediately chased the squirrel to the next tree...but apparently he
had learned something...or was out of wind...He sat down and just
looked up. Yet I have seen him at more than twice his young size
still chase them up a tree, but I've never seen him jump out of the
top of one after a squirrel again.

>dozens of the little buggers. I had to seal up every opening in my
>house, and seal the corner molding on my vinyl siding. Brats would climb

Try throwing a hand full of mothballs around up there. That *usually*
drives them out.

Here it's not a problem because the Yellow Jackets will build nests
any where the tree rats could get in and the tree rats seem to avoid
the Yellow Jackets. Damn things were building a condo under the eves
at the front of my shop. The last I had noticed it was about the size
of a lemon and I dosed it with wasp and hornet killer. Then a friend
stopped by to look at the airplane project and antique radio station.
He wife remarked about he nest. I thought she was talking about the
lemon sized one...It had grown! Twas about a foot tall and nearly a
foot across.

I waited till after dark, turned on the outside spots which are only
about a foot from the nest and thoroughly hosed it with wasp and
hornet killer. Then knocked the remains down using a piece of
conduit. When I knocked it sown there were about 30 or 40 of them
still full of life in there. due to the lights they kept flying into
the siding which was covered with the bug killer so they didn't last
long.

Yesterday I took care of three more a the back of the house and two on
the front.

Last year I destroyed over 40 some nests in the yard. (in my tower
legs, under shingles, in pipes, drains, yard equipment, under siding
They built one nest under the siding near the south peak that actually
pulled the siding loose.) I think I used something like 27 cans of
Wasp and Hornet killer last year. The Local "Lowe's " store was
carrying the stuff in truckload lots. They said they had never sold
so much of the stuff and people were buying it by the case.

>up there and munch a hole into the attic. Then they got in through the
>triple walled chimney. I found that by chance. So I had to put wire
>cloth on that. But wattya do about the ones who already got into the
>attic? I made an escape route by drilling a hole in the side of the
>house entering into the attic, and put a long narrow box over it so that

Try food (peanut butter?) at the bottom end and grease the inside.
If the attic is sealed up you can eventually go up and carry them
out....if you can stand the smell... OTOH if they get hungry enough
they will chew through most anything.

>would jump out when they got thirsty and hungry enough. We're at a
>standoff for the moment......

We also have a yearly batch of Raccoons that pretty much demolish our
bird feeders.

Good Luck,

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>
> - Mike KB3EIA -

3204. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:38:46 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <cnsnjvcn5gmvj6lc0k3fdjv6rctnnvelrr@4ax.com>
Source record: 110648
Body handling: HTML body converted to readable text

On 12 Aug 2003 13:22:46 GMT, derswede@aol.comspam.com (AA) wrote:

><performance/complex/retractable at the Gladwin Airport (GDW) one night when a
>big doe decided she wanted to be on the other side of the runway >>
>
>Ouch....I've hit birds before (biggest...an owl...collapsed the leading edge on
>the Luscombe) but a friend, landing on a private lighted strip one evening,
>managed to turn 10 Black Angus cows into steak and hamburger. The owner forgot
>to clear the field when he turned on the landing strip lights. The pilot and
>passenger walked away, but the Beechcraft Bonanza (cousin to Roger's Debonair)
>was totalled. Barbara, the pilot, said she didn't suspect a thing until
>touchdown and one cow turned towards the approaching airplane. "Shining eyes"
>is all she saw. Think she's vegetarian today!!! (joke)

Other than the prop and engine that is like trying to beat a big
animal to death with a bunch of empty beer cans. The beer cans
usually don't fare too well. <:-((

>
>As for the coax, I've use the sour apple stuff...local squirrels apparently
>don't like it, and wander off to greener pastures. 'Course, when all else
>fails, a .22 and some CB shells take care of the rest. Thank goodness for
>living in the South and not living in a city.
>

I haven't seen "CBs" in years.
Aim careful. They can be harder on the coax than the squirrels.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>A

3205. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:40:45 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <cusnjv4smqemo3hbi8copqoolfccn3qksd@4ax.com>
Source record: 110649

On Tue, 12 Aug 2003 01:03:24 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>> > Doc, tough little buggers, eh? I didn't realise squirrel meat needs
>> > tenderising.
>>
>> It's not tough normally, especially if they were roadkills and have
>> been out in the weather for a couple days.
>>
>In hot weather, do gourmets prefer to wait a few more days and enjoy the
>maggots?
>
Just think of them as mobile rice.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

3206. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:48:40 UTC
From: Mike Coslo <mcoslo@adelphia.net>
Message-ID: <3F3BF5EC.2080609@adelphia.net>
Source record: 110650

Joe Strain wrote:
> Do they still sell sulfur candles...Solid sulfur and a binder in a what
> looks like s SKOAL tin, with a wick.
>
> We'd put that on a tin pieplate in the attic, light it off, and go out in
> the yard for several hours
>
> Everything in the attic would leave town or die

Hmm, I've never seen one, but it sounds interesting. It would be
noxious enough, but after the smoke dissapeared, should be safe enough.

- Mike KB3EIA -

3207. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:54:27 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <23tnjv8fqktm5bi3c09i03gg02jvvl1mcv@4ax.com>
Source record: 110652

On 12 Aug 2003 09:08:08 -0700, kelly@dvol.com (Brian Kelly) wrote:

>"DOUGLAS SNOWDEN" <snowden@peoplepc.com> wrote in message
news:<vje2dv9nrs1k4c@corp.supernews.com>...
>> I am still trying to decide what type of tower to buy for a house I will be
>> moving into. I would like something I can handle easily by myself, meaning
>> either crankup or tiltover aluminum. I was thinking about maybe a Heights
>> or Universal aluminum 50-60ft on a tiltover base, not the foldover base. To
>> save money I would like to fabricate some sort of steel post along the side
>> of the tower, with a pulley/winch arrangement. Not being an engineer, I am
>> looking for ideas on how high the pole shoule be - maybe as a ratio of the
>> tower height and what would be a good safe diameter pipe. Am I looking for
>> trouble? Typical commercial foldover mechanisms are expensive. Should I
>> just rent a cherry picker for the occasional times I would be tilting the
>> tower over? As light as it would be that should be a solution.
>
>Engineering a tower installation is not rocket science but only for
>for those educated and experienced in the field of structural analyses
>and design. Towers "engineered" by those who don't have appropriate
>backgrounds are potential deathtraps.
>
>Don't raise a full-height tower via a pole, cherry picker or sign
>crane unless you have a grip on all the reaction forces & streses on
>the structure based on the location of the lift point.
>
>Select a catalog tower and stick 100% to the manufaucturer's
>installation and operation directions. It'll cost more but you'll
>sleep better.

After seeing the work I put into mine, the size of the parts, the
strength of the guys, the 17,000# guy anchors, my wife put her foot
down and said no more climbing the other guy's towers around town.
Course, she says I shouldn't be doing that kind of work for the young
guys at my age although I hear no complaints when I go up and work on
mine. http://www.rogerhalstead.com/tower.htm

We had one who was going to install a 100 foot 25G and mount the rotor
at the base. Although basically a sound idea in theory, he
unfortunately was using 1 1/2 chrome molly tube with 1/2 inch wall
and the rotor was supported between the tower legs about a foot above
the base.

I could barely manage to pick up one section of the tube and he had 6.
(I'm not all that big, but I do lift weights) Imagine the weight on
the rotor and tower base, let alone the momentum from the mass even

without the antennas.

We had a longggg talk.

He decided to mount the rotor on a separately supported steel plate
anchored to big concrete blocks on either side, but finally abandoned
the idea as getting too complex.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

>
>
>> Doug
>>
>> N4IJ
>
>w3rv

3208. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 20:55:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <8esnjv4kkdjurrr56aj9d6i60c8d7uo4pb@4ax.com>
Source record: 110651

On 14 Aug 2003 13:17:40 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Richard,
>
>Thank you very much for posting that reference to John Juroshek's
>article. It happens to cover a topic very near and dear to my heart,
>and I called John and we had a nice chat about it. In addition, I
>told him where I saw the reference, and asked him if he would say that
>the SWR on a line, in steady state excitation, with a source at one
>end and a load at the other, depended on the source's source
>impedance. He said it of course does not, and cannot understand how
>you would have interpreted it that way.
>
>Should I check with any of the other authors?
>
>Cheers,
>Tom
>

Hi Tom,

Feel free to do that. I cannot imagine I hold sway over that anyway.
Do you really need more proof, or is your question an honest enquiry
suggesting you accept the possibility that someone else may actually
stand with me?

You among the many have done more in less time. I can accept
negative, informed response. Can he explain my posting? That is the
more telling as it is MY statement, not your summary of it.

I am not looking to shift the goal posts during the game, the posting
contains the beginning and end of it. It stands alone, or it falls
because of its own errors, not those appended, removed, remodeled,
explained, or fancified through specious "debate." I find more
entertainment in bearding the complacency it meets.

I have seen my results dismissed. I hardly find it surprising, but
with repetition it seems those in chant mode are insecure with their
mantra. After all what purpose is there in saying it twice in a round
of three postings? (or 3 of 5, or 5 of 7....).

73's
Richard Clark, KB7QHC

3209. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 21:02:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <cstnjv8jhtesftssb9q7tjktsvl6dtcfmg@4ax.com>
Source record: 110653

On 14 Aug 2003 13:17:40 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Thank you very much for posting that reference to John Juroshek's
>article. It happens to cover a topic very near and dear to my heart,
>and I called John and we had a nice chat about it.

Hi Tom,

As an after thought, but not secondary in my mind (tho' certainly in the heat of response). You are welcome. I am glad that even the obscure references elicit a positive outcome regardless of how it suits my thesis. THIS is the point of my writing (the rest is simply the struggle of titanic ego).

73's
Richard Clark, KB7QHC

3210. Re: 50 ohm or 75 ohm cable foe dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 21:11:00 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <v0unjv03ku344sa9sbl3s6ekbdubbis76n@4ax.com>
Source record: 110656

On Mon, 11 Aug 2003 13:12:39 -0500, "Tom Sedlack"
<cts050@nospamhere.email.mot.com> wrote:

>I was thinking (finally) about simple dipoles and such and have this
>question:
>
>I plan on constructing some simple dipoles. For fun, I have been modeling
>them using EZNEC. It seems the "common" practice is to feed the antenna with
>50 ohm cable. The antenna feed point impedance is usually ~70 Ohms. Would it
>make more sense to feed a dipole with 75 ohm TV coax to keep the SWR low on
>the cable and have the mismatch at the radio? If I plan on using an antenna
>tuner, would this setup be preferred over 50 ohm feed cable? Does it really
>make any difference?

For a dipole it won't make a nickels worth of difference.
Plus if you look around you may find some of the aluminum hard line
for free. The half inch variety is a tad fragile though. Neither the
1/2 inch or 3/4 inch will make small radius bends well.

Contrary to popular belief, connectors are easy to make...use a brass
coupling (compression fitting) with the coax in one end and a PL-259
in the other for t he 1/2 inch variety.

I prefer the 3/4 inch stuff which is much more sturdy, but takes a bit
more work to make connectors. http://www.rogerhalstead.com/conn.htm
OTOH the loss is very low. For dipoles at a reasonable height the
match is *probably* better than the normal 52 ohm coax.

IF OTOH you want to use flexible coax and aren't running a lot of
power, or into the VHF bands, or long runs I'd not use the TV flexible
stuff with aluminum braid. The aluminum foil covered with tinned
copper braid works fine. The construction depends on who made the
stuff.

I'm no longer using the TV *stuff* in the system here, but it is
mainly due to the architecture of the installation. I use LMR-400 all
the way through and have close to 1500 feet of the stuff even though I
do use a remote switch for the low band wire antennas.
http://www.rogerhalstead.com/tower.htm

>
Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>Just Wondering,
>

>Tom
>
>

3211. Re: Microvert

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 21:21:56 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <csunjvc3le4pfrkg5t8bppg8dctle2q5mg@4ax.com>
Source record: 110654

On 12 Aug 2003 19:52:12 -0700, ve3bts@rac.ca (ve3bts) wrote:

>http://www.antennex.com/preview/archive4/Apr601/microvert.htm
>
>Did anybody try to make this small antenna?Seems like feedline does
>its share of radiating.

Hi OM,

Yes, among many variants.

Yes, it is not exactly admitted to, but neither does the author simply wash his hands of it.

It looks like a simple description of a short antenna fully recognizing losses borne by the shortcuts. If anything, it becomes an issue of craftsmanship and cost as there is very little left to consider.

You might find it easier to tune by sliding the Choke portion of it over a range of distance (I am thinking of the choke as a series of beads over the cable and thus mobile in some sense).

73's
Richard Clark, KB7QHC

3212. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 21:39:01 UTC
From: Frank <nwiuopfbhv@qlvzmrnvlsiprqkc.com>
Message-ID: <01c362ac$7991c880$0125250a@qlvzmrnvlsiprqkc>
Source record: 110657
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

Joe Strain <GLR_a.46003$On2.2216083@twister.tampabay.rr.com>...

^ http://www.fairradio.com/0mk-12.htm
^
^ 12 foot Military Mast Kit.

^ 12 lbs sh. #MK-12, $59.50 each; 2 for $99.50

I've used those before. I wouldn't use it for a home antenna because there isn't much to it but it would make a very nice temporary mast to take car-camping -- or perhaps just to keep in the car for civil emergencies. I'd buy one if I had a car.

I seem to recall that it was longer than 12 foot -- more than three sections anyway -- so I may be remembering another kit. Still, it will fit in the trunk very nicely.

Frank

3213. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 21:56:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3c05fc$1_2@corp-news.newsgroups.com>
Source record: 110658

Richard Clark wrote:
> You among the many have done more in less time. I can accept
> negative, informed response. Can he explain my posting? That is the
> more telling as it is MY statement, not your summary of it.

A couple of questions about your data. What kind of coax and
connectors are used for the BVT? What kind of wattmeter was
used for the readings?

The load seems to be 50/3 = 16.67 ohms. I would like to see
the same data for a load of 50 ohms. Seems you are getting
the same resulting effect that I do (on purpose) when I vary
the length of my ladder-line while watching the 50 ohm SWR.
Your results may repeat every 1/2WL. What if you had gone
out to 20 feet instead of stopping at 15 feet?

One last thought. Did you consider common-mode current
possibilities?
--
73, Cecil, W5DXP

3214. Re: G5RV 450 ohm or 300 ohm Phasing line

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 22:11:57 UTC
From: Andy <dx90@blueyonder.co.uk>
Message-ID: <TOT_a.112$Cp4.94@news-binary.blueyonder.co.uk>
Source record: 110659

Thanks all! For all your input.
I have all the info needed know to move forward with this.

73 de Andy

"Andy" <dx90@blueyonder.co.uk> wrote in message
news:xOd_a.246$rp.66@news-binary.blueyonder.co.uk...
> Hi all
>
> If I choose G5RV Half or full size antenna what is the best phasing line
to
> use and why 450 ohm or 300 ohm. I will be using a internal ATU on my
> transiever.
>
> If I go for the full size G5RV I will have to use the first 66 feet
straight
> harizontal up at 30 feet and the last 36 feet at a right angle sloping at
45
> degrees, will this work ok?
>
> Thanks
>
> Andy
>
>

3215. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 22:13:24 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhh1i4$e2$1@titan.btinternet.com>
Source record: 110660

This Earth, a tiny plot isolated in the vacuum of space, is already overpopulated with people.

Its resources are being seriously depleted, polluted - food, clean air, clean water, timber, oil.

But various facilities for selective culling have been available and employed with ever-increasing efficiency for 58 years. Genetic Engineering is being kept in reserve.

The question arises, who or what selects they who do the selecting ?

3216. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 22:25:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3c0cc2$1_2@corp-news.newsgroups.com>
Source record: 110662

Reg Edwards wrote:
> But various facilities for selective culling have been available and
> employed with ever-increasing efficiency for 58 years.

Hey, Reg, did you hear they've crossed a human and a rabbit
in China?
--
73, Cecil, W5DXP

3217. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 22:25:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <i82ojvckheg7eo46rf2b4c5lnt363261op@4ax.com>
Source record: 110661

On Thu, 14 Aug 2003 14:56:27 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> You among the many have done more in less time. I can accept
>> negative, informed response. Can he explain my posting? That is the
>> more telling as it is MY statement, not your summary of it.
>
>A couple of questions about your data. What kind of coax and
>connectors are used for the BVT?

hardline of RG-58 dimension;
only two connectors, the gozinta, and the comesoutta (never changed
throughout any variation nor calibration).

> What kind of wattmeter was
>used for the readings?

Bird.

>
>The load seems to be 50/3 = 16.67 ohms. I would like to see
>the same data for a load of 50 ohms.

That is already discussed in the report.

> Seems you are getting
>the same resulting effect that I do (on purpose) when I vary
>the length of my ladder-line while watching the 50 ohm SWR.
>Your results may repeat every 1/2WL. What if you had gone
>out to 20 feet instead of stopping at 15 feet?

I have no reason to think it would offer any change in a periodic
variation already in evidence.

>
>One last thought. Did you consider common-mode current
>possibilities?

Yes.

73's
Richard Clark, KB7QHC

3218. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 22:55:52 UTC
From: Dwight Stewart <stewartx@earthlinkNOSPAM.net>
Message-ID: <BB618CA0.223BE%stewartx@earthlinkNOSPAM.net>
Source record: 110663
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Tarmo Tammaru" wrote:
>
> My first tower consisted of 3 sections of Rohn
> HBX. This gave me 24 feet. To the top of this
> I added a 10 foot piece of 2 inch OD Al pipe.
> This was fastened to the tower with angle iron
> and U bolts at the top plate and the rotor
> shelf. Somebody gave it to me. It actually
> started life as a Hygain vertical. The middle
> of the second section was fastened to the end
> of the garage with TV house brackets. The
> ground mount consisted of three pieces of pipe
> driven into the ground, with 1 bag of concrete
> to add some strength.

Now that is a good idea. We could just add eight or nine feet of pipe to the top of maybe two tower sections. That would give enough height, without breaking the bank. However, the base would have to be stronger. We live in an area where tropical storms are routine and hurricanes are not rare. I don't really expect it to stay up through a hurricane, but would like it to survive most tropical storm winds. A solid concrete base, as described elsewhere, would be better suited for the task.

> BTW, have you considered a roof tower? Even a
> garage roof would give you at least 12 free
> feet.

Yep, the roof is out. We're leasing the commercial building and they're very touchy about their relatively new roofing.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net/

3219. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 23:12:59 UTC
From: Sylvan Butler <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbjo5rr.itf.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 110664

On Wed, 13 Aug 2003 19:30:20 -0500, Dan/W4NTI <w4nti@NOSPAMmindspring.com> wrote:
> "Sylvan Butler" <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid> wrote in
> message
> news:slrnbjli9m.itf.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid...
>> And I've used WD-40 in and around ignition components on several
>> engines and fired things up a LOT better than with the water that
>> was previously there.
>>
>> I suspect WD-40 conducts no better than white kerosene.

> We are discussing RF components. Not High Voltage spark coils and plugs.

No, we were discussing the conductivity of WD-40.

If you think WD-40 has a characteristic that affects "RF components"
and not "High Voltage", you aren't talking conductivity. And in
reference to your other message regarding a car radio, it is not
conductivity of WD-40 that is/was the problem.

WD-40 will change the dielectric constant of air-gap tuning
capacitors, as will anything other than air. Even the residual film
left behind can have an affect. Perhaps it could mess up inductors
as well, but I've not experienced that.

sdb

--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral
busybodies. The robber baron's cruelty may sometimes sleep, his
cupidity may at some point be satiated; but those who torment us for our
own good will torment us without end, for they do so with the approval
of their consciences. -- C. S. Lewis

3220. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 23:45:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhh6vi$7ap$1@titan.btinternet.com>
Source record: 110665

"W5DXP" wrote ...
> Reg Edwards wrote:
> > But various facilities for selective culling have been available and
> > employed with ever-increasing efficiency for 58 years.
>
> Hey, Reg, did you hear they've crossed a human and a rabbit
> in China?

==========

Cec, no doubt stateside genetic engineers have already started work to catch up with a similar cross with antenna feedline-gnawing squirrels plus an additional selling point of a choice of burger-meat flavours. It is what is known as killing two birds with one stone.

Reg, G4FGQ.

3221. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 23:53:51 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <jiV_a.147261$uu5.22641@sccrnsc04>
Source record: 110666

The BIGGEST GUN!!! MIGHT makes RIGHT!!!

Hmmm... Not too religious for a clergyman to say <grin>

Maybe the world will finally develop a sense of moral behavior.

DD, W1MCE

Reg Edwards wrote:

> This Earth, a tiny plot isolated in the vacuum of space, is already
> overpopulated with people.
>
> Its resources are being seriously depleted, polluted - food, clean air,
> clean water, timber, oil.
>
> But various facilities for selective culling have been available and
> employed with ever-increasing efficiency for 58 years. Genetic Engineering
> is being kept in reserve.
>
> The question arises, who or what selects they who do the selecting ?
>
>

3222. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-14 23:54:24 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <QiV_a.147080$YN5.96525@sccrnsc01>
Source record: 110667

A HABBIT!!

W5DXP wrote:

> Reg Edwards wrote:
>
>> But various facilities for selective culling have been available and
>> employed with ever-increasing efficiency for 58 years.
>
>
> Hey, Reg, did you hear they've crossed a human and a rabbit
> in China?
> --
> 73, Cecil, W5DXP
>

3223. re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 00:04:42 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhh82q$mf6$1@sparta.btinternet.com>
Source record: 110668

It won't be long before the ultimate fully automatic ATU is built into transceivers.

We've had AGC ever since the vari-mu screen-grid valve was invented 75 years back. This abolished the RF gain control but no doubt there is still a residue of moaners and groaners.

The present so-called SWR meter (a stupid instrument if ever there was one) can then be abolished from front panels and, indeed, exiled from radio shacks for evermore and a day. Good riddance!

To provide something to talk about, write on SWL cards and enter in log books, only the S-meter need be retained. This can be re-named "Received Signal Strength Meter" and calibrated in more meaningful terms such as decibels relative to 1 micro-watt.

It's obvious from its name, a signal strength meter always has been a power meter. Pre-21st Century Old Wives kindly note. ;o)

G4FGQ, Iconoclast.

3224. Re: Any cure for Squirrels eating antenna cables

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 00:36:30 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjoaohj2adh1b5@corp.supernews.com>
Source record: 110569

I hope it's not a bad habbit. If it is, I hope they've produced nun.

Roy Lewallen, W7EL

Dave Shrader wrote:
> A HABBIT!!
>
> W5DXP wrote:
>
>> Reg Edwards wrote:
>>
>>> But various facilities for selective culling have been available and
>>> employed with ever-increasing efficiency for 58 years.
>>
>>
>>
>> Hey, Reg, did you hear they've crossed a human and a rabbit
>> in China?
>> --
>> 73, Cecil, W5DXP
>>
>

3225. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 00:45:58 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308141645.66e189e8@posting.google.com>
Source record: 110570

An interesting number of significant figures, if it's to cover both
RG-58 and RG-11 types. I'd expect the RG-11 to converge a bit better
to 72-75 ohms, actually. I have a note I made some time ago in a
reference book that says, "Neglecting dielectric loss, if Zo = Ro+jXo,
Xo is approximately -0.180*Ro*A100*VF/f" where A100 is the attenuation
in dB/100 feet and f is the frequency in MHz. There. Now, at least
for RF, people should be able to generate their own tables.

Cheers,
Tom

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhc1e1$oo0$1@hercules.btinternet.com>...
> For anyone who may be interested.
>
> Typical of RG-58 and RG-11 type cables.
> Zo = Ro - jXo
> Xo is always negative.
> Angle of Zo in degrees. Always negative.
> VF = relative velocity.
>
> Freq Ro jXo Angle VF
> ------ ------ ------ ------ ------
> 50 Hz 967 -965 -44.95 0.034
> 1 kHz 220 -213 -44 0.151
> 10 kHz 80 -58 -36 0.41
> 100 kHz 56 -9.3 -9.5 0.59
> 1 MHz 52.4 -2.4 -2.7 0.63
> 10 MHz 50.7 -0.76 -0.86 0.65
> 100 MHz 50.2 -0.23 -0.27 0.66
>
> Smith Chart calculations begin to be inaccurate around 2 MHz and below. So
> do SWR meters.

3226. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 01:08:46 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308141708.17bf07b6@posting.google.com>
Source record: 110571

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f3af0d4$1_8@corp.newsgroups.com>...
>
> By definition. I wonder who invented that definition? It seems pretty
> obvious that not all PA's are Z0-matched so they will always re-reflect
> 100% of the incident reflected power. But that is exactly what that
> definition implies.

Your vocabulary is very confusing here, Cecil. "Incident"
usually refers to the forward power, so when you say "incident
reflected" it's extremely confusing.

Slick

3227. Re: G5RV 450 ohm or 300 ohm Phasing line

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 01:10:27 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <rlcojvc006panql1dld5gna138cj3lh6lm@4ax.com>
Source record: 110712

On Thu, 14 Aug 2003 13:05:13 +0100, "Andy" <dx90@blueyonder.co.uk>
wrote:

>Thanks Mark for your reply.
>It was on the MoonRaker web site http://www.moonrakerukltd.com they called
>it a phasing line on there G5RV.

For better info on the g5rv, from the guy who designed it, see:

http://www.qsl.net/aa3px/g5rv.htm

Bob
k5qwg

3228. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 01:13:09 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308141713.1c2219f@posting.google.com>
Source record: 110572

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjlm8c48i7r4ea@corp.supernews.com>...
> Dr. Slick wrote:
> >
> > Agreed. Then any mismatch loss from PA to the 50 ohm coax is
> > never measured at the meter. So we never really measure the reflected
> > power coming right out of the PA, even if we attach the meter directly
> > to it's output.
>
> No "reflected power" comes out of a PA.
>
> Roy Lewallen, W7EL

Maybe that why you can't measure it.

Slick

3229. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 01:40:33 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308141740.b1c6872@posting.google.com>
Source record: 110573

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjlbh78a3k9md1@corp.supernews.com>...
>
> The observation that changing line length changes the measured SWR is
> regularly reported in this newsgroup, and the explanation is as
> regularly provided.
>
> There are at least three ways this can happen.
>
> 1. The SWR meter is designed for an SWR that's different from the line
> impedance. It's easy to show that this will result in different readings
> for different line lengths. I've measured RG-58 at over 60 ohms
> characteristic impedance, so this can happen even with a perfect 50 ohm
> SWR meter and "50 ohm" line. In this case, changing line length isn't
> really changing the line's SWR, just the meter reading.
>

But a 60 ohm transmission line transformation from a non-50 ohm
load will certainly change the SWR, as it won't be on the constant
VSWR circle anymore.

> 2. There's significant loss in the cable. In that case, the longer the
> distance between the meter and the load, the better the SWR.
>

That's the obvious one.

> 3. There's current on the outside of the coax. This means that the
> outside of the transmission line is actually part of the antenna. When
> you change its length, it changes the effective length of the antenna,
> which really does change the SWR. Current on the outside of the cable
> can also get into a poorly shielded SWR meter and modify its reading.
>
> And this is all in agreement with established theory. So you see, theory
> does say you can change the SWR reading, and in some cases, the actual
> SWR, by changing the coax length. But only under very specific
> circumstances. When observations don't match theory, chances are
> overwhelming high that either the observation is erroneous or
> misinterpreted, or theory is being misapplied.
>
> Roy Lewallen, W7EL

I believe the source of confusion is here:

PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
load
1 2 3

The "+" are connector points. You folks are saying that as you
change the PA (source) impedance, that the SWR you read will remain
the same, even if the incident power changes due to the change in
reflected power at point 1.

This i can agree with, as no matter how much incident power makes
it past the impedance discontinuity at point 1, the system after this
point will theoretically always reflect the same ratio of reflected
power to incident.
But, if you place an SWR meter of the same impedance as the output
of the PA at point 1, you will definitely see a change in SWR at point
1 as you change the PA impedance, as you are changing the reference
impedance (center of Smith re-normalized). This is what i thought you
meant when you said "change the source impedance", but you meant to
say "change the source, but keep the reference impedance the same".

Understood, assuming this is what you guys mean.

Slick

3230. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 01:43:34 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308141743.335248e8@posting.google.com>
Source record: 110574

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<L4p4htDI9yO$EAHC@ifwtech.co.uk>...
> >
> NO - and this is the central point.
>
> When Roy and I are saying:
> >>NONE of them ever involves source impedance.
> - that is exactly what we mean.
>
> We didn't mean there is a hidden assumption about what the source
> impedance is - we meant what we said: it isn't there at all, in any of
> the equations we're talking about.
>
> Look them up; and then go deeper and look at how they are derived. They
> involve only the load impedance and Z0. That's "only", as in "no hidden
> additives."

I believe we are both right, and there is simply a misunderstanding
here.

I believe the source of confusion is here:

PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
load
1 2 3

The "+" are connector points. You folks are saying that as you
change the PA (source) impedance, that the SWR you read will remain
the same, even if the incident power changes due to the change in
reflected power at point 1.

This i can agree with, as no matter how much incident power makes
it past the impedance discontinuity at point 1, the system after this
point will theoretically always reflect the same ratio of reflected
power to incident.
But, if you place an SWR meter of the same impedance as the output
of the PA at point 1, you will definitely see a change in SWR at point
1 as you change the PA impedance, as you are changing the reference
impedance (center of Smith re-normalized). This is what i thought you
meant when you said "change the source impedance", but you meant to
say "change the source, but keep the reference impedance the same".

Understood, assuming this is what you guys mean.

Slick

3231. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 01:46:56 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308141746.1020c917@posting.google.com>
Source record: 110575

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjlme8gg3fqt25@corp.supernews.com>...
> If you ever do see an equation which shows transmission line SWR as a
> function of source impedance, please let me know where you see it. I'll
> add it to my list of untrustworthy sources.
>
> A simple experiment could be set up to disprove it.
>
> Roy Lewallen, W7EL
>

I believe we are both right, and there is simply a misunderstanding
here.

I believe the source of confusion is here:

PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
load
1 2 3

The "+" are connector points. You folks are saying that as you
change the PA (source) impedance, that the SWR you read will remain
the same, even if the incident power changes due to the change in
reflected power at point 1.

This i can agree with, as no matter how much incident power makes
it past the impedance discontinuity at point 1, the system after this
point will theoretically always reflect the same ratio of reflected
power to incident.
But, if you place an SWR meter of the SAME IMPEDANCE AS THE OUTPUT
of the PA at point 1, you will definitely see a change in SWR at point
1 as you change the PA impedance, as you are changing the reference
impedance (center of Smith re-normalized). This is what i thought you
meant when you said "change the source impedance", but you meant to
say "change the source, but keep the reference impedance the same".

Understood, assuming this is what you guys mean.

Slick

3232. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 01:53:37 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308141753.69885bfa@posting.google.com>
Source record: 110576

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f3aeda3$1_8@corp.newsgroups.com>...

I was thinking about how you changed the impedance of your SWR
meter, and I doubt that simply changing the terminating resistors to
ground on both directional couplers is all you have to do.

I believe this because the SWR/power meter needs to be a Zo ohm
Thru, with a microstrip line of a certain dielectric thickness, and
particular width and spacing from the couplers. And you cannot change
these very easily.

Do you have a schematic for us to see?

Slick

3233. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 02:16:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1ufojv8rmuonofvutf8o4o2omc858b338j@4ax.com>
Source record: 110577

On 14 Aug 2003 18:53:37 -0700, radio913@aol.com (Dr. Slick) wrote:

>W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f3aeda3$1_8@corp.newsgroups.com>...
>
>
> I was thinking about how you changed the impedance of your SWR
>meter, and I doubt that simply changing the terminating resistors to
>ground on both directional couplers is all you have to do.
>
> I believe this because the SWR/power meter needs to be a Zo ohm
>Thru, with a microstrip line of a certain dielectric thickness, and
>particular width and spacing from the couplers. And you cannot change
>these very easily.
>
> Do you have a schematic for us to see?
>
>
>Slick

The schematic would hardly differ greatly from one used for CB given the cognizant details are materials and physical placement issues (stray coupling and phase shift) that relate to wavelength dimensions. The only printed change would be component values that, again, were selected on the basis of frequency (and probably very little) or as suggested, the termination values (which are only material if you suck out a lot of power trying to measure it). The only reason to shift those same values, per Cecil's application, is to keep the same scale. Implications of "matching" bear only on how poorly the circuit operates (using a dud of a meter movement). In other words, a photograph with some indication of scale would be far more useful.

The device may be considered a bridge or a directional coupler, beyond that it is only a matter of coupling.

73's
Richard Clark, KB7QHC

3234. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 02:16:18 UTC
From: jder8745@aol.com
Message-ID: <20030814221618.06260.00000003@mb-m19.aol.com>
Source record: 110578

You must not have seen my posting yesterday on this thread, where I gave
the definition. Do I need to post it again?

Roy Lewallen, W7EL

==========

No I saw it right *after* I posted. DUH

Jack K9CUN

3235. Re: Coax Cable vs Freqency

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 03:01:03 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhhidfcrs1@hercules.btinternet.com>
Source record: 110580

Tom sez,
> I have a note I made some time ago in a
> reference book that says, "Neglecting dielectric loss, if Zo = Ro+jXo,
> Xo is approximately -0.180*Ro*A100*VF/f" where A100 is the attenuation
> in dB/100 feet and f is the frequency in MHz. There. Now, at least
> for RF, people should be able to generate their own tables.
============================

Your formula is correct and indeed approximate. But it's not of much use unless you already know Ro, A100 and VF, all of which vary with frequency. It is approximate because it ignores a correction factor related to Sqr{(Wire Resistance) / (Wire inductive reactance)} which varies fast with frequency.

At sufficiently high frequencies, where Ro (whatever that value may be), A100 and VF have settled down, all that is necessary is to set Xo equal to zero and be done with it, just like book-cooking Mr Smith of chart fame did in 1938.

I produced the table to illustrate the peculiar unexpected effects which occur with the smaller, popular diameter coax cables as used by amateurs. I used the words "typical" and "type" in anticipation of remarks such as yours from already educated people. The table applies closely to RG-58. RG-11, as you pointed out, is 75-ohm nominal but its characteristics behave in a similar fashion.

It should be stated that twin, balanced lines of all impedances behave in the same way except that their HF characteristics extend down to considerably lower frequencies.

I had in mind there are now LF amateur bands and anyone who may wish to do transmission line calculations or use his SWR meter at low frequencies should be warned against measuring errors. It's obvious he wouldn't get much help from the present un-ending thread on that subject. ;o)

Use programs COAXPAIR and RJELINE3 for design and performance of transmission lines from power frequencies, audio frquencies, up to UHF using exact classical methods of analysis. Enter data in practical units and obtain results in the form you are accustomed to using. Everybody is familiar with the 1.5-inch diameter wires spaced 12 feet apart striding across the countryside. Have you ever wondered what a 500-mile length would sound like with a telephone at each end?

========================
Regards from Reg, G4FGQ
For Free Radio Design Software

go to http://www.g4fgq.com
==========

>
> Cheers,
> Tom
>
> "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhc1e1$oo0$1@hercules.btinternet.com>...
> > For anyone who may be interested.
> >
> > Typical of RG-58 and RG-11 type cables.
> > Zo = Ro - jXo
> > Xo is always negative.
> > Angle of Zo in degrees. Always negative.
> > VF = relative velocity.
> >
> > Freq Ro jXo Angle VF
> > ------ ------ ------ ------ ------
> > 50 Hz 967 -965 -44.95 0.034
> > 1 kHz 220 -213 -44 0.151
> > 10 kHz 80 -58 -36 0.41
> > 100 kHz 56 -9.3 -9.5 0.59
> > 1 MHz 52.4 -2.4 -2.7 0.63
> > 10 MHz 50.7 -0.76 -0.86 0.65
> > 100 MHz 50.2 -0.23 -0.27 0.66
> >
> > Smith Chart calculations begin to be inaccurate around 2 MHz and below.
So
> > do SWR meters.

3236. Re: Electronically tuned Helix

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 03:01:19 UTC
From: spencer313@yahoo.com
Message-ID: <ed5d175e.0308141901.5936f0dc@posting.google.com>
Source record: 110579

<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=/netahtml/search-bool.html&r=1&f=G&l=50&co1=AND&d=ptxt&s1=ploussios.INZZ.&s2=antenna.TTL.&OS=IN/ploussios+AND+TTL/antenna&RS=IN/ploussios+AND+TTL/antenna>

See US Patent 4,924,238

whru@msn.com (Fred) wrote in message
news:<e52bdeaf.0308111207.48984cf4@posting.google.com>...
> A few years back I read a paper which described an electronically
> tuned HF Helical antenna. It was a shunt fed Helical monopole which
> employed electronically switched PIN diodes to add or subtract helix
> turns. As far as I remember a 6ft helix antenna was resonant between 4
> to 30 MHZ by switching the PIN diodes. Diameter = 19", 20 turns, Q<50,
> average power = 400W.
> Now the question to the antenna experts: was such an antenna ever
> developed and manufactured. If yes, who did.
> Thanks es 73
> Fred
> wb6iiq / dh1nwr

3237. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 03:05:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6mgojvcf1qe7qq8tnu6mjcd4t8l0k8aroc@4ax.com>
Source record: 110581

On 14 Aug 2003 18:46:56 -0700, radio913@aol.com (Dr. Slick) wrote:

>PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
>load
> 1 2 3
> The "+" are connector points. You folks are saying that as you
>change the PA (source) impedance, that the SWR you read will remain
>the same, even if the incident power changes due to the change in
>reflected power at point 1.

Reading a SWR at this point 1 (or 2 or 3), as specified above, would
simply be zero deflection confirming the remainder of the circuit has
no return.
>
> This i can agree with, as no matter how much incident power makes
>it past the impedance discontinuity at point 1, the system after this
>point will theoretically always reflect the same ratio of reflected
>power to incident.

It will reflect nothing, by specification of the circuit above.

> But, if you place an SWR meter of the SAME IMPEDANCE AS THE OUTPUT

But? What has departed will not turn around after the fact of
changing something as immaterial as this presumed meter Z (which is no
more than the minutia of the scale unless circuit gross dimensions
exceed wavelength considerations). If this were significant, the
meter circuit itself would be the point of discontinuity and thus
reflective, but this would be wholly unobserved because
1. The meter pick-up (as it were) follows the discontinuity
2. The power flowing from the meter encounters no other discontinuity
as specified by the circuit above.

Given 2., it follows that zero deflection will still resolve to zero
deflection irrespective of the meter's guts.

To force a reading would require reflection from the output of the
meter's bridge/coupler which simply casts the issue back to a lousy
meter design (but one with apparent high sensitivity - in other words,
it is sucking out a huge amount of power to do the same chore others
do better with less). One can certainly conspire to screw up by
simply ignoring circuit dimension and wavelength - or taking a chance
with selecting an anonymous instrument from the bottom of the drawer
(which is the same thing). Any reading other than zero deflection
from the circuit above would indeed indicate a system failure (the
instrument being part of the system). Take care that failure here is

measured by degree - any reading forces other tests and in and of it
self is not conclusive of anything.

>of the PA at point 1, you will definitely see a change in SWR at point
>1 as you change the PA impedance, as you are changing the reference
>impedance (center of Smith re-normalized). This is what i thought you
>meant when you said "change the source impedance", but you meant to
>say "change the source, but keep the reference impedance the same".
>
> Understood, assuming this is what you guys mean.
>
>
>Slick

Serious SWR measurement at high frequency is far more simply achieved
with greater precision, accuracy, and less impact on the system
employing the rather more creaky methods of a slotted line. With this
approach you can at least relate to the serious considerations of
characteristic Z and wavelength specific issues (and often answered
with simple plumbing components hand crafted once to last decades).
Calibration is as simple as replacing the ruler if it falls off (if
you first confirm that the connections are not reflective, but then we
return to the discussion above).

Once again, it is a chicken and egg problem. You need a better method
of SWR determination to validate a poorer one. There is no such thing
as self validating this particular instrument above HF. A poor Bird
Wattmeter is especially prone to reflective connections (notorious in
fact) and given those connections do this before the reading, many
users are quite satisfied in their state of ignorance. But again,
this hardly amounts to much, unless you wish to achieve an accurate
Power determination. Often the system reflections will eclipse those
of the connectors and still be perfectly useful in an industrial
setting. The user of the Bird in that community doesn't really care
about absolute Power, only relative Power with mediocre absolute
accuracy. Quite often they are simply tasked to confirm levels within
2 or 3dB; the instrument's slop of 1dB is often accounted for within
the methods of measuring those specified levels. The universality of
the Bird is due only to robustness.

Your circuit above is simply the first step in
selecting/calibrating/verifying an instrument. Throw a mismatch into
the game and lights will begin to flash.

73's
Richard Clark, KB7QHC

3238. Re: Electronically tuned Helix

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 03:11:11 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5pjojv0spii5eraf7irpqlf17tve8d61vc@4ax.com>
Source record: 110582

On 14 Aug 2003 20:01:19 -0700, spencer313@yahoo.com (Spencer) wrote:

><http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=/netahtml/search-bool.html&r=1&f=G&l=50&co1=AND&d=ptxt&s1=ploussios.INZZ.&s2=antenna.TTL.&OS=IN/ploussios+AND+TTL/antenna&RS=IN/ploussios+AND+TTL/antenna>
>
>See US Patent 4,924,238
>

A patent for a stack of money. :-)

3239. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 03:30:27 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjokum6dq73997@corp.supernews.com>
Source record: 110583

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vjlbh78a3k9md1@corp.supernews.com>...
>
>>The observation that changing line length changes the measured SWR is
>>regularly reported in this newsgroup, and the explanation is as
>>regularly provided.
>>
>>There are at least three ways this can happen.
>>
>>1. The SWR meter is designed for an SWR that's different from the line
>>impedance. It's easy to show that this will result in different readings
>>for different line lengths. I've measured RG-58 at over 60 ohms
>>characteristic impedance, so this can happen even with a perfect 50 ohm
>>SWR meter and "50 ohm" line. In this case, changing line length isn't
>>really changing the line's SWR, just the meter reading.
>>
>
>
> But a 60 ohm transmission line transformation from a non-50 ohm
> load will certainly change the SWR, as it won't be on the constant
> VSWR circle anymore.

Once again, you're confusing the SWR meter reading with the SWR on the line. When the line and SWR impedances are different, the two are *not* the same. When I speak of the SWR on the line, I mean the SWR on the line, not the meter reading.

Now look at the sentence you wrote. It's not very clear to me, but it would certainly make more sense if you replaced "the SWR" with "the SWR meter reading". Do *not* confuse the two.
>
>
>
>
>>2. There's significant loss in the cable. In that case, the longer the
>>distance between the meter and the load, the better the SWR.
>>
>
>
> That's the obvious one.
>
>
>
>>3. There's current on the outside of the coax. This means that the

>>outside of the transmission line is actually part of the antenna. When
>>you change its length, it changes the effective length of the antenna,
>>which really does change the SWR. Current on the outside of the cable
>>can also get into a poorly shielded SWR meter and modify its reading.
>>
>>And this is all in agreement with established theory. So you see, theory
>>does say you can change the SWR reading, and in some cases, the actual
>>SWR, by changing the coax length. But only under very specific
>>circumstances. When observations don't match theory, chances are
>>overwhelming high that either the observation is erroneous or
>>misinterpreted, or theory is being misapplied.
>>
>>Roy Lewallen, W7EL
>
>
>
>
> I believe the source of confusion is here:
>
>
> PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
> load
> 1 2 3
>
>
>
> The "+" are connector points. You folks are saying that as you
> change the PA (source) impedance, that the SWR you read will remain
> the same, even if the incident power changes due to the change in
> reflected power at point 1.

I'm saying that the line SWR doesn't change when you change the source impedance. I didn't say anything about incident or reflected power anywhere. And I won't. Cecil probably said something about the incident and reflected power, but explanations in those terms are strictly up to him.

If you were to change the impedance of the left hand line (the one between the PA and meter), then the SWR on the left hand line would change, but the SWR on the right hand line wouldn't, and the SWR meter reading would remain the same. For that matter, you can do anything you want between the SWR meter and the PA -- add an impedance of any kind in series or parallel, change the left hand transmission line length and/or Z0, change the power, whatever you want, and it won't change either the meter's indicated SWR or the actual SWR on the right hand line. The rule is that whatever you change, it won't affect the SWR on any line that's "downstream" (toward the load) from the change you made.

> This i can agree with, as no matter how much incident power makes
> it past the impedance discontinuity at point 1, the system after this
> point will theoretically always reflect the same ratio of reflected
> power to incident.

Be really, really careful when you start talking about forward and reflected power. It can very easily lead you to wrong conclusions about what's going on. Just check the postings on this group for the past few months for evidence. All the phenomena you can observe and measure can be fully explained by looking at forward and reverse voltage and current waves, and it's a whole lot less hazardous.

One of the several problems with thinking in terms of forward and reflected power is that it's universally meant to refer to average power. So you've lost all time and phase information, making it impossible to clearly see how the traveling waves interact. If you must deal with "forward power" and "reverse power", do your thinking and calculations with voltage and current waves, then calculate the power when you're all done.

As I said before, the ratio of forward to reflected voltage or current is independent of the source impedance. That ratio, when measured at the load, is simply the reflection coefficient at that point.

> But, if you place an SWR meter of the same impedance as the output
> of the PA at point 1, you will definitely see a change in SWR at point
> 1 as you change the PA impedance, as you are changing the reference
> impedance (center of Smith re-normalized).

No, you won't see a change in the SWR at point 1 as you change the PA impedance. All the fiddling you do with your Smith chart just won't make it happen. Sorry.

The SWR, voltage, current, impedance, power, reflection coefficient, waves, or anything else don't change in response to your Smith chart exercises.

This is what i thought you
> meant when you said "change the source impedance", but you meant to
> say "change the source, but keep the reference impedance the same".

No. When I said change the source impedance, I meant change the source impedance. Surely we don't need a discussion about what "impedance" means? When you get out your grease pencil and change the reference value of your Smith chart, it doesn't magically change the waves on the line on your workbench.

>
> Understood, assuming this is what you guys mean.
>

It's time for me to leave this discussion. I've tried to make my statement as clearly and simply as I know how, but somehow people have decided that I really meant something else, or that there's this condition or that condition that cause exceptions to it, or that it all depends on what you scribble on your Smith chart with a grease pencil. It bears a striking resemblance to a political science (what an oxymoron!) course I took, in which we could make up any definition for anything, or any interpretation of anything anyone said or wrote (and

were encouraged to do so), and all were equally valid. I've spent too much time interacting with engineers and not nearly enough with politicians and philosophers to know how to deal well with this fuzziness. Anyone who really cares can look up the equations in a couple of minutes. I'm sure they're on the web, if you have an aversion to paper media.

Look up the equations, study them, understand them. If you don't believe them, make up your own equations. Then set up a couple of simple experiments to test them, and see which are right. That's how science and engineering are done.

Roy Lewallen, W7EL

3240. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 03:58:49 UTC
From: Dwight Stewart <stewartx@earthlinkNOSPAM.net>
Message-ID: <BB61D2F9.223D2%stewartx@earthlinkNOSPAM.net>
Source record: 110584
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"Brian Kelly" wrote:
>
> (snip) That's nonsense. (snip)

Not in an area with relatively routine tropical storms and the occasional
hurricane.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net/

3241. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 04:01:45 UTC
From: Dwight Stewart <stewartx@earthlinkNOSPAM.net>
Message-ID: <BB61D3A9.223D3%stewartx@earthlinkNOSPAM.net>
Source record: 110585
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

"That Other George" wrote:

> I bought a 30 foot tower from my local TV shop
> a few years back for $35.00 a 10 section. The
> company that makes it is American Tower I think
> they are in FL but a call to my local TV shop
> and he still sells the stuff only the price is
> now $41.00 a 10 foot section :-) (snip)

Not bad at all. I'll check around with some of the local TV shops.

Dwight Stewart (W5NET)

http://www.qsl.net/w5net/

3242. Re: Connector for Belden 89913?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 06:15:33 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308142215.4507c9a2@posting.google.com>
Source record: 110586

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<QoadnSE-xOwWfqaiXTWJiw@comcast.com>...
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vjnkrm8v4o7d4f@corp.supernews.com...
> > Do those companies sell directly to consumers in small quantities?
> >
> > Roy Lewallen, W7EL
>
> That's a gray area, but let's say no. My thought was to find a part number,
> which he could then call any one of a dozen people up with, and ask if they
> have it, without giving a long explanation. In fact, maybe the first place
> he should go is the Belden web site, they may have a recommendation.

Checked Belden first, before I posted. I formed the opinion that it
should be illegal for wire companies to sell RF coaxial cable for
which there are no connectors. ;-) As far as I could tell, Amp and
Amphenol didn't have anything, but Bowmar did. Bowmar seems a bit
hungrier, or else is just set up to run semi-specials. I found them
willing to talk with me about special BNC configurations that would
only sell around a thousand a year, for example, a few years back.

> Actually, there may be a simpler solution. Put about a 4 - 6 inch length of
> heat shrink tubing over the jacket to build it up , and use a normal
> connector intended for 9913. There may be a problem with an RG8 type
> connector, in that the center conductor may not go in the pin hole.

Yes, in fact that's what we have done for now. Two layers of a
particular heat shrink made a snug fit to the clamp nut on the
connectors we already had, and that let the connector assembly work
properly. Much better than the mess the 'lectricians made on the
first try.

Cheers,
Tom

3243. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 06:31:04 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <I6%_a.66333$Pb7.894665@twister.southeast.rr.com>
Source record: 110587

Perhaps that are types and grades of motor oil out there that will work with certain types of resistors I dont think it very practical to research to find which are compatible. Perhaps the oil companies already know. You could make it a project to enquire with them and post the information on this news group.

"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message news:85ed38d.0308110449.1e6d37e2@posting.google.com...
> Russ,
> The point I am making is that some comments are repeated
> so many times they take a life of their own
> Think about it, the resistors of old are a far cry from
> the carbon resistors of today which are not as porous,
> if it is a worry then coat it with epoxy !
> Then there is the "rust" question, the paint cans of today
> have a teflon liner ! Even the latest ham data states that
> motor oil CAN be used (no, it will not explode !) but raise
> a question of "life", possibly a suggestive comment that you
> change the oil every 5000 qso's.
> Certainly industry gives a good guide as to what is the best
> to use for their circumstances but it doesn't rule out every
> thing else for all time, and this includes motor oil of which
> there are many types.
> Regards
> Art
>
> Russ <carlzomer@hotmail.com> wrote in message news:<s34ejvs8t0rafq25r6t2227kdul3vi4s0v@4ax.com>...
> > On 10 Aug 2003 08:19:18 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
> > wrote:
> >
> > >Well it would seem that the 'don't use motor oil' comment
> > >which has been passed on by mouth to mouth over the decades
> > >doesn't seem to stand up to scruteny.
> > >Yes, the question is raised so many times over the years
> > >and the same old stories pop up, but without any
> > >substantiation such that it just appears to be gossip.
> > >One statement mentions attack on resisters, where's the proof,
> > >If it is true then it surely can be easily overcome.
> > >Hopefully this time, one of the many posters over the
> > >years on this subject will make observations that are
> > >relevant to the present day instead of waiting for a book.
> > >Art
> > >

> >
> > Well Art, the detergents in modern motor oils are specifically
> > formulated to dissolve carbon deposits and sludge (largely made up of
> > carbon) and keep in in suspension. I'm pretty sure that the resistor
> > in my Cantenna is carbon. Transformer oil is formulated to have a
> > high dieletric strength. Mineral oil is relatively pure, lightweight
> > petrolatum (like liquid Vaseline(r)) and has a pretty high dieletric
> > strength just because of low impurities. Motor oil? I don't know.
> > ATF? I don't know about that either. What I do know is that the
> > designers of my dummy load specify either transformer oil or mineral
> > oil. That's good enough for me. I'll mosey on down to the
> > transformer shop of the local electric utility and buy the folks there
> > a round of coffee in the morning or over to the veterinary supply and
> > buy a gallon of mineral oil U. S. P. I think it's safer that way. We
> > hams are in interestingly cheap lot. We'll spend thousands on a new
> > rig that could break down tomorrow and then pour a gallon of
> > "whatever" into the dummy load instead of spending twenty bucks for
> > mineral oil or fifty bucks for MFJs transformer oil. This in a unit
> > that with ordinary care will last a lifetime. Sheesh!
> >
> > Russ
> >
> > >
> > >
> > >
> > >
> > >
> > >
> > >
> > >"Keyboard In The Wilderness" <KITW@forest.com> wrote in message
news:<4q8Za.31351$ff.14186@fed1read01>...
> > >> From the Google Group Search Engine: For what it is worth
> > >>
> > >> The Handbook (at least my 1990 edition) has some information on this
> > >> subject.
> > >> In the Station Accessories chapter there are plans to build a couple
of
> > >> Cantenna type dummy loads. They mention an oil sold by Texaco (if I
remember
> > >> correctly) for turbine lubrication that is, according to the author,
the
> > >> same
> > >> oil as is used in transformers. They quote the exact product
designation.
> > >> Apparently, it's sold in minimum 5 gallon quantities and I think it's
about
> > >> $5 per gallon. If anyone's interested, let me know and I'll look up
the
> > >> information and pass it along. It's supposed to be PCB-free, also.
> > >>

> > >> The article also cautions against using motor oil for various
reasons, among
> > >> which is that it attacks the resistor (actually, I think it's the
additives
> > >> that cause the problem).
> > >>
> > >>
> > >>
> > >>
> > >> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
> > >> news:85ed38d.0308090649.58de8f41@posting.google.com...
> > >> > "Keyboard In The Wilderness" <KITW@forest.com> wrote in message
> > news:<fjUYa.31252$ff.5358@fed1read01>...
> > >> > > Jav -- asked many times before -- for the answers go to Groups
> > Google.com
> > >> > > http://groups.google.com/
> > >> >
> > >> > I don,t fully understand why motor oil should not be used
> > >> > in a dummy load! I need to make one so I can calibrate
> > >> > one of my instruments. I intend to use one of the uptodate
> > >> > gallon paint cans that has a PTFE liner and solder the lid on.
> > >> > Since we now have the means to use low wattage signals for
> > >> > tuning up purposes there is obviously no reason to store it
> > >> > in the shack . So what really is the problem with using
> > >> > available oil instead of emulating the aproach of industrial
> > >> > transformers or regurgitating old thoughts ?
> > >> > Art
> > >> >
> > >> >
> > >> >
> > >> >
> > >> >
> > >> >
> > >> >
> > >> >
> > >> > >
> > >> > > Search for Oil For Cantenna or Oil For Dummy Load
> > >> > >
> > >> > > Mineral Oil works well for me.
> > >> > >
> > >> > >
> > >> > > "Javier Henderson" <javier@KJSL.COM> wrote in message
> > >> > > news:863cgbdfxq.fsf@skylane.kjsl.com...
> > >> > > > I got a Heathkit Cantenna recently, sans oil.
> > >> > > >
> > >> > > > Where do I find transformer oil? The few industrial suppliers
> > in my
> > >> > > > area (Monterey, CA) want to sell me drums of the stuff. I only
> > need
> > >> > > > a gallon...
> > >> > > >

> > >> > > > Is motor oil OK to use?
> > >> > > >
> > >> > > > 73,
> > >> > > > -jav w6vms

3244. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 07:06:28 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <1CHXPGC0ZIP$EAqM@ifwtech.co.uk>
Source record: 110593

W7TI wrote:
>Has anyone ever made their own hardline? I'm thinking 1/2 inch copper
>water pipe with a center conductor supported by some plastic discs
>spaced every so often. You might not get it exactly to 50 ohms but I'd
>think the loss would be so low it wouldn't really matter.
>
>Comments?
>
It's certainly possible - and regularly done for short quarter-wave impedance transformers at VHF/UHF - but there are practical problems for making long runs: difficulty of obtaining center rod in long lengths, has to be built on-site, difficulty of splicing, standard connectors have to be adapted... and in the longer term: internal condensation and corrosion, difficulty of repairing...

Those are just a few problems that come to mind ,from experience with using shorter lengths outdoors in a damp climate (though you wouldn't think it right now in England).

Except for those special-purpose applications, it really isn't worth the trouble. It's easier to turn detective and find surplus sources of hardline such as 50-ohm Heliax (used at cellular sites world-wide) or the 75-ohm hardline used in the USA for cable TV.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3245. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 07:12:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ti1pjv8umbvqeug4thi0tnn7f76nqhgsqo@4ax.com>
Source record: 110588

On Fri, 15 Aug 2003 06:31:04 GMT, "Jimmy" <Gfender@carolina.rr.com>
wrote:

>Perhaps that are types and grades of motor oil out there that will work with
>certain types of resistors I dont think it very practical to research to
>find which are compatible. Perhaps the oil companies already know. You could
>make it a project to enquire with them and post the information on this news
>group.
>

:-)

It would make as much sense to fill the can with mud, add one
electrode, and feed it against the shell. Some may no doubt find
their life's mission in then determining what grade of oil (to replace
the water) would improve this option.

It would certainly offer more caloric mass than a resistor, is freely
available, and all would quite agree - conductive and lossy.

[How many errors can you find in this proposal? Submit answers on the
back of a $20 bill and post to:]

73's
Richard Clark, KB7QHC

3246. Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 07:45:32 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <wc0%a.101359$0v4.6995464@bgtnsc04-news.ops.worldnet.att.net>
Source record: 110589

About all that anyone needs to know about an amateur radio amplifier (transmitter) in order to use it properly is the output power level and the required load resistance. The latter is usually 50 ohms for a variety of reasons, most of which relate to convenience, availability of coax cables, test equipment impedance environment, etc. Beyond those values, there is nothing about the amplifier design which is used in designing and adjusting the remainder of the tuner, transmission line and antenna system. The power level is of importance only in telling us how much voltage and current is involved in various parts of the system.

The result is the ultimate in convenience. We need have no intimate knowledge of "what is in the black box" in order to use it properly. In fact, even if we had full knowledge of all the particulars of the design, we would still use only its required load resistance and power levels associated with it modulation waveforms, etc.

Our modern amateur transmitters and amplifiers even have a convenient meter on the front panel that tells us when we have met our obligation to provide a 50+j0 ohm load. It may be labeled "SWR" and calibrated in an unusual scale, but the important thing is that when it reads 0 or "1:1 SWR" that tells us that we have met the load resistance obligation - nothing more or less.

I think that a great deal of confusion over this whole issue comes from two sources:

1. vague efforts to apply the infamous "Maximum Power Transfer Theorem" from the early days in undergrad EE school; and

2. confusing an r-f transmitter output stage with the classical "signal generator" with a dissipative 50-ohm internal resistance.

Forget both of those irritants and concentrate on the required load for the transmitter, which the designer will provide and insist upon, and then adjust the antenna system to provide that load and all will be well.

At no point will anyone, including the r-f amp designer in all likelihood, know or even care what the so-called "internal resistance" of the amplifier happens to be. He demands only one thing: the specified load resistance. Given that, his design will deliver the required power, efficiency, heat load, harmonic content, distortion levels, etc. etc.

I know of no instance in the design of everything connected to the output port of the transmitter where there is need to know anything other than the required load resistance for the amplifier and the power levels (average, peak, etc.).

Why do folks make this so complicated, Ian?

73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

----- Original Message -----
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Newsgroups: rec.radio.amateur.antenna
Sent: Thursday, August 14, 2003 1:42 AM
Subject: Re: Length of Coax Affecting Incident Power to Meter?

> Dr. Slick wrote:
> >
> >> As Roy says, the equations relating any one of these parameters to any
> >> other are all well known. NONE of them ever involves source impedance.
> >
> > Assuming the source impedance is 50 ohms, which it usually isn't
> >with most PAs.
> >
> NO - and this is the central point.
>
> When Roy and I are saying:
> >>NONE of them ever involves source impedance.
> - that is exactly what we mean.
>
> We didn't mean there is a hidden assumption about what the source
> impedance is - we meant what we said: it isn't there at all, in any of
> the equations we're talking about.
>
> Look them up; and then go deeper and look at how they are derived. They
> involve only the load impedance and Z0. That's "only", as in "no hidden
> additives."
>
>
> --
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
> http://www.ifwtech.co.uk/g3sek

3247. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 10:01:08 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <o28pjv0e6jm9qa19qbqsjv1to5k19l2ppa@4ax.com>
Source record: 110590

On Fri, 15 Aug 2003 07:45:32 GMT, "George, W5YR" <w5yr@att.net>
wrote:

>About all that anyone needs to know about an amateur radio amplifier
>(transmitter) in order to use it properly is the output power level and the
>required load resistance.

Hi George,

And us folk need never worry about what is beneath the hood as long as
we don't need a mechanic. Sheesh, haven't you learned to turn the
knob until the meter is full scale? All you have to really remember
to push the button before you talk!

>The latter is usually 50 ohms for a variety of
>reasons, most of which relate to convenience, availability of coax cables,
>test equipment impedance environment, etc.

For which us same folk STILL don't give a fig. Are you some sort of
salesman? Who uses coax when telephone wire is free? You got stock
in this cable stuff? I got satellite and I don't need it.

> Beyond those values, there is
>nothing about the amplifier design which is used in designing and adjusting
>the remainder of the tuner, transmission line and antenna system.

What are you talking about designing? Is your charge card void? Do
the sales clerks ignore you? Have you consider stitching your own
semaphore flags for a hobby instead? At least no one would laugh as
much for all the arm waving.

>The power
>level is of importance only in telling us how much voltage and current is
>involved in various parts of the system.

None of us folk even think of voltage or current, this impotence is
not needed to make a contact. What's the point?

>
>The result is the ultimate in convenience.

Something that us folk take for granted and never give a thought to
because it is exactly that: convenient. Are you writing a magazine
article no one reads? I hope you include lots of pictures. I prefer
Reader's Dogma myself.

> We need have no intimate
>knowledge of "what is in the black box" in order to use it properly.

Us folk would ask "what is in the black box? What are YOU talking
about?" My boxes are brown like any from the liquor store. The only
black box I've seen was at the cemetery. I don't think I will worry
how to use THAT properly - thank you!

>In
>fact, even if we had full knowledge of all the particulars of the design, we
>would still use only its required load resistance and power levels
>associated with it modulation waveforms, etc.

WE? You don't talk like one of us folk!

>
>Our modern amateur transmitters and amplifiers even have a convenient meter
>on the front panel that tells us when we have met our obligation to provide
>a 50+j0 ohm load. It may be labeled "SWR" and calibrated in an unusual
>scale, but the important thing is that when it reads 0 or "1:1 SWR" that
>tells us that we have met the load resistance obligation - nothing more or
>less.

Who looks at that - are you one of those goggle-eyed professors that
try to 'splain the meaning of life? You missed that by a country mile
and still don't seem to have learned about what knobs are for. Twist
one and push buttons until someone talks back. Your black box
obviously has none of the modern conveniences, is it a telegraph?

>
>I think that a great deal of confusion over this whole issue comes from two
>sources:
>
>1. vague efforts to apply the infamous "Maximum Power Transfer Theorem" from
>the early days in undergrad EE school; and

Us folk never went to this underground school, nothing to be confused
about at all. Are your problems from being a squinty-eyed miner?
Maybe that's why you can't read these meters. Pull the blinds and
take a load off your peepers.

>
>2. confusing an r-f transmitter output stage with the classical "signal
>generator" with a dissipative 50-ohm internal resistance.

What language are you trying to talk?
>
>Forget both of those irritants and concentrate on the required load for the
>transmitter, which the designer will provide and insist upon, and then
>adjust the antenna system to provide that load and all will be well.

Gawd this is complexity for its own sake, you white coated pencil
necked geeks need to get a life. If you are looking for the good
times, pop the cap off a cold long-neck. I hope you don't need a
glass, you would strangle fun out of TV.

>
>At no point will anyone, including the r-f amp designer in all likelihood,
>know or even care what the so-called "internal resistance" of the amplifier
>happens to be. He demands only one thing: the specified load resistance.
>Given that, his design will deliver the required power, efficiency, heat
>load, harmonic content, distortion levels, etc. etc.

Infernal resistance is right. distortion is what I don't want to hear
and what you are spouting on about is rattling the cone on my speaker.

>
>I know of no instance in the design of everything connected to the output
>port of the transmitter where there is need to know anything other than the
>required load resistance for the amplifier and the power levels (average,
>peak, etc.).

Is this bragging or complaining? Talk to your chaplain for relief.

>
>Why do folks make this so complicated, Ian?
>
>73/72, George

Oh! a philosopher hmm? About the only complication is the broken
lever of my Lazy Boy. Do you have a screw driver? Drink it college
boy, but don't ralph on the couch when you pass out.

73's
The mythical lurker.... ;-)

3248. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 10:31:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjpdjgkvvi5fdb@corp.supernews.com>
Source record: 110592

Well said, George.

Roy Lewallen, W7EL

3249. Westflex 103

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 10:32:20 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f3cb6b8$0$11382$cc9e4d1f@news.dial.pipex.com>
Source record: 110591

I'm currently using this coax with a vertical and I'm very pleased with it.
I am building a 15 ele yagi for 2m and would like to use the Westflex but
I'm concerned that it might be a bit too stiff to use with a rotator mounted
antenna. Has anyone tried this ?

Thanks

Steve

3250. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 13:08:27 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <W34PyZDLtNP$EA8e@ifwtech.co.uk>
Source record: 110596

I agree with every word, George.

>Why do folks make this so complicated, Ian?

Mostly by insisting on asking questions that may not even *have* an answer!

The US Constitution guarantees every citizen's right to ask whatever questions they wish - but the Universe does not guarantee there'll be any answers.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3251. Re: Westflex 103

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 13:14:38 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <7mlUmSE+yNP$EAY2@ifwtech.co.uk>
Source record: 110595

Steve wrote:
>I'm currently using this coax with a vertical and I'm very pleased with it.
>I am building a 15 ele yagi for 2m and would like to use the Westflex but
>I'm concerned that it might be a bit too stiff to use with a rotator mounted
>antenna. Has anyone tried this ?

Yes, to my grief. If it's bent sharply, the inner conductor is pushed sideways and the copper foil tears. Even if you use a very big loop, the bending still tends to be concentrated into two small areas at the ends of the loop.

It's better to get down below the rotator loop in a more flexible cable such as RG213, and then change to the low-loss Westflex for the longer part of the run.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3252. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 13:39:08 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjpojdhi1k0qb2@corp.supernews.com>
Source record: 110594

Dave Shrader wrote:
> There is NO definition of SWR!!
>
> There is a definition for VSWR!
>
> There is a definition of ISWR!
>
> But, unfortunately, there is NO definition for SWR!! Why don't you
> offer one?
>

VSWR and ISWR are usually referred to, as a matter
of convenience, simply as SWR. For example, see
W.C. Johnson "Transmission Lines and Networks"
1950 p.146.

VSWR can also be defined as:

VSWR = sqrt[(|Pfwd|+|Prefl|)/(|Pfwd|-|Prefl|)]

where the bars | | refer to "magnitude".

|Pfwd| and |Prefl| are what the Bird wattmeter
displays. If SWR (meaning VSWR or ISWR) are
needed, the above formula finds these. The Bird
meter uses the above fomula to find "VSWR".

There is also a seldom-used "Power Standing Wave
Ratio" defined as the square of the VSWR or ISWR.
If SWR refers to power rather than volts or amps
then PSWR is

PSWR = (|Pfwd|+|Prefl|)/(|Pfwd|-|Prefl)|

Bill W0IYH

3253. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 14:10:14 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjpqd67mav6782@corp.supernews.com>
Source record: 110597

Ian White, G3SEK wrote:

>
>
> I agree with every word, George.
>
>> Why do folks make this so complicated, Ian?
>
>
> Mostly by insisting on asking questions that may not even *have* an answer!
>

The problem is that finding the output impedance analytically is usually very difficult.

Measurement methods (usually questionable) have been proposed that "estimate" the output impedance. These tests can often be manipulated to get some desired result (for example 50 ohms).

The value of output impedance depends especially on signal level and also several other parameters, such as negative feedback.

Is the value of output impedance important? Sometimes in critical situations it can be. For example, a lowpass filter connected to the output of the PA may not be exactly correctly terminated at the input end. The error slightly affects the filter response, especially at the filter cutoff frequency. The passband ripple can also be affected. Most lowpass filter types can be designed for unequal values of generator and load impedances.

If the PA is broadband solid-state a sweep method can be used to optimize the filter design.

Usually these errors are unimportant, especially in typical Ham Radio.

Bill W0IYH

3254. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 14:11:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3ceaa9_2@corp-news.newsgroups.com>
Source record: 110598

Dr. Slick wrote:
> Your vocabulary is very confusing here, Cecil. "Incident"
> usually refers to the forward power, so when you say "incident
> reflected" it's extremely confusing.

"Forward power incident upon the load" or "Reflected power
incident upon the source" makes sense to me. Given the
definition of "incident", the reflected power has to
be incident upon something. Simply replace "incident upon"
with "arriving at".
--
73, Cecil, W5DXP

3255. Re: Magnetic Loop Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 14:28:28 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <RJ-cncbbWMqQc6GiU-KYvw@comcast.com>
Source record: 110599

Monty, N5ESE, has described a loop construction project at
http://www.io.com/~n5fc/loop_ant.html

I haven't built one myself, but I plan to, once some other things are out of the way. There are other interesting projects and project ideas on Monty's site.

Tom, N3IJ

"PMac" <vk2evb@nella.net.au> wrote in message
news:3f3984fa@usenet.per.paradox.net.au...
> Hi, I am in an area with a fairly high manmade, powerline noise and
> interference level. I am thinking of building a magnetic loop for 160, 80
&
> 40 metres and was hoping that it would not be so susceptible to the above
> types of interference. Also the antenna size factor appeals to me but
> comparisons with a dipole are hard to find. Any comments appreciated.
>
> 73 Peter VK2EVB
>
>

3256. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 14:40:12 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjps5fbo129d33@corp.supernews.com>
Source record: 110600

Roy Lewallen wrote:

> In the fourth paragraph, you say that "real power is in the real part of
> the impedance", and in the last, that it's "found by integrating the
> Poynting vector slightly outside the surface of the antenna". The
> impedance is E/H, the Poynting vector E X H. Clearly these aren't
> equivalent.
>
> The radiated power is, as you say, the integral of the Poynting vector
> over a surface. (And the average, or "real", radiated power is the
> average of this.)

Correction "real part of Poynting vector" noted.

The problem remains:

How is the *real* part of the antenna input
impedance, regardless of how it is fed and
regardless of what kind of antenna it is, get
"transformed" to the *real* 377 ohms of free space?

I believe (intuitively) that the reactive E and H
near-fields collaborate to create an impedance
transformation function, in much the same way as a
lumped-element reactive L and C network. In other
words, energy shuffling between inductive and
capacitive fields do the job and the E and H
fields modify to the real values of free space.
The details of this are murky, But I believe the
basic idea is correct.

Bill W0IYH

>
> William E. Sabin wrote:
>
>>
>> There seems to more explanation needed.
>>
>> If a lossless dipole is loaded with 100 W of *real* power, that is the
>> real power in the far field, and it is also the real power very close
>> to the antenna, regardless of the type of antenna.
>>
>> The value of real power is the same everywhere.
>>
>> Since real power is in the real part of the impedance, then how does

>> the value of real impedance (not the magnitude of impedance) vary with
>> distance from the antenna?
>>
>> It seems that very close to (but slightly removed from) the antenna
>> the real part of the resistive space impedance is nearly the same as
>> the real part of the driving point impedance of the antenna. This real
>> part is then transformed to 377 ohms (real) within the near field,
>> suggesting that the open space adjacent to the antenna performs an
>> impedance transformation. The near-field reactive fields perform this
>> function in some manner.
>>
>> The real power radiated is found by integrating the Poynting vector
>> slightly outside the surface of the antenna, and is equal to the real
>> power into the (lossless) antenna. This value is constant everywhere
>> beyond the antenna.
>>
>> Bill W0IYH
>>
>

3257. new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 14:54:22 UTC
From: radio <no@spam.com>
Message-ID: <yu6%a.371273$Fc6.33902365@amsnews02.chello.com>
Source record: 110601
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

Hello All,

I've tried to make a selection of the best info!

Look at my website:

http://www.qsl.net/pd0rkc

New amateur SOFTWARE.
COAX cable info (table).
Compare many ANTENNAS
(tonna/m2/diamond/flexa/cushcraft/cue-dee/hygain....more).
SATELLITE freq. keplerian elements, tracking software (the new NOVA, and
SATSCAPE).
KENWOOD microphone & reset info (and many more).
Datasheets electronics.
All you need is there to find!!!!!

If NOT let me know whats missing (my e-mail adres is on my website!).

73's Cor

3258. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 15:05:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3cf745$1_2@corp-news.newsgroups.com>
Source record: 110602

William E. Sabin wrote:
> I believe (intuitively) that the reactive E and H near-fields
> collaborate to create an impedance transformation function, in much the
> same way as a lumped-element reactive L and C network. In other words,
> energy shuffling between inductive and capacitive fields do the job and
> the E and H fields modify to the real values of free space. The details
> of this are murky, But I believe the basic idea is correct.

Optics, by Hecht, has a section 2.10 - Cylindrical Waves.
There is an interesting statement in that section: "No solutions
in terms of arbitrary functions can now be found as there were
for both spherical and plane waves."

The net reactive impedance component on a standing-wave antenna
is the result of the superposition of forward and reflected waves
on the standing-wave antenna. Presumably, a traveling-wave antenna,
like a terminated Rhombic, doesn't have reactive impedance components.

So my question is: Since the voltage and current are always in phase
in a traveling-wave antenna, is the near field of a traveling-wave
antenna ever reactive?
--
73, Cecil, W5DXP

3259. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 15:21:45 UTC
From: Cesco <me@mycall.com>
Message-ID: <3f3cfa70$0$244$4d4ef98e@read.news.ch.uu.net>
Source record: 110603
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

> 73's Cor

i think to cross post that to all ham ng's should be considered as spam.
especially because its the normal 08/15 "not worth to mention" homepage.

3260. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 15:33:47 UTC
From: "Guy P. Distaffen" <guypd@bigfoot.com>
Message-ID: <v37%a.97960$wk4.13427@twister.nyroc.rr.com>
Source record: 110604
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

He usually posts a link to his page about once a week.

Guy P. Distaffen

KB0SWS

"Cesco" <me@mycall.com> wrote in message
news:3f3cfa70$0$244$4d4ef98e@read.news.ch.uu.net...
> > 73's Cor
>
> i think to cross post that to all ham ng's should be considered as spam.
> especially because its the normal 08/15 "not worth to mention" homepage.
>
>
>
>

3261. New Website ON4JU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 15:42:14 UTC
From: Patrick <on1oe@amsat.org>
Message-ID: <3f3cff59$0$778$ba620e4c@reader1.news.skynet.be>
Source record: 110605

Hello OM,
New Website from ON4JU
www.on4ju.tk

Thanks for your visite.

'73s
Pat ON4JU
E-mail on4ju@busmail.net

3262. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 15:47:12 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308150747.246e5f19@posting.google.com>
Source record: 110606

"George, W5YR" <w5yr@att.net> wrote in message
news:<wc0%a.101359$0v4.6995464@bgtnsc04-news.ops.worldnet.att.net>...
...
> I think that a great deal of confusion over this whole issue comes from two
> sources:
>
> 1. vague efforts to apply the infamous "Maximum Power Transfer Theorem" from
> the early days in undergrad EE school; and
>
> 2. confusing an r-f transmitter output stage with the classical "signal
> generator" with a dissipative 50-ohm internal resistance.
>
> Forget both of those irritants and concentrate on the required load for the
> transmitter, which the designer will provide and insist upon, and then
> adjust the antenna system to provide that load and all will be well.

Those of us who _do_ have to worry, in intimate detail, about
generator source impedances, are most thankful that we do NOT when we
put loads on our ham rigs. Thanks for a great posting that nicely
summarizes what a lot of us have been saying for a long time. Perhaps
Reg is right. Perhaps we SHOULD quit calling it an SWR meter and
instead call it a "Transmitter Load Indicator" (or perhaps transmitter
load error indicator).

When you plug an appliance into the mains, do you worry about what the
mains source impedance is, so long as it's low enough to maintain the
proper voltage? When you connect speakers to an amplifier, do you
worry about what the source impedance is, so long as it's low enough
to not materially affect damping? If not, why would you worry about
transmitter source impedance? Why would you not worry instead about
proving the proper load so the amplifier can do it's job right?

Cheers,
Tom

3263. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 16:53:30 UTC
From: radio <no@spam.com>
Message-ID: <ee8%a.372814$Fc6.34136120@amsnews02.chello.com>
Source record: 110607
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

> He usually posts a link to his page about once a week.

Hello KB0SWS,

I've been on the newsgroup for a few years.
I posted software & info once in a month (when I updated my page with news).
New visitors can take a look.
When I have some news (like the new kenwood trx) I post my url for info.

That's called news on the newsgroup!

What do you do for the newsgroups!

73's Cor

"Guy P. Distaffen" <guypd@bigfoot.com> schreef in bericht
news:v37%a.97960$wk4.13427@twister.nyroc.rr.com...
> He usually posts a link to his page about once a week.
>
> Guy P. Distaffen
>
> KB0SWS
>
> "Cesco" <me@mycall.com> wrote in message
> news:3f3cfa70$0$244$4d4ef98e@read.news.ch.uu.net...
> > > 73's Cor
> >
> > i think to cross post that to all ham ng's should be considered as spam.
> > especially because its the normal 08/15 "not worth to mention" homepage.
> >
> >
> >
> >
>
>

3264. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:00:11 UTC
From: Peter Völpel <qro1750nospam@compuserve.de>
Message-ID: <3F3D119B.2059018D@compuserve.de>
Source record: 110608
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space

>
> Hello All,
>
> I've tried to make a selection of the best info!
>
> Look at my website:
>
> http://www.qsl.net/pd0rkc
>
> New amateur SOFTWARE.
> COAX cable info (table).
> Compare many ANTENNAS
> (tonna/m2/diamond/flexa/cushcraft/cue-dee/hygain....more).
> SATELLITE freq. keplerian elements, tracking software (the new NOVA, and
> SATSCAPE).
> KENWOOD microphone & reset info (and many more).
> Datasheets electronics.
> All you need is there to find!!!!!
>
> If NOT let me know whats missing (my e-mail adres is on my website!).
>
> 73's Cor

when will you stop this bullshit?
nobody is interested in your crosspostings
imagine any ham would advertise his homepage and flood this
spam all over the usenet

3265. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:03:57 UTC
From: radio <no@spam.com>
Message-ID: <1o8%a.372981$Fc6.34161254@amsnews02.chello.com>
Source record: 110609
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

> i think to cross post that to all ham ng's should be considered as spam.

One mail at one newsgroup (is that spam?).
Some people see new adresses of other newsgroups! (hey is that an idea for people whoe does not know?).

I see often people complain at other people who trie to do the best with their info.
Some people use that to get atention from other complainers, they prefer to read
the comments on that, what a waist of time, use your energy for hamradio news.

Maybe it's better to put your comments on a new newsgroup (news: alt.complain?????).

73's Cor

"Cesco" <me@mycall.com> schreef in bericht news:3f3cfa70$0$244$4d4ef98e@read.news.ch.uu.net...
> > 73's Cor
>
> i think to cross post that to all ham ng's should be considered as spam.
> especially because its the normal 08/15 "not worth to mention" homepage.
>
>
>
>

3266. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:05:26 UTC
From: "Guy P. Distaffen" <guypd@bigfoot.com>
Message-ID: <qp8%a.98242$wk4.64316@twister.nyroc.rr.com>
Source record: 110610
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

"radio" <no@spam.com> wrote in message
news:ee8%a.372814$Fc6.34136120@amsnews02.chello.com...
> Hello KB0SWS,
>
> I've been on the newsgroup for a few years.
> I posted software & info once in a month (when I updated my page with
news).
> New visitors can take a look.
> When I have some news (like the new kenwood trx) I post my url for info.

I seen the new Kenwood advertised on their site, a couple of weeks before
you brought it up in here.

> That's called news on the newsgroup!
>
> What do you do for the newsgroups!

Is that a question or a statement? (? or !)

> 73's Cor

I never said anything was wrong with the posts. I was only commenting that
you advertise your site often. However, if you think that everyone here
responding to your site, is putting it down, then maybe it needs to fit into
the groups a bit more.

Guy P. Distaffen

KB0SWS

3267. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:06:06 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <a71MhyB+LRP$EA9f@ifwtech.co.uk>
Source record: 110519

William E. Sabin wrote:
>Ian White, G3SEK wrote:
>
>> I agree with every word, George.
>>
>>> Why do folks make this so complicated, Ian?
>> Mostly by insisting on asking questions that may not even *have* an
>>answer!
>>
>
>The problem is that finding the output impedance analytically is
>usually very difficult.
>
>Measurement methods (usually questionable) have been proposed that
>"estimate" the output impedance. These tests can often be manipulated
>to get some desired result (for example 50 ohms).
>
>The value of output impedance depends especially on signal level and
>also several other parameters, such as negative feedback.
>
Some parameters like negative feedback are built into the design, but
others like signal level (drive), tuning and loading are variables,
adjustable at the discretion of the operator. The output impedance
wanders where it will.

All these factors combine to make "What is my PA's output impedance?"
one of those questions that is rarely worth asking, because it doesn't
have any useful general answer.

>Is the value of output impedance important? Sometimes in critical
>situations it can be. For example, a lowpass filter connected to the
>output of the PA may not be exactly correctly terminated at the input
>end. The error slightly affects the filter response, especially at the
>filter cutoff frequency. The passband ripple can also be affected. Most
>lowpass filter types can be designed for unequal values of generator
>and load impedances.
>
>If the PA is broadband solid-state a sweep method can be used to
>optimize the filter design.
>
The rarity of the exception you've just described goes a long way to
prove your general conclusion:

>Usually these errors are unimportant, especially in typical Ham Radio.

Absolutely.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3268. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:21:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhj4qpdve1@hercules.btinternet.com>
Source record: 110612

> So my question is: Since the voltage and current are always in phase
> in a traveling-wave antenna, is the near field of a traveling-wave
> antenna ever reactive?
==========

Cec, you're leading yourself astray again. What's reactance to do with anything other feedpoint impedance?

Stand at a distance from a very long Beverage antenna. Focus your attention on a particular half-wave length of it.

The voltage at one end of the half-wave will whizz up and down at a frequency of x megahertz.

At the the other end of the half-wave length the voltage will whizz down and up at x megahertz, ie., in time-antiphase with it.

Therefore, from where you are standing, the half-wavelength of wire will behave and radiate exactly like a half-wave dipole. You have no means of knowing whether there are standing waves along the wire or not. And clearly it doesn't matter. To segregate antennas between standing-wave and non-standing-wave types can be misleading.

To continue with the Beverage. Adjacent 1/2-wavelengths of wire form a co-linear array are in antiphase with each other. Therefore there is no broadside radiation from a long Beverage which contains an even number number of halfwavelengths. There is a sharp null at an angle of 90 degrees from the wire and as overall length increases so does the number of lobes in the general direction of the wire.

This is just the opposite of a co-linear array, a standing-wave antenna, along which the successive half-wave dipoles are all in time-phase with each other.

But both types of antenna incorporate radiating 1/2-wave dipoles. And if the near-field of one type has a reactive near-field (whatever THAT means) then so must the other.

If there are no standing waves it does NOT mean the voltage along the whole length of line or antenna is whizzing up and down in simultaneous time-phase in which case there would indeed be a non-reactive near field. But neither could there be any length or time delay involved.

Don't confuse instantaneous RF volts over a cycle with the envelope which may remain constant or vary with time or distance.

Reg, G4FGQ.

3269. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:21:33 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308150921.1a04f3f1@posting.google.com>
Source record: 110611

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<ujnnjv0l4b81hjni7kggggsdorq1e8cr9p@4ax.com>...
> On 14 Aug 2003 07:29:40 -0700, kelly@dvol.com (Brian Kelly) wrote:
>
> >
> >I spent a day and a half on the phone calling around trying to buy a
> >lousy two pounds of a specific DuPont Teflon-bearing grease. The
> >worn-out DuPont tech rep finally wrote an order for a two pound sample
> >but I had to drive 50 miles to the Dupey warehouse to pick it up.
> >
> >I imagine it's much easier to simply run a web search today.
> >
> >> 73's
> >> Richard Clark, KB7QHC
> >
> >w3rv
>
> Hi Brian,
>
> That is exactly how I get all my exotic electronics parts, engineering
> samples. FREE. Need a 24 bit ADC? How about GHZ GBWP amps?
> Precision V-F-V converters? FREE.

There are people who have that skill down to an art form.
Unfortunately I've never been able to well in that field.

> Now, if I wanted to buy one they would tell me to take a hike.

Right. Getting you off their phones is worth much more to them than
the widget and/or the paperwork are worth . .

> As for your last comment about web searching. That is my current
> business. I build web robots and if anyone is interested, my current
> model that I call GrantBot will search through nearly 2000 pages of
> legislation funding of Grants offered and awarded by every department,
> agency, institute, consortium, office, bureau, center, program, group,
> division, administration, service, ... in the government.
>
> This offer is free to individuals.
>
> I have a generic robot that is workable, but which remains to gain
> recent work's improvements. However, it requires that you have some
> foreknowledge of potential links (it is a targeted web robot, not a
> free roaming one).
>

> That too is free to individuals.
>
> When I say individuals, that means those not using it as a tool of
> their paid work. If you are a sole proprietor, I still consider you
> an individual.

I'm just a sole these days, not a sole proprietor. For now anyway. I freelance in the industrial machine design biz but ran out of work in March and decided to coast with my feet up on the handlebars for a few months and do some radio, etc. Which is much easier when yer finally positioned to plunder the Social Security fund like I am now. Thanks for the offer Richard but I'm unloading tools rather than acquiring new ones.

> 73's
> Richard Clark, KB7QHC

w3rv

3270. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:33:53 UTC
From: Cesco <me@mycall.com>
Message-ID: <3f3d1968$0$238$4d4ef98e@read.news.ch.uu.net>
Source record: 110613
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

> One mail a week at twelve newsgroup (is that spam?).

yes

3271. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:39:32 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <c21qjv0g03a7peg4ipbjef5qsta40a3gh2@4ax.com>
Source record: 110614

On Fri, 15 Aug 2003 09:40:12 -0500, "William E. Sabin"
<sabinw@mwci-news> wrote:
>The problem remains:
>
>How is the *real* part of the antenna input
>impedance, regardless of how it is fed and
>regardless of what kind of antenna it is, get
>"transformed" to the *real* 377 ohms of free space?
>

Hi Bill,

Transformation, as a term, seems to be problematic without any more care for the preferred term of transduction (ignoring the historical usage it clashes with). How words could have any bearing on the process itself is more a calmative to the user than a need for the group.

So, if we were to simply ignore ALL the terms, how many show up at the table to discuss the PROCESS (I hope that's the right word...)?

If we simply cast off the electrical aspect of it (seeing how difficult it is to conduct discussion for this topic in that vernacular), the correlative of the organ pipe would be useful. It too creates a standing wave at the drive point; and it employs a resonant structure wherein the wave stands. It conforms to the transmission line principles of termination in that a close or open at the end is meaningful, and harmonically related to wavelength in a media. If this seems an outrage (because the former kidnapping of terms is ignored) consider the following quote from Reference Data for Radio Engineers:
"...Maxwell's initial work on electrical networks
was based on the previous work of Lagrange
in dynamic systems."
This reference then tumbles into the discussion of "Acoustic and Mechanical Networks and their Electrical Analogs"

It can be seen that the structure imposes critical significance in the harmonic component, but is wholly inert without excitation. In other words, it is not the causative agent, nor is it the agent of transmission. The pressure excess would cause air flow with or without it. Of course, there is an efficiency problem in that lax attitude and that necessarily brings us back to structure and fields (pressure in this case).

What has this to do with near field and far field? For the organ pipe, what is the near field, what is the far field? Here, we get into issues as we formerly did by looking at dimension and wavelength. There are two classes of Acoustic Impedance that bear to this intimately.

Those two classes compute for a spherical wave front, and for a planar wave front:
"...the acoustic impedance for a spherical
wave has an equivalent electrical circuit
comprising a resistance shunted by an inductance.
In this form, it is obvious that a small spherical
source (r is small) cannot radiate efficiently since
the radiation resistance [formula] is shunted by a small
inductance [formula]."

The plane wave Acoustic Impedance formula does not exhibit this inductive shunt. The difference between the two cases is simply a matter of scale, and is as arbitrarily chosen as with the abandoned antenna. That is to say, the definition of antenna far field being expressed as residing 10 wavelengths away also finds the correlative in this difference of Acoustic Impedance.

What is this shunt? The compressibility of the medium which is the mechanical analog of storage.

What is the difference between the case of the organ pipe and the antenna? For the pipe, the medium is lossy (and employing a vacuum brings its own obvious issues for the organ) and we find the loss expressed in phonons (the heat of jostling material). For the antenna (especially in the void of a vacuum, a useful medium) we find no such issue and consequently no related phonons (loss to heat within the medium). Some would note this also encompasses the traditional demarcation between transducer and transformer.

Irrespective of the difference, both exhibit a region wherein the MEDIA supports the transition (and perhaps we should call these structures transitioners --- only kidding :-).

As I stated in the past, it is absurd to crop the picture such that the description demands that an antenna ends at the literal tips of its structure as if virtual clips connect it to the ï¿½ther.

73's
Richard Clark, KB7QHC

3272. Re: New Website ON4JU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:45:43 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <it6qjv8g8rhdn92842lh53ab41tkv3as9a@4ax.com>
Source record: 110615

On Fri, 15 Aug 2003 17:42:14 +0200, "Patrick" <on1oe@amsat.org> wrote:

>Hello OM,
>New Website from ON4JU
>www.on4ju.tk
>
>Thanks for your visite.
>
>'73s
>Pat ON4JU
>E-mail on4ju@busmail.net
>

Hi Pat,

Nice page. Informative links too. A little slow to open up, but
maybe that is time lost to the latest virus and a chunk of the net
missing near Ontario/Toronto/NYC.

73's
Richard Clark, KB7QHC

3273. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:48:15 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d1d9e_2@corp.newsgroups.com>
Source record: 110616

Reg Edwards wrote:
>>So my question is: Since the voltage and current are always in phase
>>in a traveling-wave antenna, is the near field of a traveling-wave
>>antenna ever reactive?
>
> Cec, you're leading yourself astray again. What's reactance to do with
> anything other feedpoint impedance?

How can I lead myself astray by asking a question? :-)

Forget reactance. The question remains: Can the E-field and H-field
be out of phase if the voltage and current are in phase?
--
73, Cecil, W5DXP

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3274. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:53:35 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d1ed5$1_2@corp.newsgroups.com>
Source record: 110618

Dr. Slick wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>It seems pretty
>>obvious that not all PA's are Z0-matched so they will always re-reflect
>>100% of the incident reflected power. But that is exactly what that
>>definition implies.
>
> Your vocabulary is very confusing here, Cecil. "Incident"
> usually refers to the forward power, so when you say "incident
> reflected" it's extremely confusing.

The point was not to confuse. So allow me to re-word it.

Some say there is zero power reflected from a PA. For that to
be true, all PA's must exhibit an impedance of Z0, i.e. all PA's
must be Z0-matched. Doesn't that seem a little far-fetched?

Some say that 100% of the reflected power is re-reflected by
the PA. For that to be true, all PA's must exhibit an open,
short, or pure reactance to the reflected waves. Doesn't that
seem a little far-fetched?

The problem lies in the definition of "generated power" which
is forward power minus reflected power. A mental exercise will
illustrate.

XMTR---one second long feedline-----mismatched load

For the first two seconds, a directional wattmeter at the
XMTR reads 100W forward, zero watts reflected.

During steady-state, the directional wattmeter reads 100W
forward, 25 watts reflected.

If the XMTR is a 100W signal generator equipped with a circulator
and load resistor, we have no problem deciding that the signal
generator is generating a continuous 100W and dissipating whatever
reflected energy arrives.

If the XMTR is a ham transmitter, we say it generates 100W for
two seconds, and after that, it generates 75 watts, by definition.
This seems to me to be just a useful shortcut that avoids opening
Pandora's Box (in which the source is located). :-)

If a transmitter only generates (forward power minus reflected
power), it follows that the transmitter always re-reflects 100%
of the reflected power arriving at its terminals. Does that

sound reasonable?

Or, if reflected energy is never re-reflected from a PA, then
the PA must be dissipating the reflected power, which it previously
generated, just like a signal generator with circulator load does.
Does that sound reasonable?

Or, if there is a circulator load, the reflected waves contain
energy, but if there's not a circulator load, the reflected waves
don't contain any energy. Does that sound reasonable?

What sounds reasonable to me is that the reflected waves arriving
back at the source obey the rules of the wave reflection model
as described by Ramo and Whinnery. But since the impedance presented
to the reflected waves by the transmitter is usually unknown, we
are again up that proverbial creek without a paddle.

So, by all means, use the shortcuts, but recognize that they are
definitional shortcuts which may or may not represent reality.
--
73, Cecil, W5DXP

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-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3275. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 17:54:26 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308150954.6da98b6c@posting.google.com>
Source record: 110617

Roger Halstead <newsgroups@rogerhalstead.com> wrote in message
news:<23tnjv8fqktm5bi3c09i03gg02jvvl1mcv@4ax.com>...
> On 12 Aug 2003 09:08:08 -0700, kelly@dvol.com (Brian Kelly) wrote:
>

> >Select a catalog tower and stick 100% to the manufaucturer's
> >installation and operation directions. It'll cost more but you'll
> >sleep better.
>
> After seeing the work I put into mine, the size of the parts, the
> strength of the guys, the 17,000# guy anchors, my wife put her foot
> down and said no more climbing the other guy's towers around town.
> Course, she says I shouldn't be doing that kind of work for the young
> guys at my age

She's right.

> although I hear no complaints when I go up and work on
> mine.

She knows when to stick and when to fold.

> http://www.rogerhalstead.com/tower.htm

Yumpin Yesus! Whatta "backyard" antenna farm!

> We had one who was going to install a 100 foot 25G and mount the rotor
> at the base. Although basically a sound idea in theory,

Done all the time and saves a lotta climbing.

> he
> unfortunately was using 1 1/2 chrome molly tube with 1/2 inch wall
> and the rotor was supported between the tower legs about a foot above
> the base.

No . . ! Good thing he didn't design yer nice old Debbie . .

> I could barely manage to pick up one section of the tube and he had 6.
> (I'm not all that big, but I do lift weights) Imagine the weight on
> the rotor and tower base, let alone the momentum from the mass even
> without the antennas.
>
> We had a longggg talk.

I'll bet.

> He decided to mount the rotor on a separately supported steel plate
> anchored to big concrete blocks on either side, but finally abandoned
> the idea as getting too complex.

Ya take the vertical antenna & mast load out with a thrust bearing
either in the top plate or somewhere close to the top, run some loosly
guided 2-3" EMT down the tower and . . . does a great job of knocking
down the torsional start/braking/wind spikes throughout the system AND
reduces the number of climbs. A second thrust brg just above the
rotator is even better. I dunno where they come from.

> Roger Halstead (K8RI EN73 & ARRL Life Member)
> www.rogerhalstead.com
> N833R World's oldest Debonair? (S# CD-2)

w3rv

3276. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 18:06:29 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjq896137s6e62@corp.supernews.com>
Source record: 110520

It's a simple matter to model a Beverage with EZNEC and observe the near field at any point in space you'd like. EZNEC reports phase angles of the E and H fields, so it won't take long for you to find out.

Roy Lewallen, W7EL

W5DXP wrote:
>
> So my question is: Since the voltage and current are always in phase
> in a traveling-wave antenna, is the near field of a traveling-wave
> antenna ever reactive?
> --
> 73, Cecil, W5DXP
>

3277. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 18:08:05 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <s48qjv0ah3atockegh2krgav9vs7ji61ok@4ax.com>
Source record: 110521

On Fri, 15 Aug 2003 10:53:35 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

> But since the impedance presented
>to the reflected waves by the transmitter is usually unknown, we
>are again up that proverbial creek without a paddle.

Hi Cecil,

You can't measure phase or magnitude? You are standing in the creek
without a canoe, bucko. However, in Texas I imagine that only
threatens your ankles. but stay away from dry gulches! ;-)

73's
Richard Clark, KB7QHC

3278. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 18:28:43 UTC
From: WB2JKX <mycall-N0SPAM@arrl.net>
Message-ID: <vD9%a.101834$0v4.7031352@bgtnsc04-news.ops.worldnet.att.net>
Source record: 110522

William E. Sabin <sabinw@mwci-news> wrote in message
news:vjpqd67mav6782@corp.supernews.com...
> Ian White, G3SEK wrote:
>
> >
> >
> > I agree with every word, George.
> >
> >> Why do folks make this so complicated, Ian?
> >
> >
> > Mostly by insisting on asking questions that may not even *have* an
answer!
> >
>
> The problem is that finding the output impedance
> analytically is usually very difficult.
>
> Measurement methods (usually questionable) have
> been proposed that "estimate" the output
> impedance. These tests can often be manipulated to
> get some desired result (for example 50 ohms).
>
> The value of output impedance depends especially
> on signal level and also several other parameters,
> such as negative feedback.
>
> Is the value of output impedance important?
> Sometimes in critical situations it can be. For
> example, a lowpass filter connected to the output
> of the PA may not be exactly correctly terminated
> at the input end. The error slightly affects the
> filter response, especially at the filter cutoff
> frequency. The passband ripple can also be
> affected. Most lowpass filter types can be
> designed for unequal values of generator and load
> impedances.
>
> If the PA is broadband solid-state a sweep method
> can be used to optimize the filter design.
>
> Usually these errors are unimportant, especially
> in typical Ham Radio.
>

> Bill W0IYH
>

There was a long-running series of exchanges about amp output impedeance, conjugate matching, etc. in QEX a couple of years ago. If I recall correctly, it was focused on measurement methods to determine this characteristic.

3279. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 18:37:12 UTC
From: "Dr. Anton Squeegee" <SpammersAreVermin@dev.null>
Message-ID: <MPG.19a6c82f8a965f239899d2@192.168.42.131>
Source record: 110523
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

In article <1o8%a.372981$Fc6.34161254@amsnews02.chello.com>, radio
says...

> > i think to cross post that to all ham ng's should be considered as spam.
>
> One mail at one newsgroup (is that spam?).
> Some people see new adresses of other newsgroups! (hey is that an idea for
> people whoe does not know?).

The 'Rules of the Road' for Usenet hold that a post is not spam if
it has a BI (Breidbart Index) of less than 20. The BI is calculated by
taking the square root of the total number of groups an article is
posted to.

Full details on this measure may be found here.

http://www.stopspam.org/usenet/mmf/breidbart.html

From what I can see, Cor posted an identical message to six
groups. The square root of six is about 2.45, so his message cannot be
considered spam under Usenet guidelines.

Said guidelines are here.

http://www.faqs.org/faqs/usenet/posting-rules/part1/

If his posts bother you, well... most Usenet newsreaders do have a
filter or 'killfile' function. ;-)

--
Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
(Known to some as Bruce Lane, KC7GR)
kyrrin a/t bluefeathertech d-o=t c&o&m
"Quando Omni Flunkus Moritati" (Red Green)

3280. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 18:39:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d29ae$1_2@corp.newsgroups.com>
Source record: 110524

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>But since the impedance presented
>>to the reflected waves by the transmitter is usually unknown, we
>>are again up that proverbial creek without a paddle.
>
> You can't measure phase or magnitude?

I simply cannot differentiate what part of the forward wave has been
reflected back from the source Vs what part is actually generated
by the source. That's the crux of the problem.
--
73, Cecil, W5DXP

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3281. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 19:00:37 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308151100.134db26f@posting.google.com>
Source record: 110525

W5DXP <Cecil.A.Moore@ieee.org> wrote in message
news:<3f3ceaa9_2@corp-news.newsgroups.com>...
> Dr. Slick wrote:
> > Your vocabulary is very confusing here, Cecil. "Incident"
> > usually refers to the forward power, so when you say "incident
> > reflected" it's extremely confusing.
>
> "Forward power incident upon the load" or "Reflected power
> incident upon the source" makes sense to me. Given the
> definition of "incident", the reflected power has to
> be incident upon something. Simply replace "incident upon"
> with "arriving at".

"Forward Incident" a bit redundant in my opinion. "Incident"
usually refers to the power moving towards the load, away from the
generator.

And your previous quote was: "It seems pretty
obvious that not all PA's are Z0-matched so they will always
re-reflect
100% of the incident reflected power."

So here, you don't say where it is "incident" upon, of where it
is arriving at, athough I assume you mean simply the reflected power.

I'm just trying to make your vocabulary less confusing.

Slick

3282. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 19:06:16 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <xfudnQzF9s62sqCiXTWJjw@comcast.com>
Source record: 110526

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bhh82q$mf6$1@sparta.btinternet.com...
> It won't be long before the ultimate fully automatic ATU is built into
> transceivers.
>
I wouldn't pay for it. I would rather have a built in AC power supply. Not many people go mobile with a $2000 radio that weighs 25 lb; if they are serious about emergency communications, they will have a motor generator set. With a built in supply, you can run the transistors at some decent voltage, like 48V, and get your other voltages, like 3.3V and neg5V off the same transformer. You can buy a 300W PC power supply for $30, which means it costs less than $15 to make.

Since the power supply would be a 120/220 offline switcher, you could allow for 12V operation, if you insisted on it, by utilizing a tap on the transformer primary - probably add $5 to the cost.

Tam/WB2TT

3283. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 19:14:41 UTC
From: "R. Scott" <washingtonham@yahoo.com>
Message-ID: <3F3D3121.15B97888@yahoo.com>
Source record: 110528
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

> > > 73's Cor

Are you AB7SL Reincarnated ?

3284. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 19:20:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d331d$1_2@corp.newsgroups.com>
Source record: 110527

Dr. Slick wrote:
> "Forward Incident" a bit redundant in my opinion. "Incident"
> usually refers to the power moving towards the load, away from the
> generator.

I don't think that is true. The HP ap note, AN 95-1, refers to
"the voltage wave incident on port 1" and "the voltage wave
incident on port 2". Those two waves are moving in opposite
directions, one toward the load and one toward the source.
--
73, Cecil, W5DXP

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3285. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 19:37:05 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308151137.5482495e@posting.google.com>
Source record: 110529

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjokum6dq73997@corp.supernews.com>...
> >
> > But a 60 ohm transmission line transformation from a non-50 ohm
> > load will certainly change the SWR, as it won't be on the constant
> > VSWR circle anymore.
>
> Once again, you're confusing the SWR meter reading with the SWR on the
> line. When the line and SWR impedances are different, the two are *not*
> the same. When I speak of the SWR on the line, I mean the SWR on the
> line, not the meter reading.
>
> Now look at the sentence you wrote. It's not very clear to me, but it
> would certainly make more sense if you replaced "the SWR" with "the SWR
> meter reading". Do *not* confuse the two.

I mean in a 50 ohm referenced (normalized) Smith chart, a 60 ohm
transmission line will change the SWR of a non-50 ohm impedance (not
in the center), where as a perfect 50 ohm transmission line will
transform the impedance on a circle about the center of the chart,
which would be a constant VSWR circle.

> >
> > I believe the source of confusion is here:
> >
> >
> > PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
> > load
> > 1 2 3
> >
> >
> >
> > The "+" are connector points. You folks are saying that as you
> > change the PA (source) impedance, that the SWR you read will remain
> > the same, even if the incident power changes due to the change in
> > reflected power at point 1.
>
> I'm saying that the line SWR doesn't change when you change the source
> impedance. I didn't say anything about incident or reflected power
> anywhere. And I won't. Cecil probably said something about the incident
> and reflected power, but explanations in those terms are strictly up to him.
>

I agree with you on this, but i stand by my statement that the
reflected power right at the output of the PA (connection 1), CAN
change as you change the output impedance of the PA. But, no one

really measures the S22, not mentioning the trouble it would take to
build an SWR meter for the impedance you get.

> If you were to change the impedance of the left hand line (the one
> between the PA and meter), then the SWR on the left hand line would
> change, but the SWR on the right hand line wouldn't, and the SWR meter
> reading would remain the same. For that matter, you can do anything you
> want between the SWR meter and the PA -- add an impedance of any kind in
> series or parallel, change the left hand transmission line length and/or
> Z0, change the power, whatever you want, and it won't change either the
> meter's indicated SWR or the actual SWR on the right hand line. The rule
> is that whatever you change, it won't affect the SWR on any line that's
> "downstream" (toward the load) from the change you made.
>

Understood.

>
> > But, if you place an SWR meter of the same impedance as the output
> > of the PA at point 1, you will definitely see a change in SWR at point
> > 1 as you change the PA impedance, as you are changing the reference
> > impedance (center of Smith re-normalized).
>
> No, you won't see a change in the SWR at point 1 as you change the PA
> impedance. All the fiddling you do with your Smith chart just won't make
> it happen. Sorry.
>
> The SWR, voltage, current, impedance, power, reflection coefficient,
> waves, or anything else don't change in response to your Smith chart
> exercises.
>

Absolutely incorrect. Time for you to review your Smith Chart
again.

If you re-normalize your Smith, your are changing the reference
impedance, and the SWR looking into the same complex impedance which
does not change.

> >
> > Understood, assuming this is what you guys mean.
> >
>
> It's time for me to leave this discussion. I've tried to make my
> statement as clearly and simply as I know how, but somehow people have
> decided that I really meant something else, or that there's this
> condition or that condition that cause exceptions to it, or that it all
> depends on what you scribble on your Smith chart with a grease pencil.

This is typical of you, Roy, for you to back out of a discussion
when you don't want to admit that maybe someone else has a logical
point. I've agreed with you on many things (antennas as transducers

and such), but like many intelligent but close-minded people, you cannot accept someone elses points.

I guess you think other people can't teach you anything, eh?

NO ONE knows it all, even about a specific topic as impedance matching.

Slick

3286. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 19:47:14 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0udqjvc3v24ldh7nme3da8gh5qr0bv9d6r@4ax.com>
Source record: 110530

On Fri, 15 Aug 2003 11:39:51 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>> You can't measure phase or magnitude?
>
>I simply cannot differentiate what part of the forward wave has been
>reflected back from the source Vs what part is actually generated
>by the source. That's the crux of the problem.

Hi Cecil,

>>> But since the impedance presented
>>>to the reflected waves by the transmitter is usually unknown
You have a forward part from the transmitter,
a reverse part from the reflection.

What more do you need unless you are discarding phase? If so, recover
it (if this is all about a SWR meter, then take out the diodes and use
a comparator).

73's
Richard Clark, KB7QHC

3287. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 19:57:46 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjqepfi497523c@corp.supernews.com>
Source record: 110531

William E. Sabin wrote:
> Roy Lewallen wrote:
>
>> In the fourth paragraph, you say that "real power is in the real part
>> of the impedance", and in the last, that it's "found by integrating
>> the Poynting vector slightly outside the surface of the antenna". The
>> impedance is E/H, the Poynting vector E X H. Clearly these aren't
>> equivalent.
>>
>> The radiated power is, as you say, the integral of the Poynting vector
>> over a surface. (And the average, or "real", radiated power is the
>> average of this.)
>
>
> Correction "real part of Poynting vector" noted.
>
> The problem remains:
>
> How is the *real* part of the antenna input impedance, regardless of how
> it is fed and regardless of what kind of antenna it is, get
> "transformed" to the *real* 377 ohms of free space?
>
> I believe (intuitively) that the reactive E and H near-fields
> collaborate to create an impedance transformation function, in much the
> same way as a lumped-element reactive L and C network. In other words,
> energy shuffling between inductive and capacitive fields do the job and
> the E and H fields modify to the real values of free space. The details
> of this are murky, But I believe the basic idea is correct.
>
> Bill W0IYH
>

For example, consider an EZNEC solution to an
antenna, say a 50 ohm dipole. The far-field 377
ohm solution provided by the program is precisely
the field that I am thinking about. How does
EZNEC, with its finite-element, method-of-moments
algorithm, transform a 50 ohm dipole input
resistance to 377 ohms in free space?

I don't want the equations, I want a word
description (preferably simple) of how EZNEC
performs this magic.

The far-field E and H fields are different from
the near-field E and H fields. What is going on?

Bill W0IYH

3288. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 20:01:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d3cb9$1_2@corp.newsgroups.com>
Source record: 110532

Richard Clark wrote:
> You have a forward part from the transmitter,
> a reverse part from the reflection.

We are talking about re-reflection FROM THE SOURCE!
The forward part and re-reflected part from the source
are coherent and traveling in the same direction so they
cannot be separated for measurement purposes. That's
why Bruene tried to determine the source impedance by
bouncing another separate signal off the source.
--
73, Cecil, W5DXP

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3289. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 20:17:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3jfqjvcfbrvti64bf9os7pqq463rnnsj0k@4ax.com>
Source record: 110533

On Fri, 15 Aug 2003 13:01:06 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>The forward part and re-reflected part from the source
>are coherent and traveling in the same direction so they
>cannot be separated for measurement purposes.

Hi Cecil,

That separation is unnecessary as it represents a sufficiently fixed
value for every moment beyond the first millisecond for usual
applications.

73's
Richard Clark, KB7QHC

3290. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 20:31:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjqgpv3bmh2m10@corp.supernews.com>
Source record: 110534

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vjokum6dq73997@corp.supernews.com>...
>
> This is typical of you, Roy, for you to back out of a discussion
> when you don't want to admit that maybe someone else has a logical
> point. I've agreed with you on many things (antennas as transducers
> and such), but like many intelligent but close-minded people, you
> cannot accept someone elses points.
>
> I guess you think other people can't teach you anything, eh?
>
> NO ONE knows it all, even about a specific topic as impedance
> matching.
>
>
> Slick

Let me explain why I leave these discussions.

I certainly don't know everything, and am constantly learning. But not from threads like this one. I can change the SWR on a transmission line by renormalizing my Smith chart? Is that a "logical point" I'm running away from?

The reason I post in the first place isn't to try and convince the party I'm directing my posting to. Nor is it an ego trip. What I hope to accomplish is to provide a counterpoint to what I see as incorrect information. This group is read by a very large number of "lurkers" who seldom or never post. I know this for a fact, because many of them introduce themselves to me at Dayton and other places I appear publicly. When someone posts misinformation on this group, I try to present what I consider to be correct.

There are people, some of whom post here, who won't be convinced regardless of the evidence. It's as much a total waste of time to argue with those people as it is to try and convince someone his religion is wrong. When I encounter a person like that, I'll post my point of view, present what evidence I can, then withdraw. I have much better things to do than continue flogging a dead horse. I feel that the lurkers, who are really the people I'm addressing, should be able to make up their minds on the basis of what's been presented.

There's more than ample evidence to back up what I've said that's easily available to anyone with a real interest in learning. Anyone who really cares and is willing to invest even a modicum of effort can search out

the information and reach a conclusion. You've chosen not to go to that effort(*), but rather interpret what I say in a way that suits your preconception. Sorry, I just won't waste more of my time trying to talk you out of it. If lurkers are convinced by your arguments and find them more compelling than the ones I've made, then so be it. I've done what I can. To continue posting over and over again the same thing isn't my choice of a way to use my time.

There are people who feel that the person who posts the last message "wins", and so anyone who withdraws has "lost". You can see the result of this philosophy in the threads that have run to literally hundreds of postings without ever resolving the issue. It's simply not a game I play.

Roy Lewallen, W7EL

(*) For example, have you ever looked up the equations for calculation of SWR? Noticed that there's no term for the source impedance? And no term for your Smith chart normalization factor?

3291. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 20:38:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <31gqjvsvknagv262nr8uhv331omrvemvs0@4ax.com>
Source record: 110535

On Fri, 15 Aug 2003 14:57:46 -0500, "William E. Sabin"
<sabinw@mwci-news> wrote:

>
>The far-field E and H fields are different from
>the near-field E and H fields. What is going on?
>

Hi Bill,

The continuum of the structure presents a delay (by "moments" to use the vernacular of MOM) that combines with all "moments" of the previously existing and "near" separated field(s) to cause local free-space media fluctuations in Z. At a greater distance, such differences become trivial.

The local fields present a non-homogenous free-space media, some of which is transparent, some of which is reflective, much of it somewhere in between. The antenna distorts the medium it resides in presenting much the same effect as gravity distorting the space-time continuum. This is a leap of faith, certainly, but offers a visualization that may be familiar. In optics it would be something like dispersion where the structure is smaller than the wavelength exciting it.

73's
Richard Clark, KB7QHC

3292. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 20:58:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d4ab4_8@corp.newsgroups.com>
Source record: 110537

Richard Clark wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>The forward part and re-reflected part from the source
>>are coherent and traveling in the same direction so they
>>cannot be separated for measurement purposes.
>
> That separation is unnecessary as it represents a sufficiently fixed
> value for every moment beyond the first millisecond for usual
> applications.

So what part of the generated signal is actually generated and
what part is merely re-reflected energy?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3293. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 20:59:15 UTC
From: Savage <look@this.con>
Message-ID: <1060981058.64215.0@ersa.uk.clara.net>
Source record: 110536
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment,uk.radio.amateur

Newsgroup line trimmed.
Followups set to rec.radio.amateur.antenna

"Dr. Anton Squeegee" <SpammersAreVermin@dev.null> wrote in message
news:MPG.19a6c82f8a965f239899d2@192.168.42.131...
> In article <1o8%a.372981$Fc6.34161254@amsnews02.chello.com>, radio
> says...
>
> > > i think to cross post that to all ham ng's should be considered as
spam.
> >
> > One mail at one newsgroup (is that spam?).
> > Some people see new adresses of other newsgroups! (hey is that an idea
for
> > people whoe does not know?).
>
> The 'Rules of the Road' for Usenet hold that a post is not spam if
> it has a BI (Breidbart Index) of less than 20. The BI is calculated by
> taking the square root of the total number of groups an article is
> posted to.
>
> Full details on this measure may be found here.
>
> http://www.stopspam.org/usenet/mmf/breidbart.html
>
> From what I can see, Cor posted an identical message to six
> groups. The square root of six is about 2.45, so his message cannot be
> considered spam under Usenet guidelines.
>
> Said guidelines are here.
>
> http://www.faqs.org/faqs/usenet/posting-rules/part1/
>
> If his posts bother you, well... most Usenet newsreaders do have a
> filter or 'killfile' function. ;-)
>

Pity you didn't read the whole article and spot the 45 day window Doc

Our friend has a current "probable" BI of 12.63 over a 9 day window at the
DSRS net abuse lookup archive. I have *not* checked for any nym shifts and
this present post has not yet reached the archive

de G6XCD

--
keeping usenet clean since April 2nd 1998

3294. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 21:13:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjqj74qh5qvc8d@corp.supernews.com>
Source record: 110538

EZNEC doesn't do the transformation you describe.

The following description is a very simplified version of how NEC works. I believe the whole NEC-2 manual is available on the web, for anyone who wants a deeper and surely more accurate explanation.

First, an impedance is calculated for each segment of each wire, and a mutual impedance for every segment relative to every other segment. This is done in a rather complex way by assuming that each segment has sine, cosine, and constant currents, calculating the field from each segment arriving at each other segment, and evaluating the current induced on the other segment by it. These impedances are put into a matrix, then the currents on each segment are found by solving Ohm's law in matrix form, where the E is provided by the specified sources. Once the currents are found, the impedance at each of the sources is known. The field from each segment is computed from the known current and assumed current distribution along the segment with an approximate integral equation that's solved numerically. The impedance of the medium (fixed at free space in NEC-2 but user selectable in NEC-4) is of course involved in this calculation, as it is for the mutual impedance calculation.

The fields are summed to obtain the overall field (both E and H) at any point the user specifies. Both are reported in a near field analysis output. In a far field calculation, the distance of the observation point to all segments is assumed to be the same, and only the E field is calculated.

An excellent and easy to follow description of the method of moments can be found in Kraus' _Antennas_, Second Ed. I assume it's in the third edition also, but it's not in the first. The NEC-2 manual recommends R.F. Harrington, _Field Computation by Moment Methods_ (McMillan, 1968) but I haven't seen this book.

I've tried to point out on this thread that although the feedpoint impedance is an impedance with the units of ohms, and the impedance of a plane wave in free space also has the units of ohms, they're not the same thing. Feedpoint impedance is the ratio of a current to a voltage. Wave impedance, or the intrinsic impedance of a medium, is the ratio of an E field to an H field -- it's also the square root of the ratio of the medium's permeability to its permittivity. An antenna converts currents and voltages to E and H fields, it doesn't just transform one impedance to another. Hence my insistence on calling an antenna a transducer rather than a transformer.

Any explanation of an antenna as a transformer will have to include parasitic array elements, which have zero feedpoint impedance, and array

elements that have negative feepoint resistances.

The answer to your last question is beyond my ability to answer. It's discussed in great detail in most electromagnetics and antenna texts.

Roy Lewallen, W7EL

William E. Sabin wrote:
> William E. Sabin wrote:
>
> For example, consider an EZNEC solution to an antenna, say a 50 ohm
> dipole. The far-field 377 ohm solution provided by the program is
> precisely the field that I am thinking about. How does EZNEC, with its
> finite-element, method-of-moments algorithm, transform a 50 ohm dipole
> input resistance to 377 ohms in free space?
>
> I don't want the equations, I want a word description (preferably
> simple) of how EZNEC performs this magic.
>
> The far-field E and H fields are different from the near-field E and H
> fields. What is going on?
>
> Bill W0IYH
>

3295. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 21:26:47 UTC
From: Savage <look@this.con>
Message-ID: <1060982711.64289.0@ersa.uk.clara.net>
Source record: 110539

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:xfudnQzF9s62sqCiXTWJjw@comcast.com...
>
> "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
> news:bhh82q$mf6$1@sparta.btinternet.com...
> > It won't be long before the ultimate fully automatic ATU is built into
> > transceivers.
> >
> I wouldn't pay for it. I would rather have a built in AC power supply. Not
> many people go mobile with a $2000 radio that weighs 25 lb; if they are
> serious about emergency communications, they will have a motor generator
> set. With a built in supply, you can run the transistors at some decent
> voltage, like 48V, and get your other voltages, like 3.3V and neg5V off
the
> same transformer. You can buy a 300W PC power supply for $30, which means
it
> costs less than $15 to make.
>
> Since the power supply would be a 120/220 offline switcher, you could
allow
> for 12V operation, if you insisted on it, by utilizing a tap on the
> transformer primary - probably add $5 to the cost.
>
> Tam/WB2TT
>
>

What use would an inbuilt 120/220V supply be to someone in say, NYC or
Buffalo right now?

'Twas I who asked the question because I'm looking for an ATU so that I can
play about with antennas. I have mains PSUs for home use and I can draw
enough juice to run the FT-817 all day long from my mobility scooter and
wheelchair batteries without leaving myself stranded, but if the antenna
won't tune, nobody can hear me scream (thankfully!)

de G6XCD

3296. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 21:51:22 UTC
From: radio <no@spam.com>
Message-ID: <uBc%a.374378$Fc6.34819863@amsnews02.chello.com>
Source record: 110541
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

I can single post it on all those newsgroups (what's the difference?).
Okay response comes also in all newsgroups, those few mails (also in the past) makes some people mad!?!?!?

I like to see when people comes also with urls of sites who have new software, or some intresting info!

News for the newsgroups!

Most of the spam is commercial adverticeing, I do NOT get payed for my website (I do not have to get payed).
It was many work, Im glad I helped some people on information.

http://sec.noaa.gov/pmap/gif/pmapN.gif
I found (on inet) this nice aurora map (each day a NEW....group fresh map!!!).

73's Cor

> > > i think to cross post that to all ham ng's should be considered as spam.
> >
> > One mail at one newsgroup (is that spam?).
> > Some people see new adresses of other newsgroups! (hey is that an idea for
> > people whoe does not know?).
>
> The 'Rules of the Road' for Usenet hold that a post is not spam if
> it has a BI (Breidbart Index) of less than 20. The BI is calculated by
> taking the square root of the total number of groups an article is
> posted to.
>
> Full details on this measure may be found here.
>
> http://www.stopspam.org/usenet/mmf/breidbart.html
>
> From what I can see, Cor posted an identical message to six
> groups. The square root of six is about 2.45, so his message cannot be
> considered spam under Usenet guidelines.
>
> Said guidelines are here.
>
> http://www.faqs.org/faqs/usenet/posting-rules/part1/
>

> If his posts bother you, well... most Usenet newsreaders do have a
> filter or 'killfile' function. ;-)
>
> --
> Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
> (Known to some as Bruce Lane, KC7GR)
> kyrrin a/t bluefeathertech d-o=t c&o&m
> "Quando Omni Flunkus Moritati" (Red Green)

3297. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 21:56:25 UTC
From: Savage <look@this.con>
Message-ID: <1060984491.64339.0@ersa.uk.clara.net>
Source record: 110540

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bhh82q$mf6$1@sparta.btinternet.com...
> It won't be long before the ultimate fully automatic ATU is built into
> transceivers.
>
Until then, we have usenet

> We've had AGC ever since the vari-mu screen-grid valve was invented 75
years
> back. This abolished the RF gain control but no doubt there is still a
> residue of moaners and groaners.

That'll be me Reg. I like to be able to turn mine up or down as the signal
or QRM demand
>
> The present so-called SWR meter (a stupid instrument if ever there was
one)
> can then be abolished from front panels and, indeed, exiled from radio
> shacks for evermore and a day. Good riddance!

Agreed, but it's still the cheapest and fastest way to check what's
happening, especially when it's raining outside
>
> To provide something to talk about, write on SWL cards and enter in log
> books, only the S-meter need be retained. This can be re-named "Received
> Signal Strength Meter" and calibrated in more meaningful terms such as
> decibels relative to 1 micro-watt.
>
> It's obvious from its name, a signal strength meter always has been a
power
> meter. Pre-21st Century Old Wives kindly note. ;o)

I can't see my S Meter [bar graph] without changing my specs and finding a
magnifying glass (damned miniaturisation!), but I stopped giving signal
reports when they started asking "What am I chucking you 5-4-3-2-1?" through
GB3RF back in the early 80's. If I can hear 'em, they're Q4 or Q5 (FM) or
R4 or 5 (SSB), except if they were calling CQ QRP when they'll get a full
report if requested. The only other exception is when they tell me they're
testing a new antenna or a new rig, then they get the full 'indicated'
report and I'll flick through the logbook for a previous report if there is
one. Of course this only applies to VHF, unless I was out with the club on
HF Field days

Good to meet you Reg. I think we've 'worked' this mode before when I was
with BTO, possibly in BTI support.

3298. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 22:14:56 UTC
From: radio <no@spam.com>
Message-ID: <AXc%a.425261$nU.20843433@amsnews03.chello.com>
Source record: 110542

Our friend has a current "probable" BI of 12.63 over a 9 day window at the
DSRS net abuse lookup archive. I have *not* checked for any nym shifts and
this present post has not yet reached the archive

de G6XCD

Hello G6XCD,

Can you explain those technical comments?
What do you mean with BI of 12,63.....????

73's Cor

"Savage" <look@this.con> schreef in bericht
news:1060981058.64215.0@ersa.uk.clara.net...
> Newsgroup line trimmed.
> Followups set to rec.radio.amateur.antenna
>
>
> "Dr. Anton Squeegee" <SpammersAreVermin@dev.null> wrote in message
> news:MPG.19a6c82f8a965f239899d2@192.168.42.131...
> > In article <1o8%a.372981$Fc6.34161254@amsnews02.chello.com>, radio
> > says...
> >
> > > > i think to cross post that to all ham ng's should be considered as
> spam.
> > >
> > > One mail at one newsgroup (is that spam?).
> > > Some people see new adresses of other newsgroups! (hey is that an idea
> for
> > > people whoe does not know?).
> >
> > The 'Rules of the Road' for Usenet hold that a post is not spam if
> > it has a BI (Breidbart Index) of less than 20. The BI is calculated by
> > taking the square root of the total number of groups an article is
> > posted to.
> >
> > Full details on this measure may be found here.
> >
> > http://www.stopspam.org/usenet/mmf/breidbart.html
> >
> > From what I can see, Cor posted an identical message to six
> > groups. The square root of six is about 2.45, so his message cannot be
> > considered spam under Usenet guidelines.
> >
> > Said guidelines are here.

> >
> > http://www.faqs.org/faqs/usenet/posting-rules/part1/
> >
> > If his posts bother you, well... most Usenet newsreaders do have a
> > filter or 'killfile' function. ;-)
> >
>
> Pity you didn't read the whole article and spot the 45 day window Doc
>
> Our friend has a current "probable" BI of 12.63 over a 9 day window at the
> DSRS net abuse lookup archive. I have *not* checked for any nym shifts
and
> this present post has not yet reached the archive
>
> de G6XCD
>
> --
> keeping usenet clean since April 2nd 1998
>
>

3299. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 22:17:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <3fmqjv4s29jrs83jmiues1jsvagn194cfd@4ax.com>
Source record: 110543

On Fri, 15 Aug 2003 15:58:08 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>The forward part and re-reflected part from the source
>>>are coherent and traveling in the same direction so they
>>>cannot be separated for measurement purposes.
>>
>> That separation is unnecessary as it represents a sufficiently fixed
>> value for every moment beyond the first millisecond for usual
>> applications.
>
>So what part of the generated signal is actually generated and
>what part is merely re-reflected energy?

Hi Cecil,

Separation is unnecessary after the first millisecond. Impedance from
that time on is sufficiently fixed to measure. You can answer your
own question from the resultant, but it is of no particular interest
in the determination.

73's
Richard Clark, KB7QHC

3300. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 22:41:27 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <ByCdnXyvQvqm_6CiXTWJig@ctc.net>
Source record: 110544

> proper voltage? When you connect speakers to an amplifier, do you
> worry about what the source impedance is, so long as it's low enough
> to not materially affect damping? If not, why would you worry about

I would not go there on the audio . The speakers do need to match the design of the amp just as the load on a transmitter needs to match the design impedance. Most power output devices are designed to produce maximum power and /or minimum distortion into a specific load.

3301. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-15 23:33:39 UTC
From: Cesco <me@mycall.com>
Message-ID: <3f3d6dba$0$236$4d4ef98e@read.news.ch.uu.net>
Source record: 110545
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

> Cor posted an identical message to six
> groups.

7. not six. look at the original post.

>The 'Rules of the Road' hold that a post is not spam if
>it has a BI

the 'rules of the NG' may not be measured by a dumb index,
but are highly subjective and related to the NG charta.

3302. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 00:03:14 UTC
From: Savage <look@this.con>
Message-ID: <1060992101.93215.0@damia.uk.clara.net>
Source record: 110546

"radio" <no@spam.com> wrote in message
news:AXc%a.425261$nU.20843433@amsnews03.chello.com...
> Our friend has a current "probable" BI of 12.63 over a 9 day window at the
> DSRS net abuse lookup archive. I have *not* checked for any nym shifts
and
> this present post has not yet reached the archive
>
> de G6XCD
>
> Hello G6XCD,
>
> Can you explain those technical comments?
> What do you mean with BI of 12,63.....????
>
> 73's Cor

As Doc Squeegee has already explained, your posts are counted by a mathmatical rule called the Briedbart Index.

The Briedbart Index allows you 20 points in any consecutive 45 days. According to the DSRS archive which is the master archive used by all abuse departments, you "may" have already scored 12.63 points in the last 9 days. You appear to have no record before that date, so I assume *without any evidence pro or con* that you have changed your username or some other detail in your headers. Once your score reaches 20, then anybody with cancel rights is free to cancel your posts as spam and you may also be at risk of being added to the spam filter spools such as NoCeM, CancelMoose and Spam Hippo or your account with Chello.com may be closed, or both. It doesn't matter if your site is free or commercial. What matters is the way you post to usenet to advertise your website and the content of the message body.

People may have already lodged complaints against you for excessive crossposting. This is their right and I believe in this instance they have valid reason.

Crossposting fills other groups with unwanted replies and starts flame wars long after your advert has been removed. Your reply to Doc Squeegee has gone to 6 newsgroups. I trimmed to newsgroup line in my reply to cover only those groups which I regularly watch, and set a followup so that your reply would only come to this one group to reduce the risk of arguments starting. As per the convention, I posted a note in the first line of my reply as a top post.

For a copy of the rules in Dutch, Google "Rosalind Hengeveld". I'm pretty sure she put the rules on her website at xess4all.nl

de G6XCD

3303. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 00:03:19 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <4SCdnSyPQ5hW6aCiXTWJiQ@comcast.com>
Source record: 110547

"Savage" <look@this.con> wrote in message
news:1060982711.64289.0@ersa.uk.clara.net...
>
> What use would an inbuilt 120/220V supply be to someone in say, NYC or
> Buffalo right now?

I was talking about large100 - 200 W radios. They won't run long off a battery, and if the person is serious about emergency communications, they had better have an emergency generator. You can't even rotate your antenna without AC.

If I had a QRP rig, yes, I'd get a battery pack for it.

Tam/WB2TT

3304. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 00:04:06 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <871xvmjwnd.fld@barrow.com>
Source record: 110548

"Ralph Mowery" <rmowery@ctc.net> wrote:
>> proper voltage? When you connect speakers to an amplifier, do you
>> worry about what the source impedance is, so long as it's low enough
>> to not materially affect damping? If not, why would you worry about
>
>I would not go there on the audio . The speakers do need to match the design
>of the amp just as the load on a transmitter needs to match the design
>impedance. Most power output devices are designed to produce maximum power
>and /or minimum distortion into a specific load.

Virtually all "HiFi" audio amplifiers are designed to have
"damping" factor of something significantly more than 10.
Damping factor is the ratio of the load impedance to the
amplifier's output impedance. You might even find a few (more
expensive units) that have ratios greater than 1000, which is to
say that the output impedance of the amp (designed to drive
speakers in the range of 4 to 16 Ohms), has an output impedance
of 4/1000 of an Ohm).

Just as with RF, the output impedance has little to do with the
power delivered to the load impedance. The amplifier can
generate a maximum voltage by design, and how much power is
actually delivered depends solely on the impedance of the load.
Hence the same amplifier can deliver twice the power to a 4 Ohm
speaker as it can to an 8 Ohm speaker, and that is twice what it
will deliver to a 16 Ohm speaker. And it also works just fine to
drive a 600 Ohm headset, with significantly less power.

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

3305. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 00:11:49 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhjss4$96p$1@sparta.btinternet.com>
Source record: 110549

> How can I lead myself astray by asking a question? :-)

You had led yourself astray long before you asked the question or you wouldn't have asked it. ;o)

> Forget reactance.

Good! I can't see why you dragged the reactance of fields in space into to the arena.

>The question remains: Can the E-field and H-field
> be out of phase if the voltage and current are in phase?

I answered your original question by saying that the near field due to a halfwavelength of wire along an antenna with standing waves (like a co-linear array of in-phase dipoles) was just the same as a halfwavelength along a wire in an antenna without any standing waves (like a Beverage). What applies to one must also apply to the other.

You have forgotten that fields exist in 3-dimensional space as well as in time. Movement (velocity) is also directly involved. Phase relationships between the various vectors depends on the direction (another vector) from which the observer (that's you) makes his observations.

Whereas, when you introduce volts and current in phase, you are referring only to a single point (in a straight length of wire) which has NO dimensions. It's just a location in space somewhere along a transmission line which is what an antenna wire actually is.

From occasional random sampling of the heated arguments presently taking place on this newsgroup it may be deduced that most of you baffle-gabbers don't have foggiest notions of what you are waffling about and there's no hope of you ever doing so unless you go back to school and the 12-times table and continue till you are familiar with Oliver Heaviside's mathematical description of electromagnetic radiation. There are only 3 simultaneous differential equations to contend with. As the ancient Iraqis and Greeks understood, all is a matter of Geometry in Motion. And THEY didn't have the benefit of Eznec.

I notice Roy has abandoned you to the wolves (CB-ers and M3-ers). His patience and hard labour have been exemplary.

Has that 50 million of you all got your electic lights fixed yet ? ;o)

Cecil excuses himself by saying it's the Devil who makes him do it. In my case it's only 3/4 of a bottle of Bulgarian red plonk.

Reg, G4FGQ, Hic!

>

3306. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 00:32:15 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Oe6dnRv9b90g5qCiU-KYgw@comcast.com>
Source record: 110550

Guys,

Try this out. You have an amplifier of unknown source impedance connected through a directional meter to a 1/4 wavelength line that is shorted at the far end. Without knowing about SWR, you know (because you are a ham radio operator) that the amp is driving an infinite impedance, and delivering 0 power. Now if you adjust the amp so the meter reads 100W in both directions, the amp is still delivering 0 power, and 100% of the reflected wave is rereflected. Where did the 100W come from? the amp delivered it during the first 1/2 cycle after it was turned on. It didn't "know" the line was shorted until the first reflection came back.

Tam/WB2TT
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f3d3cb9$1_2@corp.newsgroups.com...
> Richard Clark wrote:
> > You have a forward part from the transmitter,
> > a reverse part from the reflection.
>
> We are talking about re-reflection FROM THE SOURCE!
> The forward part and re-reflected part from the source
> are coherent and traveling in the same direction so they
> cannot be separated for measurement purposes. That's
> why Bruene tried to determine the source impedance by
> bouncing another separate signal off the source.
> --
> 73, Cecil, W5DXP
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3307. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:14:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d86bf$1_8@corp.newsgroups.com>
Source record: 110552

Richard Clark wrote:
> Separation is unnecessary after the first millisecond. Impedance from
> that time on is sufficiently fixed to measure. You can answer your
> own question from the resultant, but it is of no particular interest
> in the determination.

I don't have a question, Richard, I am trying to answer yours. What
difference can it make in the SWR if "separation is unnecessary"?
--
73, Cecil http://www.qsl.net/w5dxp

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3308. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:18:36 UTC
From: Savage <look@this.con>
Message-ID: <1060996620.96235.0@damia.uk.clara.net>
Source record: 110551

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:4SCdnSyPQ5hW6aCiXTWJiQ@comcast.com...
>
> "Savage" <look@this.con> wrote in message
> news:1060982711.64289.0@ersa.uk.clara.net...
> >
> > What use would an inbuilt 120/220V supply be to someone in say, NYC or
> > Buffalo right now?
>
>
> I was talking about large100 - 200 W radios. They won't run long off a
> battery, and if the person is serious about emergency communications, they
> had better have an emergency generator. You can't even rotate your antenna
> without AC.
>
> If I had a QRP rig, yes, I'd get a battery pack for it.
>
> Tam/WB2TT
>
>

I heard a rumour they had an emergency in the States. The electricity failed. Errrrrm, you were saying?

My present mobility scooter has 2x 12V 60Ah Gell traction batteries. That's around a month with the 817 or 5 hrs continuous Tx with 100W. At 2% duty cycle, they would last longer than I can stay awake. For a real emergency, I've always found a cellphone to be more use than a radio

I was turning stacked and bayed 10 ele arrays by hand at VHF field events 20 some years ago. I've done the same with a couple of big dual band and tri band yagis at HF events. It's even easier with HF wire antennas. Just throw up two wires at right angles to each other and you have 360 degree coverage at the flick of an antenna changeover switch. There's still a lot to be said for the old ways of steam radio.

Beats me how the talk got around to power supplies and 200W rigs but that's the nature of amateur radio. I asked about an ATU which would suit my FT817 and a 100W rig which I haven't yet decided to buy because I've just seen the new Icom 7800. It's a moot point now anyway, I got fed up and ordered the ATU so let's talk antennas.

Do people really pay ?200 sterling (US$300) for a wire antenna? I've just seen the price of the Carolina Windom Short 80 Special

3309. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:23:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d88d5_8@corp.newsgroups.com>
Source record: 110553

Reg Edwards wrote:
> I answered your original question by saying that the near field due to a
> halfwavelength of wire along an antenna with standing waves (like a
> co-linear array of in-phase dipoles) was just the same as a halfwavelength
> along a wire in an antenna without any standing waves (like a Beverage).

Unfortunately, that cannot be true. The maximum H-field amplitude at a current null cannot possibly be the same as the maximum H-field where a current null never exists.
--
73, Cecil http://www.qsl.net/w5dxp

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3310. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:31:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d8ab5_8@corp.newsgroups.com>
Source record: 110556

Tarmo Tammaru wrote:
> Try this out. You have an amplifier of unknown source impedance connected
> through a directional meter to a 1/4 wavelength line that is shorted at the
> far end. Without knowing about SWR, you know (because you are a ham radio
> operator) that the amp is driving an infinite impedance, and delivering 0
> power. Now if you adjust the amp so the meter reads 100W in both directions,
> the amp is still delivering 0 power, and 100% of the reflected wave is
> rereflected. Where did the 100W come from? the amp delivered it during the
> first 1/2 cycle after it was turned on. It didn't "know" the line was
> shorted until the first reflection came back.

How do you know that the amplifier is not "delivering" 100W of forward power
and dissipating 100W of reflected power (as it would with a circulator+load)?
How do you prove that the impedance looking back into the amp is zero, infinity,
or purely reactive? Doesn't it have everything to do with the arbitrary
definition of "delivered" which doesn't necessarily match reality?
--
73, Cecil http://www.qsl.net/w5dxp

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3311. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:32:11 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F3D899B.8B0FF0E3@cwis.net>
Source record: 110554

Savage,
$300 dollars will buy a hell of a lot of wire! I don't
understand why people pay that kind of money for a 'wire'
antenna.
'Doc

3312. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:34:13 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhk1mlsjo1@titan.btinternet.com>
Source record: 110555

Dear "Savage",

To use the american two-letter word - Hi!

There's insufficient info to deduce when and where we may have met in our previous lives. But I can confirm I am a long retired GPO engineer fortunate enough to escape just before Mrs T and Co. sold us off to the asset-stripping multi-national wolves.

Although I occasionally make (I hope humorously intended) criticisms of the contributions by frequenters of this newsgroup, there is no doubt about the group's high entertainment and, indeed, educational value, I have been a beneficiary and so become addicted to it.

I can't deny the benefit of a 20dB attenuator in seies with the aerial when assessing propagation conditions. But this is only because of imperfections which still remain in the AGC circuitry. They remain only because of the cost of improving receivers to the state when they can be considered to be received power level meters and calibrated in terms of dB relative to one microwatt.

Roy can then cease insisting that his own S-meter is the Western-world's standard of how many decibels are equivalent to one S-unit.

Reg, G4FGQ

3313. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:51:07 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhk2mbftm1@sparta.btinternet.com>
Source record: 110557

> Unfortunately, that cannot be true. The maximum H-field amplitude at a
current
> null cannot possibly be the same as the maximum H-field where a current
null
> never exists.
============================

Dear Cec, your nitpicking is inexhaustible and at this time in the morning I
havn't the energy to sort out what you are talking about.

Best to agree to differ, eh? ;o)

Reg.

3314. Re: Westflex 103

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 01:59:13 UTC
From: Steve <steve6690@hotmail.com>
Message-ID: <3f3d8ff6$0$961$cc9e4d1f@news.dial.pipex.com>
Source record: 110558

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:7mlUmSE+yNP$EAY2@ifwtech.co.uk...
> Steve wrote:
> >I'm currently using this coax with a vertical and I'm very pleased with
it.
> >I am building a 15 ele yagi for 2m and would like to use the Westflex but
> >I'm concerned that it might be a bit too stiff to use with a rotator
mounted
> >antenna. Has anyone tried this ?
>
> Yes, to my grief. If it's bent sharply, the inner conductor is pushed
> sideways and the copper foil tears. Even if you use a very big loop, the
> bending still tends to be concentrated into two small areas at the ends
> of the loop.
>
> It's better to get down below the rotator loop in a more flexible cable
> such as RG213, and then change to the low-loss Westflex for the longer
> part of the run.
>
>
> --
Joining the two lengths with 'N' plugs / adaptor ???

Steve

3315. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:02:16 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2t3rjvkp7asr6gbv2p1ud8djuf7lhc0t5c@4ax.com>
Source record: 110559

On Fri, 15 Aug 2003 20:14:17 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Separation is unnecessary after the first millisecond. Impedance from
>> that time on is sufficiently fixed to measure. You can answer your
>> own question from the resultant, but it is of no particular interest
>> in the determination.
>
>I don't have a question, Richard, I am trying to answer yours. What
>difference can it make in the SWR if "separation is unnecessary"?

Hi Cecil,

In the scope of Z determination, I am wholly unconcerned with what
precedes the first millisecond. Perhaps you should phrase your
question along other lines.

73's
Richard Clark, KB7QHC

3316. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:09:31 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <HP2cnT1y7JHDD6CiU-KYvw@comcast.com>
Source record: 110560

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f3d8ab5_8@corp.newsgroups.com...
> How do you know that the amplifier is not "delivering" 100W of forward
power
> and dissipating 100W of reflected power (as it would with a
circulator+load)?

Aha, I will give you special dispensation. You are allowed to bias the amp
for true class B, and measure the DC drain current. No way is the drain
current going to be different from the case of a plain open circuit. Power
(RF) can not be more than Power (DC)

> How do you prove that the impedance looking back into the amp is zero,
infinity,
> or purely reactive?

Use any RF impedance meter you want.

Doesn't it have everything to do with the arbitrary
> definition of "delivered" which doesn't necessarily match reality?

I think the only alternative in un nice; namely that there is no reflection
in steady state

Tam/WB2TT
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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3317. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:16:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d954e$1_6@corp.newsgroups.com>
Source record: 110561

Reg Edwards wrote:
> Dear Cec, your nitpicking is inexhaustible and at this time in the morning I
> havn't the energy to sort out what you are talking about.
>
> Best to agree to differ, eh? ;o)

I don't see how you can possibly assert that the fields are the same for
a standing-wave antenna and a traveling-wave antenna because they obviously
are not the same. A magnetic pickup at a current null on a standing-wave
antenna will read a low maximum value. A magnetic pickup at the same point
on a traveling-wave antenna will read a high maximum value.
--
73, Cecil http://www.qsl.net/w5dxp

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3318. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:19:19 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d95fe_6@corp.newsgroups.com>
Source record: 110562

Richard Clark wrote:
> In the scope of Z determination, I am wholly unconcerned with what
> precedes the first millisecond. Perhaps you should phrase your
> question along other lines.

You theorized uncertainty because of reflections from all directions.
You seem now to be "unconcerned" about that uncertainty.
--
73, Cecil http://www.qsl.net/w5dxp

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3319. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:23:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3d96f2$1_6@corp.newsgroups.com>
Source record: 110563

Tarmo Tammaru wrote:
> I think the only alternative in un nice; namely that there is no reflection
> in steady state

There are an infinite number of possibilities between the rails of 100%
re-reflection and zero re-reflection. I suspect a PA obeys the rules of
the wave reflection model set forth in Ramo & Whinnery.
--
73, Cecil http://www.qsl.net/w5dxp

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3320. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:35:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7t5rjvc9ufqn4te1lgg0opuivvgf1aha6l@4ax.com>
Source record: 110564

On Fri, 15 Aug 2003 21:19:19 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> In the scope of Z determination, I am wholly unconcerned with what
>> precedes the first millisecond. Perhaps you should phrase your
>> question along other lines.
>
>You theorized uncertainty because of reflections from all directions.
>You seem now to be "unconcerned" about that uncertainty.

Hi Cecil,

In the first millisecond, yes. Do you have a question about it
following that point in time?

73's
Richard Clark, KB7QHC

3321. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:51:21 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <J_g%a.152188$o%2.65532@sccrnsc02>
Source record: 110565

With so much 1/2" and 3/4" end of reel scraps at your local cable TV
franchise (most for free - to cart away) -
the disposal guys charge the CATV companies to take it away !!

The number of web links (amateur web pages) should give you an idea of how
many hams are using the CATV cable - especially
for VHF and UHF frequencies !

http://jonz.net/W3DHJ/catvhardline.html

http://www.n1bug.net/tech/catvline.html

http://www.rogerhalstead.com/conn.htm

http://www.qsl.net/k4pwo/connector.htm

http://www.repeater-builder.com/rbtip/w8zd.html

http://www.mindspring.com/~daverice/radio/hardline.htm

http://www.repeater-builder.com/rbtip/zdengineering.html

http://www.qsl.net/n9zia/wireless/hardline_connectors.html

w9gb

"W7TI" <noway@nohow.com> wrote in message
news:ubnojvo2gjika5cqck8t5oiq5tg5709ovi@4ax.com...
> Has anyone ever made their own hardline? I'm thinking 1/2 inch copper
> water pipe with a center conductor supported by some plastic discs
> spaced every so often. You might not get it exactly to 50 ohms but I'd
> think the loss would be so low it wouldn't really matter.
>
> Comments?
>
> --
> 73, Bill W7TI

3322. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:55:11 UTC
From: Savage <look@this.con>
Message-ID: <1061002415.99277.0@damia.uk.clara.net>
Source record: 110566

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bhk1mlsjo1@titan.btinternet.com...
> Dear "Savage",
>
> To use the american two-letter word - Hi!
>
> There's insufficient info to deduce when and where we may have met in our
> previous lives. But I can confirm I am a long retired GPO engineer
fortunate
> enough to escape just before Mrs T and Co. sold us off to the
> asset-stripping multi-national wolves.
>
> Although I occasionally make (I hope humorously intended) criticisms of
the
> contributions by frequenters of this newsgroup, there is no doubt about
the
> group's high entertainment and, indeed, educational value, I have been a
> beneficiary and so become addicted to it.
>
> I can't deny the benefit of a 20dB attenuator in seies with the aerial
when
> assessing propagation conditions. But this is only because of
imperfections
> which still remain in the AGC circuitry. They remain only because of the
> cost of improving receivers to the state when they can be considered to be
> received power level meters and calibrated in terms of dB relative to one
> microwatt.
>
> Roy can then cease insisting that his own S-meter is the Western-world's
> standard of how many decibels are equivalent to one S-unit.
> ----
> Reg, G4FGQ
>
>

I don't recognise your callsign, but your name rings a small bell from somewhere in my rather colourful past. I was with BTO for a couple of years. I was the retro mod with a couple of {ahem} "adult content" groups, but I spent a lot of time sorting out BTO's spammer problems through their support groups.

Roy? The infamous Mr Lewallen? I enjoy reading his posts as I have yours

I had noticed the humour levels in these groups. I've been picking off the spammers rather than joining the chat, (got to earn my shekels) but I have

been reading and refreshing half forgotten theory from the good replies here. I didn't let my ticket lapse, but I lost a box containing most of my shack when I moved down to Cambs from Lancashire. The two rigs which survived the trip arrived here damaged, despite being properly packed and padded. Between the insurance companies and me developing the necessary qualifications to become a RAIBC member, I seem to have forgotten most of the important things through lack of use.

I did a lot of HF operating with G3BRS (Bury Radio Society), the late G4TBT and my pal, the lapsed G4ZTB, so when I heard about the impending changes, I bought an FT-817 and started reading.

I'm out of usenet and radio for about a month. I'm off to JA land in a few hours time and taking a detour to ZL on business on the way home, but I will return, hopefully with something hugely discounted which I can smuggle through customs cunningly disguised as a wheelchair battery charger.

I'm QTHR on the call sites/book/CD, but currently only active on 10/2/70cms due to lack of antennas. You can bet the Wx will be foul when I return to put something into the air, but that's life

See you further down the log. Been nice chatting with you (again?)

de G6XCD

3323. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 02:58:33 UTC
From: tdonaly@aol.com
Message-ID: <20030815225833.22835.00000077@mb-m05.aol.com>
Source record: 110567

>
>
>I don't see how you can possibly assert that the fields are the same for
>a standing-wave antenna and a traveling-wave antenna because they obviously
>are not the same. A magnetic pickup at a current null on a standing-wave
>antenna will read a low maximum value. A magnetic pickup at the same point
>on a traveling-wave antenna will read a high maximum value.
>--
>73, Cecil http://www.qsl.net/w5dxp
>

What point are you talking about, Cecil? If I pick an arbitrary point on a
half-wave
dipole, how do I locate the same point on a traveling wave antenna?
73,
Tom Donaly, KA6RUH

3324. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 03:03:04 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <6l7rjv8oom6cnuteu1c2sarm2ia83mu1et@4ax.com>
Source record: 110568

On Fri, 15 Aug 2003 06:31:04 GMT, "Jimmy" <Gfender@carolina.rr.com>
wrote:

>Perhaps that are types and grades of motor oil out there that will work with
>certain types of resistors I dont think it very practical to research to
>find which are compatible. Perhaps the oil companies already know. You could
>make it a project to enquire with them and post the information on this news
>group.
>

Yeah, or hey! You could just use transformer oil. Art is being
pedantic and difficult.

Russ

>"Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
>news:85ed38d.0308110449.1e6d37e2@posting.google.com...
>> Russ,
>> The point I am making is that some comments are repeated
>> so many times they take a life of their own
>> Think about it, the resistors of old are a far cry from
>> the carbon resistors of today which are not as porous,
>> if it is a worry then coat it with epoxy !
>> Then there is the "rust" question, the paint cans of today
>> have a teflon liner ! Even the latest ham data states that
>> motor oil CAN be used (no, it will not explode !) but raise
>> a question of "life", possibly a suggestive comment that you
>> change the oil every 5000 qso's.
>> Certainly industry gives a good guide as to what is the best
>> to use for their circumstances but it doesn't rule out every
>> thing else for all time, and this includes motor oil of which
>> there are many types.
>> Regards
>> Art
>>
>> Russ <carlzomer@hotmail.com> wrote in message
>news:<s34ejvs8t0rafq25r6t2227kdul3vi4s0v@4ax.com>...
>> > On 10 Aug 2003 08:19:18 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
>> > wrote:
>> >
>> > >Well it would seem that the 'don't use motor oil' comment
>> > >which has been passed on by mouth to mouth over the decades
>> > >doesn't seem to stand up to scruteny.
>> > >Yes, the question is raised so many times over the years
>> > >and the same old stories pop up, but without any

>> > >substantiation such that it just appears to be gossip.
>> > >One statement mentions attack on resisters, where's the proof,
>> > >If it is true then it surely can be easily overcome.
>> > >Hopefully this time, one of the many posters over the
>> > >years on this subject will make observations that are
>> > >relevant to the present day instead of waiting for a book.
>> > >Art
>> > >
>> >
>> > Well Art, the detergents in modern motor oils are specifically
>> > formulated to dissolve carbon deposits and sludge (largely made up of
>> > carbon) and keep in in suspension. I'm pretty sure that the resistor
>> > in my Cantenna is carbon. Transformer oil is formulated to have a
>> > high dieletric strength. Mineral oil is relatively pure, lightweight
>> > petrolatum (like liquid Vaseline(r)) and has a pretty high dieletric
>> > strength just because of low impurities. Motor oil? I don't know.
>> > ATF? I don't know about that either. What I do know is that the
>> > designers of my dummy load specify either transformer oil or mineral
>> > oil. That's good enough for me. I'll mosey on down to the
>> > transformer shop of the local electric utility and buy the folks there
>> > a round of coffee in the morning or over to the veterinary supply and
>> > buy a gallon of mineral oil U. S. P. I think it's safer that way. We
>> > hams are in interestingly cheap lot. We'll spend thousands on a new
>> > rig that could break down tomorrow and then pour a gallon of
>> > "whatever" into the dummy load instead of spending twenty bucks for
>> > mineral oil or fifty bucks for MFJs transformer oil. This in a unit
>> > that with ordinary care will last a lifetime. Sheesh!
>> >
>> > Russ
>> >
>> > >
>> > >
>> > >
>> > >
>> > >
>> > >
>> > >
>> > >"Keyboard In The Wilderness" <KITW@forest.com> wrote in message
>news:<4q8Za.31351$ff.14186@fed1read01>...
>> > >> From the Google Group Search Engine: For what it is worth
>> > >>
>> > >> The Handbook (at least my 1990 edition) has some information on this
>> > >> subject.
>> > >> In the Station Accessories chapter there are plans to build a couple
>of
>> > >> Cantenna type dummy loads. They mention an oil sold by Texaco (if I
>remember
>> > >> correctly) for turbine lubrication that is, according to the author,
>the
>> > >> same

>> > >> oil as is used in transformers. They quote the exact product
>designation.
>> > >> Apparently, it's sold in minimum 5 gallon quantities and I think it's
>about
>> > >> $5 per gallon. If anyone's interested, let me know and I'll look up
>the
>> > >> information and pass it along. It's supposed to be PCB-free, also.
>> > >>
>> > >> The article also cautions against using motor oil for various
>reasons, among
>> > >> which is that it attacks the resistor (actually, I think it's the
>additives
>> > >> that cause the problem).
>> > >>
>> > >>
>> > >>
>> > >>
>> > >> "Art Unwin KB9MZ" <aunwin@insightbb.com> wrote in message
>> > >> news:85ed38d.0308090649.58de8f41@posting.google.com...
>> > >> > "Keyboard In The Wilderness" <KITW@forest.com> wrote in message
>> > news:<fjUYa.31252$ff.5358@fed1read01>...
>> > >> > > Jav -- asked many times before -- for the answers go to Groups
>> > Google.com
>> > >> > > http://groups.google.com/
>> > >> >
>> > >> > I don,t fully understand why motor oil should not be used
>> > >> > in a dummy load! I need to make one so I can calibrate
>> > >> > one of my instruments. I intend to use one of the uptodate
>> > >> > gallon paint cans that has a PTFE liner and solder the lid on.
>> > >> > Since we now have the means to use low wattage signals for
>> > >> > tuning up purposes there is obviously no reason to store it
>> > >> > in the shack . So what really is the problem with using
>> > >> > available oil instead of emulating the aproach of industrial
>> > >> > transformers or regurgitating old thoughts ?
>> > >> > Art
>> > >> >
>> > >> >
>> > >> >
>> > >> >
>> > >> >
>> > >> >
>> > >> >
>> > >> > >
>> > >> > > Search for Oil For Cantenna or Oil For Dummy Load
>> > >> > >
>> > >> > > Mineral Oil works well for me.
>> > >> > >
>> > >> > >
>> > >> > > "Javier Henderson" <javier@KJSL.COM> wrote in message
>> > >> > > news:863cgbdfxq.fsf@skylane.kjsl.com...

>> > >> > > > I got a Heathkit Cantenna recently, sans oil.
>> > >> > > >
>> > >> > > > Where do I find transformer oil? The few industrial suppliers
>in my
>> > >> > > > area (Monterey, CA) want to sell me drums of the stuff. I only
>need
>> > >> > > > a gallon...
>> > >> > > >
>> > >> > > > Is motor oil OK to use?
>> > >> > > >
>> > >> > > > 73,
>> > >> > > > -jav w6vms
>

3325. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 03:53:07 UTC
From: Steve KA4TMB <steven.heydeNO@SPAMcomcast.net>
Message-ID: <c7OdnRVn4uQ4N6CiXTWJgA@comcast.com>
Source record: 110469
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

Bruce,

But did you look at the date of this material?

"Archive-name: usenet/spam-faq
Posting-Frequency: weekly
Last-modified: 1997/03/25"

Last-modified: 1997... It seems that this info is just over six years old, if I am reading the
article right. (Yes, I did read the article). Technologically speaking, this is ancient news,
worthy of needing to be 'updated' to today's standards.

You also need to consider *how many* different NGs a single person might subscribe to, and all
the additional messages one person might have to "filter" through. This means a BI of 2.45 is
far greater than it seems.

Personally, I (1.) like some of the stuff Cor posts, and (2.) only subscribe to the
'alt.ham-radio.vhf-uhf' NG, so I don't see so much of the same thing. I used to subscribe to
ALL of the 'alt.ham-radio.???' NGs, but it was too much repetition.
--
Regards,
Steve KA4TMB

"Dr. Anton Squeegee" <SpammersAreVermin@dev.null> wrote in message
news:MPG.19a6c82f8a965f239899d2@192.168.42.131...
>
> The 'Rules of the Road' for Usenet hold that a post is not spam if
> it has a BI (Breidbart Index) of less than 20. The BI is calculated by
> taking the square root of the total number of groups an article is
> posted to.
>
> Full details on this measure may be found here.
>
> http://www.stopspam.org/usenet/mmf/breidbart.html
>
> From what I can see, Cor posted an identical message to six
> groups. The square root of six is about 2.45, so his message cannot be
> considered spam under Usenet guidelines.
>

> Said guidelines are here.
>
> http://www.faqs.org/faqs/usenet/posting-rules/part1/
>
> If his posts bother you, well... most Usenet newsreaders do have a
> filter or 'killfile' function. ;-)
>
> --
> Dr. Anton Squeegee, Director, Dutch Surrealist Plumbing Institute
> (Known to some as Bruce Lane, KC7GR)
> kyrrin a/t bluefeathertech d-o=t c&o&m
> "Quando Omni Flunkus Moritati" (Red Green)

3326. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 04:07:33 UTC
From: Savage <look@this.con>
Message-ID: <1061006768.4051.0@damia.uk.clara.net>
Source record: 110470

"'Doc" <w5lz@cwis.net> wrote in message news:3F3D899B.8B0FF0E3@cwis.net...
>
>
> Savage,
> $300 dollars will buy a hell of a lot of wire! I don't
> understand why people pay that kind of money for a 'wire'
> antenna.
> 'Doc

Hi Doc. I'm not sure that I would spend the equivalent of $300 on a triband HF beam and a tiltover crank up lattice tower let alone a bag full of wire and a couple of dog bones. My 10m vertical is a retuned 5/8y CB antenna salvaged from a house remodelling. I got 10M of Mil Spec RG213 attached as well, all free for the asking. My 10m dipole is made from 8mm copper microbore CH tubing and the connector insulator from a discarded UHF TV antena. They both do all I ask of them and they cost no more than pocket change for connectors at the shack end and a scotchbrite pad. I did buy a triband collinear for 6/2/70cm in a glass fibre tube due to restricted space and someone turning up with ladders a week earlier than expected, but since then, I've managed to stack a pair of 2m folded dipoles salvaged from a 2m crossed yagi and it's outperforming the commercial collinear just hanging out of the window on a bit of string.

When I get around to it, I'll buy a wire pack and build my own atennas. I might have fathomed out the math to complete my 20M hammock by the time I get back home. In the meantime, I need to do some serious studying on the subject of current and voltage baluns for the longer antennas I have planned. Do I make the windings clockwise or counterclockwise in the Northern Hemisphere?

73 de G6XCD

3327. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 04:10:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3db00f_5@corp.newsgroups.com>
Source record: 110472

Tdonaly wrote:
> What point are you talking about, Cecil? If I pick an arbitrary point on a
> half-wave dipole, how do I locate the same point on a traveling wave antenna?

It's not me who is saying every 1/2WL is the same for both antennas
so I don't know how to locate the same point.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3328. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 04:11:48 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308152011.79c5f1fc@posting.google.com>
Source record: 110471

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f3d331d$1_2@corp.newsgroups.com>...
> Dr. Slick wrote:
> > "Forward Incident" a bit redundant in my opinion. "Incident"
> > usually refers to the power moving towards the load, away from the
> > generator.
>
> I don't think that is true. The HP ap note, AN 95-1, refers to
> "the voltage wave incident on port 1" and "the voltage wave
> incident on port 2". Those two waves are moving in opposite
> directions, one toward the load and one toward the source.

Well, this is clearer than what you wrote earlier, as they have
included the "on port 1" part, whereas you stated just "incident
reflected", which told us nothing.

Slick

3329. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 04:34:36 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308152034.69d4cc0c@posting.google.com>
Source record: 110473

"Savage" <look@this.con> wrote in message news:<1060982711.64289.0@ersa.uk.clara.net>...
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
> news:xfudnQzF9s62sqCiXTWJjw@comcast.com...
> >
> > "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
> > news:bhh82q$mf6$1@sparta.btinternet.com...
> > > It won't be long before the ultimate fully automatic ATU is built into
> > > transceivers.
> > >
> > I wouldn't pay for it. I would rather have a built in AC power supply. Not
> > many people go mobile with a $2000 radio that weighs 25 lb; if they are
> > serious about emergency communications, they will have a motor generator
> > set. With a built in supply, you can run the transistors at some decent
> > voltage, like 48V, and get your other voltages, like 3.3V and neg5V off
> the
> > same transformer. You can buy a 300W PC power supply for $30, which means
> it
> > costs less than $15 to make.
> >
> > Since the power supply would be a 120/220 offline switcher, you could
> allow
> > for 12V operation, if you insisted on it, by utilizing a tap on the
> > transformer primary - probably add $5 to the cost.
> >
> > Tam/WB2TT
> >
> >
>
> What use would an inbuilt 120/220V supply be to someone in say, NYC or
> Buffalo right now?
>
> 'Twas I who asked the question because I'm looking for an ATU so that I can
> play about with antennas. I have mains PSUs for home use and I can draw
> enough juice to run the FT-817 all day long from my mobility scooter and
> wheelchair batteries without leaving myself stranded, but if the antenna
> won't tune, nobody can hear me scream (thankfully!)

http://www.ldgelectronics.com/products.html

>
> de G6XCD

w3rv

3330. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 04:37:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3db653_5@corp.newsgroups.com>
Source record: 110475

Dr. Slick wrote:
> Well, this is clearer than what you wrote earlier, as they have
> included the "on port 1" part, whereas you stated just "incident
> reflected", which told us nothing.

I stated: If ..., PA's will always re-reflect 100% of the incident
reflected power. That's obviously reflected power incident upon
the PA.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3331. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 04:39:19 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308152039.7f48367e@posting.google.com>
Source record: 110474

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjqgpv3bmh2m10@corp.supernews.com>...
>
> Let me explain why I leave these discussions.
>
> I certainly don't know everything, and am constantly learning. But not
> from threads like this one. I can change the SWR on a transmission line
> by renormalizing my Smith chart? Is that a "logical point" I'm running
> away from?
>

Just because you don't understand someone doesn't mean they are
wrong. But it's easy to give up trying to understand people if you
want to maintain the illusion that you are All-knowing.

From Pozar's Microwave Engineering:

Reflection Coefficient = (Zl-Zo)/(Zl+Zo)

Where Zl is a purely real load impedance, and Zo is the
purely real characteristic impedance reference.

When you change Zo, you change the normalized center of the
Smith, and therefore the Ref. Coeff. and SWR, looking into the same
load.

The Smith Chart is an extremely powerful graphical RF tool, which
has become part of the basis for communicating in the RF world, as
well as a standard for displaying impedance on most RF measuring
devices.

You need to read up on this if you want to understand me.

> The reason I post in the first place isn't to try and convince the party
> I'm directing my posting to. Nor is it an ego trip. What I hope to
> accomplish is to provide a counterpoint to what I see as incorrect
> information. This group is read by a very large number of "lurkers" who
> seldom or never post. I know this for a fact, because many of them
> introduce themselves to me at Dayton and other places I appear publicly.
> When someone posts misinformation on this group, I try to present what I
> consider to be correct.
>

Even when the other person is correct too? I think it IS an ego
trip if you can't admit someone has a point, and are too scared to
discuss it further for fear of looking weak or exposing a lack of
knowledge about something.

>
> (*) For example, have you ever looked up the equations for calculation
> of SWR? Noticed that there's no term for the source impedance? And no
> term for your Smith chart normalization factor?

From Pozar's Microwave Engineering:

Reflection Coefficient = (Zl-Zo)/(Zl+Zo)

Where Zl is a purely real load impedance, and Zo is the
purely real characteristic impedance reference.

When you change Zo, you change the normalized center of the
Smith, and therefore the Ref. Coeff. and SWR, looking into the same
load.

Slick

3332. Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 04:44:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308152044.430405ad@posting.google.com>
Source record: 110476

From Pozar's Microwave Engineering (Pg. 606):

Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

Where Zl is a purely real load impedance, and Zo is the
purely real characteristic impedance reference.

When you change Zo, you change the normalized center of the
Smith Chart, and therefore the Reflection Coefficient and SWR, looking
into the same load.

Check it out...

Slick

3333. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 07:07:16 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <DKk%a.102441$0v4.7085137@bgtnsc04-news.ops.worldnet.att.net>
Source record: 110477

Richard,

It always astounds me how the technically challenged are wont to launch ad hominem attacks instantly when matters evidently beyond their understanding, or perhaps in disagreement with their preconceived notions and prejudices, are brought to light.

I note that not a single statement that I made in my posting is either declared incorrect or is replaced by your version of "truth."

All I read is a lot of disconnected, poorly conceived and worded "slams" at me for posting the piece in the first place.

The note was addressed to Ian who points out that he agrees totally with everything that I said. Why not select him as a target as well ? Double your pleasure with two targets! And, of course, appear the fool twice for making such an inane posting in the first place.

Further to the point, no one has offered a single word of disagreement with the factual content of the posting. Only you have felt compelled to take your valuable time to post nonsense mouthings having nothing to do with the subject matter.

Richard, in the past I have had a small degree of respect for your postings and your viewpoints, but if this is the best you can do now, then clearly it is time for you to resume your meds.

Historically, you seldom if ever contribute anything of substance to a discussion but rather tend to sit on the sidelines making learned comments about the abilities of the participants to present their material and the degree to which they fail to meet your high standards for discourse.

Yep, time for the meds . . .

Or, perhaps you could actually contribute something of value by telling us where my posting is in error in *fact*, not in error for having been posted. I presume that you feel capable of tackling that chore.

But, you are right about one thing: if you are an example of "us folks" then I am definitely not one of you, and very proud of it.

73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:o28pjv0e6jm9qa19qbqsjv1to5k19l2ppa@4ax.com...
> On Fri, 15 Aug 2003 07:45:32 GMT, "George, W5YR" <w5yr@att.net>
> wrote:
>
> >About all that anyone needs to know about an amateur radio amplifier
> >(transmitter) in order to use it properly is the output power level and
the
> >required load resistance.
>
> Hi George,
>
> And us folk need never worry about what is beneath the hood as long as
> we don't need a mechanic. Sheesh, haven't you learned to turn the
> knob until the meter is full scale? All you have to really remember
> to push the button before you talk!
>
> >The latter is usually 50 ohms for a variety of
> >reasons, most of which relate to convenience, availability of coax
cables,
> >test equipment impedance environment, etc.
>
> For which us same folk STILL don't give a fig. Are you some sort of
> salesman? Who uses coax when telephone wire is free? You got stock
> in this cable stuff? I got satellite and I don't need it.
>
> > Beyond those values, there is
> >nothing about the amplifier design which is used in designing and
adjusting
> >the remainder of the tuner, transmission line and antenna system.
>
> What are you talking about designing? Is your charge card void? Do
> the sales clerks ignore you? Have you consider stitching your own
> semaphore flags for a hobby instead? At least no one would laugh as
> much for all the arm waving.
>
> >The power
> >level is of importance only in telling us how much voltage and current is
> >involved in various parts of the system.
>
> None of us folk even think of voltage or current, this impotence is
> not needed to make a contact. What's the point?
>
> >
> >The result is the ultimate in convenience.
>
> Something that us folk take for granted and never give a thought to
> because it is exactly that: convenient. Are you writing a magazine
> article no one reads? I hope you include lots of pictures. I prefer
> Reader's Dogma myself.
>

> > We need have no intimate
> >knowledge of "what is in the black box" in order to use it properly.
>
> Us folk would ask "what is in the black box? What are YOU talking
> about?" My boxes are brown like any from the liquor store. The only
> black box I've seen was at the cemetery. I don't think I will worry
> how to use THAT properly - thank you!
>
> >In
> >fact, even if we had full knowledge of all the particulars of the design,
we
> >would still use only its required load resistance and power levels
> >associated with it modulation waveforms, etc.
>
> WE? You don't talk like one of us folk!
>
> >
> >Our modern amateur transmitters and amplifiers even have a convenient
meter
> >on the front panel that tells us when we have met our obligation to
provide
> >a 50+j0 ohm load. It may be labeled "SWR" and calibrated in an unusual
> >scale, but the important thing is that when it reads 0 or "1:1 SWR" that
> >tells us that we have met the load resistance obligation - nothing more
or
> >less.
>
> Who looks at that - are you one of those goggle-eyed professors that
> try to 'splain the meaning of life? You missed that by a country mile
> and still don't seem to have learned about what knobs are for. Twist
> one and push buttons until someone talks back. Your black box
> obviously has none of the modern conveniences, is it a telegraph?
>
> >
> >I think that a great deal of confusion over this whole issue comes from
two
> >sources:
> >
> >1. vague efforts to apply the infamous "Maximum Power Transfer Theorem"
from
> >the early days in undergrad EE school; and
>
> Us folk never went to this underground school, nothing to be confused
> about at all. Are your problems from being a squinty-eyed miner?
> Maybe that's why you can't read these meters. Pull the blinds and
> take a load off your peepers.
>
> >
> >2. confusing an r-f transmitter output stage with the classical "signal
> >generator" with a dissipative 50-ohm internal resistance.

>
> What language are you trying to talk?
> >
> >Forget both of those irritants and concentrate on the required load for
the
> >transmitter, which the designer will provide and insist upon, and then
> >adjust the antenna system to provide that load and all will be well.
>
> Gawd this is complexity for its own sake, you white coated pencil
> necked geeks need to get a life. If you are looking for the good
> times, pop the cap off a cold long-neck. I hope you don't need a
> glass, you would strangle fun out of TV.
>
> >
> >At no point will anyone, including the r-f amp designer in all
likelihood,
> >know or even care what the so-called "internal resistance" of the
amplifier
> >happens to be. He demands only one thing: the specified load resistance.
> >Given that, his design will deliver the required power, efficiency, heat
> >load, harmonic content, distortion levels, etc. etc.
>
> Infernal resistance is right. distortion is what I don't want to hear
> and what you are spouting on about is rattling the cone on my speaker.
>
> >
> >I know of no instance in the design of everything connected to the output
> >port of the transmitter where there is need to know anything other than
the
> >required load resistance for the amplifier and the power levels (average,
> >peak, etc.).
>
> Is this bragging or complaining? Talk to your chaplain for relief.
>
> >
> >Why do folks make this so complicated, Ian?
> >
> >73/72, George
>
> Oh! a philosopher hmm? About the only complication is the broken
> lever of my Lazy Boy. Do you have a screw driver? Drink it college
> boy, but don't ralph on the couch when you pass out.
>
> 73's
> The mythical lurker.... ;-)

3334. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 07:25:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjrn3b1e71gb89@corp.supernews.com>
Source record: 110478

Ok, I'll try once more.

Look again at what I wrote earlier:

>No, you won't see a change in the SWR at point 1 as you change the PA
>> impedance. All the fiddling you do with your Smith chart just won't
make
>> it happen. Sorry.
>>
>> The SWR, voltage, current, impedance, power, reflection coefficient,
>> waves, or anything else don't change in response to your Smith chart
>> exercises.
>>

To which you replied:

> Absolutely incorrect. Time for you to review your Smith Chart
> again.

Here's an experiment for you to try.

On your workbench, measure the characteristic impedance of a cable, or connect it to a source or load and measure the SWR on it. Now go over to your desk, take out your grease pencil, and change the reference impedance of your Smith chart. Go back to the bench, check the SWR and the cable Z0. Has it changed?

If the answer is yes, I'll admit having a serious shortcoming in my knowledge of the power of the Smith chart.

If *you'll* review the Smith chart again, you'll find that *if* you set the reference impedance to the Z0 of the transmission line you're analyzing, then the SWR, impedances, and so forth that your read from the Smith chart are correct. If you set the reference impedance to some other value, an SWR read from the chart certainly isn't the SWR on the transmission line.

Z0 in the equation you quote refers to the characteristic impedance of a transmission line. If you change the impedance of the transmission line, given the same load impedance Zl, you change the SWR, as the equation indicates. (Changing the reflection coefficient changes the SWR on the line.) But changing the reference value on your Smith chart doesn't change the characteristic impedance of the cable.

Now let's see what you wrote this time:

Dr. Slick wrote:
> . . .

> When you change Zo, you change the normalized center of the
> Smith, and therefore the Ref. Coeff. and SWR, looking into the same
> load.

Yes. When you change the line's Z0, you should change the normalization
of the Smith chart. But changing the normalization of the Smith chart
doesn't magically change the cable dimensions to give it a
correspondingly new Z0. (Or does it? Something I'm missing here?)

> The Smith Chart is an extremely powerful graphical RF tool, which
> has become part of the basis for communicating in the RF world, as
> well as a standard for displaying impedance on most RF measuring
> devices.
>
> You need to read up on this if you want to understand me.

Thank you, although I'm not an expert at using the Smith chart, I know
my way around the circle. But perhaps more study would reveal the
mechanism by which changing the chart reference causes spontaneous
redimensioning of the cable.

> Even when the other person is correct too? I think it IS an ego
> trip if you can't admit someone has a point, and are too scared to
> discuss it further for fear of looking weak or exposing a lack of
> knowledge about something.

All right, I was scared to admit that you have a point, that all you
have to do to change a line's SWR is to go over to the desk and change
your Smith chart. But I've overcome my fear now, and am exposing my
ignorance, or weakness as you say, for all to see.

I'd like to learn more about the mechanism, though. When you renormalize
your Smith chart, is the line's Z0 changed by a spontaneous change in
inner conductor diameter, outer conductor diameter, dielectric
permittivity, or some combination? Is it some sort of telekinesis, or
perhaps something to do with Chi? I never could quite get the hang of
Feng Shui, so maybe that's it. I can't find any reference to the
phenomenon you're claiming in my engineering texts -- perhaps an occult
or New Age bookstore would be more fruitful?

> From Pozar's Microwave Engineering:
>
> Reflection Coefficient = (Zl-Zo)/(Zl+Zo)
>
> Where Zl is a purely real load impedance, and Zo is the
> purely real characteristic impedance reference.
>
> When you change Zo, you change the normalized center of the
> Smith, and therefore the Ref. Coeff. and SWR, looking into the same
> load.

Almost right, but a misplaced "therefore". The reflection coefficient
and SWR don't change because you change the Smith chart normalization.

They change because you've changed the cable's Z0. If you know how to use a Smith chart correctly, you can then go and renormalize your Smith chart to the new Z0 (as you've said), and from it you can read what the new reflection coefficient and SWR are. Or you can forget the Smith chart altogether and measure them, or calculate them from an equation. But if you normalize your Smith chart to some value other than the cable's Z0, you're no longer reading the transmission line impedances and SWR from it.

It sure looks to me like you're confusing reality with what you read from your arbitrarily normalized Smith chart. They're not the same. Just like the reading on an SWR meter isn't the same as the SWR on a transmission line of a different impedance. And actually for exactly the same reason. Hm, maybe that provides even one more way to say it. Set up your source, cable, and SWR meter like you have it in your earlier posting. Replace the 50 ohm SWR meter with a 75 ohm SWR meter. Renormalize your Smith chart for 75 ohms. Presto! The SWR meter reads the same as the Smith chart! But y'know what? YOU DIDN'T CHANGE THE SWR ON THE TRANSMISSION LINE. Put the 50 ohm SWR meter back in just on the load side of the 75 ohm one. It reads just the same as it did before, and it's reading the actual SWR on the 50 ohm line between it and the load.

Again, changing the Smith chart's normalization does not change a cable's Z0 or SWR. Feng Shui and voodoo notwithstanding.

A Smith chart is simply (not to disparage in any way its ingeniousness or utility) a polar plot of reflection coefficient on a special scale. (The trick is, of course, generating the scale, an exercise in conformal mapping I recall doing in fields class.) Check it out -- measure the length of the vector from the center to any impedance point (with the chart radius equalling one), and the angle from the main axis (zero ohms being the positive direction), and you'll see you have the reflection coefficient.

I can't figure out any more ways to say this.

I am always interested in learning. I don't use a Smith chart a great deal, but I know Tom Bruhns, a regular poster here, does. I'll gladly defer to him on issues of Smith chart use, and hope he'll feel free to correct me on any errors I've made in the above discussion -- as he has a number of times in the past, and which I've greatly appreciated. Walt Maxwell, an occasional poster, is truly a Smith chart expert, and I'd also welcome any corrections or amplifications he'd care to make. Or any other knowledgeable Smith chart user.

Roy Lewallen, W7EL

3335. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 07:39:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjrnt7fm9o25da@corp.supernews.com>
Source record: 110479

Among the posters on this topic, I'd be willing to bet a substantial sum that at least Tom, Ian, Cecil, Bill, and I can recite that formula from memory. In addition, there are a number of other regular and occasional newsgroup posters in this category who've been wise enough to not having posted on this thread, and some who have posted whom I don't know well enough to put my money on. I'd be willing to further bet that Ian, Cecil, Bill, and I could have done so at any time for at least the last 20 years. I omit Tom from this second list only because I haven't yet met him in person and otherwise haven't gotten any hints of his age -- but I'll take a gamble and spot him 10 years at least. Furthermore, we all know how to use it, and have done so countless times in the process of designing systems that work.

I'm glad you've discovered this equation. Learn what it means and how to use it, and you've taken a good first step toward understanding transmission line phenomena.

Roy Lewallen, W7EL

Dr. Slick wrote:
> From Pozar's Microwave Engineering (Pg. 606):
>
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>
> Where Zl is a purely real load impedance, and Zo is the
> purely real characteristic impedance reference.
>
> When you change Zo, you change the normalized center of the
> Smith Chart, and therefore the Reflection Coefficient and SWR, looking
> into the same load.
>
>
>
> Check it out...
>
>
> Slick

3336. Re: Westflex 103

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 08:34:29 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <WF$vOkGVyeP$EAv1@ifwtech.co.uk>
Source record: 110482

Steve wrote:
>> It's better to get down below the rotator loop in a more flexible cable
>> such as RG213, and then change to the low-loss Westflex for the longer
>> part of the run.
>>
>>
>> --
>Joining the two lengths with 'N' plugs / adaptor ???

Yes - have you already discovered the special tricks for fitting N plugs
to 103, or do you need that information?

(It would be dead simple to show you, but would take a lot of words to
describe.)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3337. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 09:38:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5enrjvcj7osed3uro9ig4j5bislrpaqi82@4ax.com>
Source record: 110480

On Sat, 16 Aug 2003 07:07:16 GMT, "George, W5YR" <w5yr@att.net>
wrote:

>Richard,
>
>It always astounds me how the technically challenged are wont to launch ad
>hominem attacks instantly

Do you accept that yours similarly deflates your credentials? It
would at least place us on equal footing - in the gutter I suppose,
but I brought my snorkel. ;-)

>
>73/72, George

Hi George,

If you suffer the heat of taking a stand, so much for a test of faith.
I have not seen you respond to the chain of evidence I have supplied
to these matters. I will offer that this body of work long preceded
my missive. You might or might not find that work
interesting/correct/or worthy of your attention, but that does not
erase if from the archive nor detract its intrinsic merit in desired
measure to bruised ego.

Pick any ONE of your cherished notions that I so soiled and put it up
for a clear and concise examination.

OR

Let me head that off with a very simple question that most dodge; and
in fact lies at the very heart of your subject line:
Given the premise that the amateur's rig output Z is NOT 50 Ohms, what
value does it have (cite any assembly of conditions)?

You will no doubt get many thumps on the back from well-wishers who
spit in my direction. How many will offer a numeric response to that
technical enquiry? I can forecast that will stand at the current
exchange rate of 0. I will also forecast there will be either total
silence, or scattered muttering about why they wouldn't engage such a
scurvy fellow as me. And yet the absence of that number from the
discussion under this subject line mocks the charter of this group
more than my humor did you.

Is it lower than 50? Higher than 50? How much? The stunned silence
in response to such simple, forced speculation is more a result of
intellectual catatonia than moral indignation.

Those who have offered numbers (I count among them), who have revealed methods of their derivation (I count among them), who performed actual bench work (I count among them), who offer rationale as to the subject's correlation to other observables (I count among them) is notable in contrast to those who have nothing to show but the shallow rhetoric of impotent denial.

73's
Richard Clark, KB7QHC

3338. QRe: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 12:01:36 UTC
From: Phil <philip.bradway@verizon.net>
Message-ID: <A2p%a.2299$N37.960@nwrdny02.gnilink.net>
Source record: 110481

I've made a short section (12") of hard line for a MW dish feed. It's no easy task! size relationships are critical and there's no easily available material for the center conductor the right size for 1/2" copper pipe. I ended up using hobby brass tubing for the project. The transition between the center conductor and the connector is a bit finicky, too. Forming the taper is a pain! The return loss is 7 at 3gHz, not great, but usable. In short, the suggestions about CATV hard line are good ones, The 3/4 " works up to 5 gHz with reasonable losses and that's with home brew connectors.

Good luck!

Phil, KB2HQ

"G.Beat" <now9spamgb@spam.comcast.net> wrote in message news:J_g%a.152188$o%2.65532@sccrnsc02...
> With so much 1/2" and 3/4" end of reel scraps at your local cable TV
> franchise (most for free - to cart away) -

3339. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 13:30:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3e3347_7@corp.newsgroups.com>
Source record: 110483

Dr. Slick wrote:
> How would you explain what Cecil wrote? How are some people
> improving SWR by changing coax length, when in theory they shouldn't
> be able to do this?

If I were using a 450 ohm SWR meter on 450 ohm Z0 feedline, the SWR meter would indicate no change in SWR as I change the feedline length. Assuming the 450 ohm SWR meter is accurate, the indicated SWR and the actual SWR are the same.

When I use a 50 ohm SWR meter on 450 ohm Z0 feedline, the SWR meter is NOT indicating the true SWR on the 450 ohm feedline. It is indicating what the SWR would be if the line were Z0=50 ohms. All it is indicating is the impedance seen by the transmitter which indeed does change with feedline length in a system with reflections.

Theoretically, the SWR on a feedline changes only slightly with changing feedline length and that is because of additional losses in the feedline as the length is increased.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3340. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 13:39:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3e3585_7@corp.newsgroups.com>
Source record: 110484

Dr. Slick wrote:

> From Pozar's Microwave Engineering (Pg. 606):
>
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>
> Where Zl is a purely real load impedance, and Zo is the
> purely real characteristic impedance reference.
>
> When you change Zo, you change the normalized center of the
> Smith Chart, and therefore the Reflection Coefficient and SWR, looking
> into the same load.

Correct! What Roy is objecting to is the wording of an assertion of
yours that seemed to imply that changing the reference Z0 on a piece
of Smith Chart paper magically changes the physical Z0 of the transmission
line to a different value. As you have advised me, be careful of what you
say and how you say it.

I referred to "free space" the other day. The image I had in my own
mind was the free space halfway between here and Alpha Centauri. Others
had the image of "free space" as 0.001 WL away from a radiating antenna.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3341. Re: new HAMRADIO software & info!!!!!!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 13:47:41 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhlcltnle1@hercules.btinternet.com>
Source record: 110485
Cross-posted to: alt.ham-radio.vhf-uhf,rec.radio.amateur.antenna,rec.radio.amateur.dx,rec.radio.amateur.equipment,rec.radio.amateur.space,uk.radio.amateur

Messrs Ohm, Ampere and Volta published there stuff a considerable time ago.
Isn't it time it was updated ?

3342. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 14:33:13 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhlfb9sig1@hercules.btinternet.com>
Source record: 110487

"Dr. Slick" wrote
> From Pozar's Microwave Engineering (Pg. 606):
>
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>
> Where Zl is a purely real load impedance, and Zo is the
> purely real characteristic impedance reference.

==========

Either Pozar (who I've never heard of) is not quite correct or Dr Slick has misquoted him or taken him out of context.

In fact, the equation is also true for complex values of Zl and Zo. The angle of RC can lie in any of the 4 quadrants. Furthermore, the magnitude of RC can exceed unity.

I offer no references in support of this statement. It is issued here entirely on my own responsibility.

Reg, G4FGQ

3343. Re: Best way to clean antenna mount?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 16:38:00 UTC
From: nedrog@aol.comNOSPAM
Message-ID: <20030816123800.22081.00000028@mb-m17.aol.com>
Source record: 110488

Try pure vinegar

3344. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 17:17:54 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <0kosjvgq5t5tirj1l5sm28qor2qjc804g9@4ax.com>
Source record: 110489

On 15 Aug 2003 10:54:26 -0700, kelly@dvol.com (Brian Kelly) wrote:

>Roger Halstead <newsgroups@rogerhalstead.com> wrote in message
news:<23tnjv8fqktm5bi3c09i03gg02jvvl1mcv@4ax.com>...
>> On 12 Aug 2003 09:08:08 -0700, kelly@dvol.com (Brian Kelly) wrote:
>>
>
<snip>
>
>> http://www.rogerhalstead.com/tower.htm
>
>Yumpin Yesus! Whatta "backyard" antenna farm!
>
Thanks...I think...<:-))

All put up by hand...Mine...with the aid of a friend pulling on the rope to the gin pole now and then. Took something like 2 to 2 1/2 years to finish. When I started I figured maybe a couple of months.

"One of these days" I plan on going up there and shooting a panorama and then stitching the photos together. I've done several partials, but I really need to fasten the camera to the mast and then turn the thing maybe 20 to 30 degrees for each shot.

I gotta take the mast out of the rotor, the rotor out of the tower, then unbolt the tribander, hook up a come along, loosen the thrust bearings and THEN let the mast down to the point where I can work on the 6 meter antenna . The boom support came loose and now just lays on top of the boom instead of holding it up. No problem for wind, but if we get any ice it'll be all done.

As long as I have that much to do, I will probably lower the whole works down to where I can replace the pig tails from four antenna systems. I don't know if I'm going to leave the vertically polarized 144 and 440 arrays up, or just replace them with a "repeater" duo band vertical and lower the top of the mast by 14 feet.

The only machine work was digging the holes for the guy anchors. It took me two days to dig the one for the tower base and I had lost all desire to dig three more about 2 1/2 times that size. The guy that dug the holes "with a back hoe" shown in the photos, had a pole he could fasten to the bucket on the front and he used that to carry the guy anchor posts and set them in place. It was well worth the price.

<snip>
>Ya take the vertical antenna & mast load out with a thrust bearing

>either in the top plate or somewhere close to the top, run some loosly
>guided 2-3" EMT down the tower and . . . does a great job of knocking
>down the torsional start/braking/wind spikes throughout the system AND
>reduces the number of climbs. A second thrust brg just above the
>rotator is even better. I dunno where they come from.

This is pretty much the way mine is set up, except I use both 1 1/2
and 2 inch steel tube with 1/4 inch wall. Thrust bearing at the top
of the tower and one just above the rotor which is about 25 feet or so
down in the tower.

I didn't want to run the steel tubing all the way to the ground as
with this antenna load it would get pretty "springy".

The ROHN 3" thrust bearings are "about" $80 to $85 each. Maybe more
now. You can get them from quite a few distributors. Mine came from
Texas Towers. The tower itself was a closeout from Michigan Radio
down in MtClements MI.

Another "one of these days" I'd like to replace the steel tubing with
1/4 inch wall chrome molly. Tis expensive, but I'm not going to be
able to keep climbing forever. (although I'd kinda like to think so)

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S/N CD-2)

>
>
>> Roger Halstead (K8RI EN73 & ARRL Life Member)
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>> N833R World's oldest Debonair? (S/N CD-2)
>
>w3rv

3345. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 17:39:01 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <t7qsjv8n3uql0oaevsvo6vh47tplvl7keq@4ax.com>
Source record: 110490

On Thu, 14 Aug 2003 21:13:49 -0700, W7TI <noway@nohow.com> wrote:

>Has anyone ever made their own hardline? I'm thinking 1/2 inch copper
>water pipe with a center conductor supported by some plastic discs
>spaced every so often. You might not get it exactly to 50 ohms but I'd
>think the loss would be so low it wouldn't really matter.

Wellll....

The stuff isn't that difficult to make.
Making it correctly is something else.

OTOH, with half inch I think you will find the loss is not as low as
you have been thinking.

With half inch connectors are fairly simple to make.
Splices are also relatively easy to make if you have a lathe.
The commercial stuff uses gasketed brass rings with at least 4 screws
through the flanges to hole the sections together. The center
conductor can be joined using a threaded fitting, or just soldered
with the outer conductor slid back.

BUT as to the practicality of using hard line...
You need the proper spacing for the spacers
Breakdown voltage is less than for coax cable the same size with foam
or solid dielectric.
Copper oxide will become a problem unless the feed line is "purged"
with dry Nitrogen.

Typically the coax is *almost* air tight. It is purged with a very
low flow and pressure of dry Nitrogen. IF the flow increases and or
the pressure drops you know three is a problem.

Don't purge it and it *will* develop problems sooner or later. If you
live in a hot dry climate this might not be much of a problem.

IF you make your own, it will probably still cost twice as much as
good coax.

IF you are looking at saving money, or coming up with a good "low
loss" cable try (as others have already suggested) the 75 ohm TV hard
line. It's usually free, works great, you can easily find 1/2 inch
and 3/4 inch. I understand 1 inch is also available.

It's relatively easy to make connectors for the 1/2 inch and 3/4 inch.
I'd think the same approach used for the 3/4 inch would work for the 1
inch.

The only drawbacks are the difficulty of making short radius turns, care in handling it, and the 1/2 inch is relatively fragile. The 3/4 inch and up is pretty rugged but still requires care in making bends or it will easily "kink" which pretty much renders that piece useless.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>
>Comments?

3346. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 19:50:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3e8c5e$1_6@corp.newsgroups.com>
Source record: 110491

Richard Clark wrote:
> Do you have a question about it following that point in time?

I wrote a little BASIC program to digest your data and it decided
that all your data is perfectly consistent with a constant SWR on
a Z0=~40 ohm coax between the 50 ohm SWR meter and the 16.67 ohm
load. What is the Z0 of your "RG-58 type hardline"?
--
73, Cecil http://www.qsl.net/w5dxp

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3347. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 21:05:32 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhm6as$e98$1@hercules.btinternet.com>
Source record: 110492

> I wrote a little BASIC program.
==========

The value of a computer program resides not in the source code language but solely in the Reliability of the programmer.

And Reliability is a measure of Quality versus time.

And Quality is the extent to which a product conforms to pre-specified requirements.

3348. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 21:35:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <558tjv8r80rc6hol2r5lren4t7idumotku@4ax.com>
Source record: 110493

On Sat, 16 Aug 2003 14:50:29 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Do you have a question about it following that point in time?
>
>I wrote a little BASIC program to digest your data and it decided
>that all your data is perfectly consistent with a constant SWR on
>a Z0=~40 ohm coax between the 50 ohm SWR meter and the 16.67 ohm
>load. What is the Z0 of your "RG-58 type hardline"?

Hi Cecil,

50 Ohm. The BVT has been calibrated long before this application (8
years ago the first time) without surprises. Methods are described in
Walt's Book, Reflections. I suggest you use his software rather than
roll your own. I would also suggest you consider his methods as well.
Point in fact, I followed his advice to measure at odd 8th wave
intervals if I recall his instructions correctly. If not, it was "by
the book." I also performed the calibrations at the remaining
cardinal points. Tedious perhaps, but having done it through maybe
three or four times without outliers, I don't expect there is any need
to visit that again.

73's
Richard Clark, KB7QHC

3349. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 22:25:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3eb0a6_2@corp.newsgroups.com>
Source record: 110494

Richard Clark wrote:
> Methods are described in
> Walt's Book, Reflections. I suggest you use his software rather than
> roll your own.

I don't recall Walt ever writing any statistical analysis software.
All my program does is take your raw data and try to make sense of
it using statistical analysis methods. It would be a near-perfect
SWR spiral on a 40 ohm Smith Chart. Seems that might be a clue.
--
73, Cecil http://www.qsl.net/w5dxp

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3350. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 22:33:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3eb2aa_8@corp.newsgroups.com>
Source record: 110495

Richard Clark wrote:
> I suggest you use his software rather than roll your own.

Funny that you request responses, nay, demand responses, and then dismiss them out of hand. The data indicates an impedance incompatibility between the transmission line and the measuring instrument. Your results are perfectly compatible with an SWR spiral on a 40 ohm Smith Chart including the loss in the feedline.
--
73, Cecil http://www.qsl.net/w5dxp

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3351. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 22:45:27 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <aR7sLdAHQrPEAL@ifwtech.co.uk>
Source record: 110496

Reg Edwards wrote:
>> I wrote a little BASIC program.
>================================
>
>The value of a computer program resides not in the source code language but
>solely in the Reliability of the programmer.
>
>And Reliability is a measure of Quality versus time.
>
>And Quality is the extent to which a product conforms to pre-specified
>requirements.

As demonstrated by reference to what external standards? I wouldn't walk
too far out along that plank, Reg...

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3352. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-16 23:35:46 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <mdz%a.161131$uu5.24788@sccrnsc04>
Source record: 110497

An additional source of VSWR error exists. It is of interest to the purist.

If I provide a perfect 50.000 ohm dummy load for typical JAN-C-17 RG type cable, example RG-9913, I have to design for a maximum VSWR of 1.06 to 1 due to tolerances in the cable!! So, I'll have a minor variation in observed VSWR as a function of length.

Same applies to the design impedance of your VSWR meter. It has a tolerance on it's 50 ohms!!!!!

Deacon Dave, W1MCE

W5DXP wrote:

> Dr. Slick wrote:
>
>> How would you explain what Cecil wrote? How are some people
>> improving SWR by changing coax length, when in theory they shouldn't
>> be able to do this?
>
>
> If I were using a 450 ohm SWR meter on 450 ohm Z0 feedline, the SWR
> meter would indicate no change in SWR as I change the feedline length.
> Assuming the 450 ohm SWR meter is accurate, the indicated SWR and the
> actual SWR are the same.
>
> When I use a 50 ohm SWR meter on 450 ohm Z0 feedline, the SWR meter
> is NOT indicating the true SWR on the 450 ohm feedline. It is indicating
> what the SWR would be if the line were Z0=50 ohms. All it is indicating
> is the impedance seen by the transmitter which indeed does change with
> feedline length in a system with reflections.
>
> Theoretically, the SWR on a feedline changes only slightly with changing
> feedline length and that is because of additional losses in the feedline
> as the length is increased.

3353. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 00:07:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n5ftjv0e73e4nte17k38i37ljvu0iluekb@4ax.com>
Source record: 110498

On Sat, 16 Aug 2003 17:25:17 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Methods are described in
>> Walt's Book, Reflections. I suggest you use his software rather than
>> roll your own.
>
>I don't recall Walt ever writing any statistical analysis software.
>All my program does is take your raw data and try to make sense of
>it using statistical analysis methods. It would be a near-perfect
>SWR spiral on a 40 ohm Smith Chart. Seems that might be a clue.

Hi Cecil,

What does your software report for calibrating a software 40 Ohm line
feeding a software 50 Ohm load?

What does your software report for calibrating a software 50 Ohm line
feeding a software 50 Ohm load?

73's
Richard Clark, KB7QHC

3354. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 00:14:56 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Db6dndQjYoKfVKOiXTWJjQ@comcast.com>
Source record: 110499

Cecil,

Suppose I do the following experiment: a source of unknown impedance, connected to a shorted 1/4 wave line through a ~50 Ohm series resistor. When looking at the voltage on the two ends of the resistor with a 'scope, I expect them to be the same value, with no phase difference. Do you think that would be enough to satisfy the nay sayers that the source is delivering no power? I am *not* talking about you.

In retrospect, my posting here is probably a variation of what Roy posted a few months ago. Didn't mean to rip him off. BTW, I was in error when I said the line charges up in 1/2 cycle; that would be true only if the source impedance was 0.

Tam/WB2TT
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f3d96f2$1_6@corp.newsgroups.com...
> Tarmo Tammaru wrote:
> > I think the only alternative in un nice; namely that there is no
reflection
> > in steady state
>
> There are an infinite number of possibilities between the rails of 100%
> re-reflection and zero re-reflection. I suspect a PA obeys the rules of
> the wave reflection model set forth in Ramo & Whinnery.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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3355. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 00:27:26 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <rXydnR7hdv0IUaOiXTWJiw@ctc.net>
Source record: 110501

> ----------
>
> I'm coming to that same conclusion.
>
> Ok, since what I'm really after is low loss (not necessarily shielding)
> how about this:
>
> TX >> 4:1 BALUN >> OPEN WIRE LINE >> 1:4 BALUN >> YAGI
>
> Do you think the loss in the baluns would outweigh the reduced loss in
> the open wire line? I'm looking at doing this on six meters where I
> have a fairly long run of coax - about 120 feet. Surely someone has
> tried this before.
>
> Comments welcome.
>
> --
> 73, Bill W7TI

At 6 meters you will not notice any improvement and maybe even some loss .
Just use some good low loss 1/2 inch size coax. It is difficult to make
low loss open wire work above about 30 mhz.

3356. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 00:30:13 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vjtj47aa8t5j7d@corp.supernews.com>
Source record: 110500

I remember one case where making coax was done and was appropriate. It
was a line that was several inches in diameter and probably no more than
20 meters long. The purpose that it served was to "feed" an end-fire
array of loop receiving antennas (along the line's length). The reason
to use the line was to have a VF that was as close to 0.99 as possible
so as to phase the distributed elements as optimally as possible.
Attenuation and power had nothing to do with the issue.
The result was a unidirectional pattern. One in each direction
depending on which end one connected to. Three of these fellows (and
six connections) made a reasonable direction finder with an
instantaneous beam every 60 degrees.
Life is much too short for one to use anything other than Heliax (or
TV cable) for the "normal" radio uses.
73 Mac N8TT
P.S. The fellows who replicated the Luxemburg effect with extremely
high power were said to have made their transmission lines out of
irrigation pipe. They must have had much more time than money.

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message > <snip>

> Except for those special-purpose applications, it really isn't worth
the
> trouble. It's easier to turn detective and find surplus sources of
> hardline such as 50-ohm Heliax (used at cellular sites world-wide) or
> the 75-ohm hardline used in the USA for cable TV.
>
>
> --
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
> http://www.ifwtech.co.uk/g3sek

3357. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 01:11:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3ed7ad_6@corp.newsgroups.com>
Source record: 110502

W7TI wrote:
> TX >> 4:1 BALUN >> OPEN WIRE LINE >> 1:4 BALUN >> YAGI

Why don't you make the open-wire line an even number of half-wavelengths?
Then all you need is a 1:1 choke at the transmitter. No loss in the
baluns at all because there aren't any.
--
73, Cecil http://www.qsl.net/w5dxp

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3358. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 01:24:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3eda9f_6@corp.newsgroups.com>
Source record: 110503

Richard Clark wrote:
> What does your software report for calibrating a software 40 Ohm line
> feeding a software 50 Ohm load?

It doesn't report that. It is a data reduction, curve fitting program.

> What does your software report for calibrating a software 50 Ohm line
> feeding a software 50 Ohm load?

It doesn't report that. It is a data reduction, curve fitting program.
The only input to the program is your data.

Consider that with your 16.67 ohm load, the impedance 1/2WL away from
the load should repeat. But the minimum reflected power point indicates
a load of about 25 ohms. So there's one error already, perhaps caused
by the diode. If you plot your data as SWR points on a 50 ohm Smith
Chart, it is obvious that the SWR circle (spiral) is compressed at the
lowest reflected power readings. It is also obvious that the center
of the SWR circle is not the center of the 50 ohm Smith Chart. That's
a pretty clear indication that everything is not 50 ohms. If full scale
on the Bird is 5 watts, the readings can be off by 0.25 watts. 0.45
watts plus or minus 0.25 watts is not very accurate.
--
73, Cecil http://www.qsl.net/w5dxp

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3359. Re: Effective area question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 01:31:04 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vjtmmaniojoa1a@corp.supernews.com>
Source record: 110504

Outstanding way of wording the case!
One more W7EL pearl to pass on.
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net
Office: JCM@McLMcL.Com
"Roy Lewallen" <w7el@eznec.com> wrote in message >
<snip>

> That's another real bummer about physics, and one of the major ways it
> differs from, say, philosophy. Thinking about it a different way just
> doesn't change it a bit. That's a lesson a lot of the magic-antenna
> inventors don't seem to pick up on.
>

3360. Re: re Coice of ATU

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 01:49:32 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <6jntjv4onpheeskgmlsmfrggob9bhd71ls@4ax.com>
Source record: 110486

On Sat, 16 Aug 2003 02:18:36 +0100, "Savage" <look@this.con> wrote:

>

>
>Do people really pay ï¿½200 sterling (US$300) for a wire antenna? I've just
>seen the price of the Carolina Windom Short 80 Special

I notice at the Ten-Tec web site they're now selling a "broadband
terminated V-beam wire antenna" for $250 U.S. "Throw away your antenna
tuner!" the ad copy sez...

Bob
k5qwg

>

3361. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 02:16:04 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bnmtjvkc51c7csuso19ipoupkdbtjp32au@4ax.com>
Source record: 110505

On Sat, 16 Aug 2003 20:24:21 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> What does your software report for calibrating a software 40 Ohm line
>> feeding a software 50 Ohm load?
>
>It doesn't report that. It is a data reduction, curve fitting program.
>
>> What does your software report for calibrating a software 50 Ohm line
>> feeding a software 50 Ohm load?
>
>It doesn't report that. It is a data reduction, curve fitting program.
>The only input to the program is your data.

Hi Cecil,

I now understand that you are using regression analysis and not
engineering computation code similar to that Walt has published.

What does your software report for a software 40 Ohm line feeding a
software 50 Ohm load? That is, when all data points (that is each
increment of 1 foot) exhibits 0 Watts returned for 5W applied?

What does your software report for a software 50 Ohm line feeding a
software 50 Ohm load? That is, when all data points (that is each
increment of 1 foot) exhibits 0 Watts returned for 5W applied?

Feel free to cast in your suggested 5% FS error to force the worst
case scenario for the calibrations.

73's
Richard Clark, KB7QHC

3362. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 03:10:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3ef391_3@corp.newsgroups.com>
Source record: 110506

Richard Clark wrote:
> What does your software report for a software 40 Ohm line feeding a
> software 50 Ohm load? That is, when all data points (that is each
> increment of 1 foot) exhibits 0 Watts returned for 5W applied?

My software takes a list of reflected powers, assumes the forward
power is five watts, calculates the 50 ohm SWR for each point, and
plots them every 0.03WL on a Smith Chart. It was written to accept
your data points. If the reflected power above was always zero watts,
all those points would be the same point, i.e. a circle of zero radius
at the center of the Smith Chart.

Take time to plot those 50 ohm SWR points on a Smith Chart with the
0.45 watts reflected point assumed to be the lowest purely resistive
point. A picture is worth a thousand words. I have seen that picture
before. It was when I designed my SWR meter for a Z0 of 450 ohms and
my window-line turned out to have a Z0 of 388 ohms.
--
73, Cecil http://www.qsl.net/w5dxp

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3363. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 04:43:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <lmttjvsuhe33726l7qp8atgk732o9q8bdk@4ax.com>
Source record: 110507

On Sat, 16 Aug 2003 22:10:46 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> What does your software report for a software 40 Ohm line feeding a
>> software 50 Ohm load? That is, when all data points (that is each
>> increment of 1 foot) exhibits 0 Watts returned for 5W applied?
>
>My software takes a list of reflected powers, assumes the forward
>power is five watts, calculates the 50 ohm SWR for each point, and
>plots them every 0.03WL on a Smith Chart. It was written to accept
>your data points. If the reflected power above was always zero watts,
>all those points would be the same point, i.e. a circle of zero radius
>at the center of the Smith Chart.
>
>Take time to plot those 50 ohm SWR points on a Smith Chart with the
>0.45 watts reflected point assumed to be the lowest purely resistive
>point. A picture is worth a thousand words. I have seen that picture
>before. It was when I designed my SWR meter for a Z0 of 450 ohms and
>my window-line turned out to have a Z0 of 388 ohms.

Hi Cecil,

Thank you. I see that for the 50 Ohm load that the line exhibits a
characteristic of 50 Ohms as described by its concentricity about the
reference.

This confirms the indication of 0W returned for all settings when
applied to 4 different 50 Ohm loads. One load is calibrated and
exhibits an S1 of 1.0061 (this is from a set of data points every 5Mhz
to 1 GHz). The other loads are of equal caliber.

This confirms the vendor MicroCoax specification for UT-141-A:
50 ï¿½1 Ohm
OD 0.141 +0.002/-0.001 (0.142 measured)
ID 0.1175 +/-0.001 (0.1175 measured)
Conductor OD 0.0359 +0.0010/-0.0004 (0.035 measured)
Dielectric PTFE

This is no surprise given the cable is premium short run (length, not
reels) material specified out to 20 GHz (from Boeing's precision
electronics facilities). I have several hundred feet brand new.

73's
Richard Clark, KB7QHC

3364. Re: Jpole tuning?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 06:48:46 UTC
From: Richard <rlwest@nethere.com>
Message-ID: <3F3F254E.A605D1B@nethere.com>
Source record: 110508

Your idea will work just fine. The J-pole is a wide-band antenna and the only adjustments needed is the coax tap point (or gamma adjustment if you're using that type of match) but as long as your swr is reasonable, leave it alone.
Richard, KF6KE

FrankW wrote:

> Hello All
> Considering using a Jpole antenna for 2 meters
> I plan to mount it on top of a 40 ft tower
> I've read that it should be tuned where it will
> permantently reside, The area is in a big field on a hill
> Can I just mount it on the top 10ft section, tune then
> put it on the tower?
> Any hints and tricks regarding tuning a jpole would
> be great!
> Thanks in advance
> Regards

3365. Re: Tower Raising fixture ideas ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 07:24:20 UTC
From: Zoran Brlecic <...WA7AA...@get.lost>
Message-ID: <3F3F2D9C.8000907@get.lost>
Source record: 110509

Roger Halstead wrote:

> All put up by hand...

Roger, what is the point in using a concrete form? I never understood why it would be beneficial to purposely weaken the tower foundation just to have a perfectly square concrete block that no one can see in the ground.

73 .... WA7AA

--

Anti-spam measure: look me up on qrz.com if you need to reply directly

3366. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 09:35:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjuj3pjm4ftn57@corp.supernews.com>
Source record: 110510

There's nothing wrong with the formula or the context. It follows from a straightforward derivation that begins with the ratio of reflected to forward waves at the load, and results in satisfying the boundary conditions and Kerchoff's voltage and current laws at the load. It holds for any complex values of Zl and Z0. The resulting reflection coefficient is of course complex, but it's often confused with its magnitude or with the time domain reflection coefficient. Increasing this confusion is that there's no standard notation for these terms, so the complex value in one text might be denoted by the same character as the magnitude in another text.

There's no problem with the reflection coefficient having any angle in any of the four quadrants. However, I've frankly had trouble getting around the notion of the magnitude of the reflection coefficient being greater than one with a passive load. I know it sometimes happens with active loads, and there are even Smith chart techniques to deal with it. You'll find discussions of it in texts on microwave circuit design.

It looks like it's possible to get a reflection coefficient with magnitude > 1 any time Rl*R0 < -X*X0. Reg recently posted some values of Z0 for common coaxial cables that show the angle of Z0 approaching -45 degrees at low frequency. So it wouldn't be hard to envision a cable with Z0 = 100 - j100 or thereabouts at some very low frequency. If we were to terminate it with a pure inductor with 100 ohms reactance (Zl = 0 + j100), it looks like the reflection coefficient would be -1 + j2, which has a magnitude of the square root of three, or about 1.73. What does this mean? It means that the reflected wave has a greater magnitude than the incident wave. I'm not sure there's anything wrong with this -- it's sort of like a resonant effect. It would have to be checked to make sure that the law of conservation of energy isn't violated, and that Kirchoff's laws are satisfied, but I'd be surprised if there were any violations. The calculated SWR is negative, but that's pretty meaningless considering we have a line with a huge amount of attenuation per wavelength (in order to have such a highly reactive Z0). With that kind of attenuation there's no danger of having an oscillator with no power source.

I'd really like to hear from some of the folks who deal more frequently with reflection coefficient than I do, to see if I'm on the right track, or if there is some consideration that requires modification of the equation for very lossy lines. I've got quite a few references that deal with reflection coefficient. They all give the same formula without qualifications, but none mentions the possibility of the magnitude becoming greater than one.

Reg, you've got more experience with very lossy lines (in terms of loss
per wavelength, which is what counts here) than anyone else on this
group. What happens at the load if you terminate a 100 - j100 ohm Z0
line with 0 + j100 ohms?

Roy Lewallen, W7EL

Reg Edwards wrote:
> "Dr. Slick" wrote
>
>>From Pozar's Microwave Engineering (Pg. 606):
>>
>> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>>
>> Where Zl is a purely real load impedance, and Zo is the
>>purely real characteristic impedance reference.
>
>
> ================================
>
> Either Pozar (who I've never heard of) is not quite correct or Dr Slick has
> misquoted him or taken him out of context.
>
> In fact, the equation is also true for complex values of Zl and Zo. The
> angle of RC can lie in any of the 4 quadrants. Furthermore, the magnitude of
> RC can exceed unity.
>
> I offer no references in support of this statement. It is issued here
> entirely on my own responsibility.
> ----
> Reg, G4FGQ
>
>

3367. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 11:55:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3f6ea2_5@corp.newsgroups.com>
Source record: 110511

Tarmo Tammaru wrote:
> Suppose I do the following experiment: a source of unknown impedance,
> connected to a shorted 1/4 wave line through a ~50 Ohm series resistor. When
> looking at the voltage on the two ends of the resistor with a 'scope, I
> expect them to be the same value, with no phase difference. Do you think
> that would be enough to satisfy the nay sayers that the source is delivering
> no power? I am *not* talking about you.

How about looking at the voltage across the resistor? i.e. the difference
between the voltages at each end of the resistor?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3368. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 12:25:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3f75a4$1_5@corp.newsgroups.com>
Source record: 110512

Richard Clark wrote:
> Thank you. I see that for the 50 Ohm load that the line exhibits a
> characteristic of 50 Ohms as described by its concentricity about the
> reference.
>
> This is no surprise given the cable is premium short run (length, not
> reels) material specified out to 20 GHz (from Boeing's precision
> electronics facilities). I have several hundred feet brand new.

Please plot your data on a Smith Chart. Since your data is
obviously nonlinear, I would suggest diagnosing the nonlinearity
problem before concluding anything. For instance, what is the
one tenth scale RF RMS voltage before it is rectified by the
diode?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3369. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 13:42:10 UTC
From: tad danley <nospam@atsbcglobal.net>
Message-ID: <3F3F8632.7060500@atsbcglobal.net>
Source record: 110513

Roy Lewallen wrote:
>
> An excellent and easy to follow description of the method of moments can
> be found in Kraus' _Antennas_, Second Ed. I assume it's in the third
> edition also, but it's not in the first. The NEC-2 manual recommends
> R.F. Harrington, _Field Computation by Moment Methods_ (McMillan, 1968)
> but I haven't seen this book.

I'm looking for a text to help me increase my understanding of antennas
beyond what is contained in the ARRL Antenna Handbook. It looks like
"Antennas" by Kraus is it. Can anyone recommend any others?

Thanks and 73,

--
* Do NOT use Reply *
Reply only through ARRL forwarding service to K3TD

Tad, K3TD

3370. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 13:56:11 UTC
From: tad danley <nospam@atsbcglobal.net>
Message-ID: <3F3F897B.3040102@atsbcglobal.net>
Source record: 110514

Roy Lewallen wrote:

>
> I've tried to point out on this thread that although the feedpoint
> impedance is an impedance with the units of ohms, and the impedance of a
> plane wave in free space also has the units of ohms, they're not the
> same thing.

This may not be a good analogy, but Specific Impulse of rocket motors
helps me to remember that the 'units' of something have to be considered
in the context of what is being measured. Specific impulse is a measure
of the performance of a rocket motor. It measures the thrust obtained
from a single kilogram of propellant burned in one second. The 'units'
of Specific Impulse are seconds, but we're not measuring 'time'.

73,

--
* Do NOT use Reply *
Reply only through ARRL forwarding service to K3TD

Tad, K3TD

3371. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 14:28:07 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3f9252$1_4@corp.newsgroups.com>
Source record: 110515

tad danley wrote:
> I'm looking for a text to help me increase my understanding of antennas
> beyond what is contained in the ARRL Antenna Handbook. It looks like
> "Antennas" by Kraus is it. Can anyone recommend any others?

_Antenna_Engineering_Handbook_, edited by Jasik, contributions by many.

_Antenna_Theory_Analysis_and_Design_, by Balanis
--
73, Cecil http://www.qsl.net/w5dxp

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3372. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 14:32:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3f9358$1_4@corp.newsgroups.com>
Source record: 110516

W7TI wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>Why don't you make the open-wire line an even number of half-wavelengths?
>>Then all you need is a 1:1 choke at the transmitter. No loss in the
>>baluns at all because there aren't any.
>
> I'll give it a try. Thanks.

The spacing of 450 ohm window-line might be better for 6m than the
3"-6" spacing of open-wire line.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3373. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 16:41:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1aavjvkreetev4loscct6mqgjd2f33or64@4ax.com>
Source record: 110517

On Sun, 17 Aug 2003 07:25:45 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Thank you. I see that for the 50 Ohm load that the line exhibits a
>> characteristic of 50 Ohms as described by its concentricity about the
>> reference.
>>
>> This is no surprise given the cable is premium short run (length, not
>> reels) material specified out to 20 GHz (from Boeing's precision
>> electronics facilities). I have several hundred feet brand new.
>
>Please plot your data on a Smith Chart. Since your data is
>obviously nonlinear, I would suggest diagnosing the nonlinearity
>problem before concluding anything. For instance, what is the
>one tenth scale RF RMS voltage before it is rectified by the
>diode?

Hi Cecil,

That is the whole point of Mismatch Uncertainty. What you call
nonlinearity is the NBS documented conclusion of the mismatched
conditions at both ends.

Feel free to investigate and enquire further about your concern over
nonlinearity.

73's
Richard Clark, KB7QHC

3374. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 16:58:26 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308170858.5a96447b@posting.google.com>
Source record: 110518

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjrn3b1e71gb89@corp.supernews.com>...
> > > Absolutely incorrect. Time for you to review your Smith Chart
> > > again.
> >
> > Here's an experiment for you to try.
> >
> > On your workbench, measure the characteristic impedance of a cable, or
> > connect it to a source or load and measure the SWR on it. Now go over to
> > your desk, take out your grease pencil, and change the reference
> > impedance of your Smith chart. Go back to the bench, check the SWR and
> > the cable Z0. Has it changed?
> >

Do you often change the impedances of your equipment by scribbling
on a pad of paper? Maybe you can tell us how you do this.

> > If *you'll* review the Smith chart again, you'll find that *if* you set
> > the reference impedance to the Z0 of the transmission line you're
> > analyzing, then the SWR, impedances, and so forth that your read from
> > the Smith chart are correct. If you set the reference impedance to some
> > other value, an SWR read from the chart certainly isn't the SWR on the
> > transmission line.
> >

PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
load
1 2 3

Once again, if you placed an SWR meter of the same output
impedance of the PA at point 1, you will measure the SWR at point 1,
and it would be akin to re-normalizing the Smith. Change the PAs S22
(and the impedance of the SWR meter, and you will definitely change
the SWR at point 1. Do you agree with this?

I've already agreed with you that the SWR at point 3 won't change
in theory, as it is surrounded by 50 ohms. What is it about this
simple concept that you cannot seem to understand?

> > Thank you, although I'm not an expert at using the Smith chart, I know
> > my way around the circle.

It's obvious you don't. Time to read up on it, Roy.

>
> I am always interested in learning. I don't use a Smith chart a great
> deal,

Obviously.

Slick

3375. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:04:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308170904.1846870b@posting.google.com>
Source record: 110419

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjrnt7fm9o25da@corp.supernews.com>...
> Among the posters on this topic, I'd be willing to bet a substantial sum
> that at least Tom, Ian, Cecil, Bill, and I can recite that formula from
> memory.

It's clear that you needed to be informed of how this relates to
re-normalizing the Smith Chart, which is what you are doing be
changing the reference impedance. Get the free program MIMP, and you
can investigate this yourself.

Investigate more, Roy.

In addition, there are a number of other regular and occasional
> newsgroup posters in this category who've been wise enough to not having
> posted on this thread, and some who have posted whom I don't know well
> enough to put my money on. I'd be willing to further bet that Ian,
> Cecil, Bill, and I could have done so at any time for at least the last
> 20 years. I omit Tom from this second list only because I haven't yet
> met him in person and otherwise haven't gotten any hints of his age --
> but I'll take a gamble and spot him 10 years at least. Furthermore, we
> all know how to use it, and have done so countless times in the process
> of designing systems that work.
>

I agree this is a very obvious and standard equation, which
applies to the re-normalizing the Smith. But you obviously don't
understand how changes in the Zo will change the SWR going into the
same load, which can be simulated on MIMP by changing the value of the
center of the Smith (called re-normalizing).

Since when was 50 Ohms ALWAYS a 1:1 SWR?

Slick

3376. FA: DIAMOND SX 1000 SWR WATT POWER METER *** Ends Today!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:11:53 UTC
From: Ivory Kid <ivorykid@yahoo.com>
Message-ID: <qHO%a.2186$QT5.1299@fed1read02>
Source record: 110420
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.swap

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=1502&item=3040395386

Ends Today!

3377. FA: MALDOL MH-610 TRI-BAND HT ANTENNA F6A *** Ends Today!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:11:55 UTC
From: Ivory Kid <ivorykid@yahoo.com>
Message-ID: <tHO%a.2188$QT5.631@fed1read02>
Source record: 110421
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.swap

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4672&item=3040395907

Ends Today!

3378. FA: ANLI RD-88H ANTENNA SCANNER HAM DUAL BAND *** Ends Today!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:11:58 UTC
From: Ivory Kid <ivorykid@yahoo.com>
Message-ID: <vHO%a.2190$QT5.1154@fed1read02>
Source record: 110422
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.swap

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=4672&item=3040396254

Ends Today!

3379. FA: SCANNER HEADPHONES - PROFESSIONAL STYLE! *** Ends Today!!!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:11:59 UTC
From: Ivory Kid <ivorykid@yahoo.com>
Message-ID: <wHO%a.2192$QT5.85@fed1read02>
Source record: 110423
Cross-posted to: rec.radio.amateur,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.swap

http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=296&item=3040396837

Ends Today

3380. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:14:21 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <e4cvjvokjjera0evdvvv8a59ugha8bht1d@4ax.com>
Source record: 110424

On Sun, 17 Aug 2003 13:56:11 GMT, tad danley <nospam@atsbcglobal.net>
wrote:

>Roy Lewallen wrote:
>
>>
>> I've tried to point out on this thread that although the feedpoint
>> impedance is an impedance with the units of ohms, and the impedance of a
>> plane wave in free space also has the units of ohms, they're not the
>> same thing.
>
>
>This may not be a good analogy, but Specific Impulse of rocket motors
>helps me to remember that the 'units' of something have to be considered
>in the context of what is being measured. Specific impulse is a measure
>of the performance of a rocket motor. It measures the thrust obtained
>from a single kilogram of propellant burned in one second. The 'units'
>of Specific Impulse are seconds, but we're not measuring 'time'.
>
>73,

Hi Tad,

Your point is well taken. ALL physical phenomenon can be expressed
through a chain of conversions in the MKS system of units. When
someone tells you that their terminology is inconsistent between
disciplines (as such offered in this and other threads); it must then
be amenable to reduction to MKS terms or one of the two conflicting
expressions is invalid.

That is to say to the specific matter about the usage of "ohms:"
Here, the unit of ohm must be reduced to Meters, Kilograms, and
Seconds for both usages (electrical and radiative). At that point,
both will have a common basis for comparison and if in fact their
reduced terms are identical, then their common usage is also
identical.

One simple example is with the measurement of body weight on the
bathroom scale (a torsion or compression device) as opposed to the
weight measured on the doctor's scale (a beam balance). Let's say
before you go to the doctor's, you weigh yourself in around 165
pounds. When you arrive at the doctor's, his scale says you weigh
around 75 kilograms.

Let's remove this same scenario to the moon (you live in one of those
futuristic 1990's colonies forecast by the space race back in the

60's). Before you went to the doctor's you weighed in around 33 pounds. When you arrive at the doctor's, his scale says you weigh around 75 kilograms.

Here we find the expression "pounds" suffers what appears to be the same plight of "ohms" in that the determination of a value is inconsistent. You may also note constants of proportionality on earth and the moon. These constants when expressed as a ratio also describe the significant differences between the earth and the moon.

The problem is that the term "weight" has a hidden association to the constant of Gravity. The expression Gram is one of Mass, not weight. The expression pound is not an expression of Mass unless you expand it to include the term for the particular constant of Gravity. Mass is constant in the Newtonian Universe, and weight is not.

If you were to have reduced the pounds to the MKS system both times, you would have found it consistent both times (here on earth, and on the moon).

If you reduce the "ohms" to the MKS system both times.... Well I will leave that for further deliberation as some are sure to be surprised. :-)

73's
Richard Clark, KB7QHC

3381. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:15:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308170915.2cd67203@posting.google.com>
Source record: 110425

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjuj3pjm4ftn57@corp.supernews.com>...
>
> There's no problem with the reflection coefficient having any angle in
> any of the four quadrants. However, I've frankly had trouble getting
> around the notion of the magnitude of the reflection coefficient being
> greater than one with a passive load. I know it sometimes happens with
> active loads, and there are even Smith chart techniques to deal with it.
> You'll find discussions of it in texts on microwave circuit design.
>

[s11]**2 + [s21]**2 = 1

For a lossless passive two port network, where the brackets
indicate magnitude only.

If you find a passive network that reflects more voltage than it
receives, let us all know about your free energy device.

>
> I'd really like to hear from some of the folks who deal more frequently
> with reflection coefficient than I do, to see if I'm on the right track,
> or if there is some consideration that requires modification of the
> equation for very lossy lines. I've got quite a few references that deal
> with reflection coefficient. They all give the same formula without
> qualifications, but none mentions the possibility of the magnitude
> becoming greater than one.
>

Reflection coefficients greater than unity, which go outside the
Smith, only happen with active devices, as you have mentioned above.
Stability circles are a related topic, as their centers are often
based outside the unity RC circle.

Slick

3382. Re: Make your own hardline?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:32:52 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnbjvf24.jli.bit-bucket@localhost.config.com>
Source record: 110426

On Sat, 16 Aug 2003 16:20:06 -0700, W7TI hath writ:
>
> Ok, since what I'm really after is low loss (not necessarily shielding)
> how about this:
>
> TX >> 4:1 BALUN >> OPEN WIRE LINE >> 1:4 BALUN >> YAGI
>
> Do you think the loss in the baluns would outweigh the reduced loss in
> the open wire line? I'm looking at doing this on six meters where I
> have a fairly long run of coax - about 120 feet. Surely someone has
> tried this before.

How about CATV hardline? I'm using about 70 feet of the stuff for
6M and 2M. I'm using the 1/2" stuff for 6M and the 3/4" for 2M.
It should be FREE -- the Most Important cable characteristic. HI!HI!
No reason why you couldn't use the 3/4" stuuf on 6M -- tho', I think
it might be overkill.
As another posted mentioned (for open wire), you can cut it for
n-multiple 1/2 wavelengths, and use the Flexible Stuff for pigtails
at each end.

http://jonz.net/W3DHJ/catvhardline.html

HTH
Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

3383. Re: Cheap, Light-duty, Freestanding, Antenna Tower??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 17:42:03 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vjvfiugdq38604@corp.supernews.com>
Source record: 110427
Cross-posted to: rec.radio.scanner,rec.radio.amateur.antenna

Please see comments below.
--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Brian Kelly" <kelly@dvol.com> wrote in message
<snip>
>
> That's nonsense. If you want a properly-designed pipe mast you do it
> by the numbers, not with amateur "eyeball structural engineering"
> and/or broad-brush statements like "have to use some fairly thick
> steel pipe . . ". You won't know a thing about any pipe sizes until
> and unless you run the numbers. A 40 foot pipe mast analysis is as
> simple as it gets in the field of applied mechanics, any sophomore
> student in any engineering discipline including the EEs who brought
> you your HT can handle the job. A pipe mast is just a classic
> cantilever beam.
>

I agree with the essence of Brian's observation. However, I offer two additional observations:
1. The engineering understanding of tall columns using steel has gone through quite an evolution in my lifetime. Buckling of a vertical cantilever beam (A.K.A. a column) is a different issue from the breaking of an actual cantilever beam. Need to study the latest steel handbook and the tower standard and use an appropriate safety factor that is larger than 1. [Yes, the latter is a snide remark. People do sell stuff with specifications that are accurate for a safety factor of one!]
2 The engineering understanding of the effects of wind has also undergone quite an evolution. See the tower standard (222F, I think is the last one published). Any simple relationship between "miles per hour" and pressure is almost certain to be inappropriate. [Do not believe most antenna manufacturer's survival ratings in terms of MPH.]

However, for the heights being discussed, the "roughness" of a typical urban neighborhood will significantly reduce wind loading from what one would expect using weather wind info. That fact provides an additional safety factor that just does not exist where I have placed antennas and towers.

I give a big Amen to Brian's observation that even EEs should be able to run the numbers AND a big Amen to the need to run the numbers. This is an area where one wants to check twice - or more.
73 Mac N8TT

3384. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 18:03:37 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhog1p$au2$1@hercules.btinternet.com>
Source record: 110428

Dr Slick says -
> If you find a passive network that reflects more voltage than it
> receives, let us all know about your free energy device.

I havn't been following the discussion very closely.

But does your statement imply a reflection coefficient with a magnitude greater than unity cannot exist when only a passive transmission network is involved ?

Reg, G4FGQ

3385. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 18:06:07 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308171006.206650eb@posting.google.com>
Source record: 110429

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjqj74qh5qvc8d@corp.supernews.com>...
>
> I've tried to point out on this thread that although the feedpoint
> impedance is an impedance with the units of ohms, and the impedance of a
> plane wave in free space also has the units of ohms, they're not the
> same thing. Feedpoint impedance is the ratio of a current to a voltage.
> Wave impedance, or the intrinsic impedance of a medium, is the ratio of
> an E field to an H field -- it's also the square root of the ratio of
> the medium's permeability to its permittivity. An antenna converts
> currents and voltages to E and H fields, it doesn't just transform one
> impedance to another. Hence my insistence on calling an antenna a
> transducer rather than a transformer.
>

I've agreed with you on the semantics of antennas as transducers,
but two transducers DO make a transformer.

Ohms are still always Ohms, regardless of what you are measuring.
And it's very interesting that the E and H fields have units of
Volts/meter and Ampere(turn)/meter, which when you divide one by the
other, you get basically Volts/ampere, just like you would in a
transmission line.

But I don't claim that a wave traveling in a transmission line is
the same as a wave traveling through free space.

Slick

3386. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 18:51:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2dfvjvg3ul63pdieskdq0ih55iul77d3ho@4ax.com>
Source record: 110430

On Sat, 16 Aug 2003 09:38:18 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:

>On Sat, 16 Aug 2003 07:07:16 GMT, "George, W5YR" <w5yr@att.net>
>wrote:
>
>>Richard,
>>
>>It always astounds me how the technically challenged are wont to launch ad
>>hominem attacks instantly
>
>Do you accept that yours similarly deflates your credentials? It
>would at least place us on equal footing - in the gutter I suppose,
>but I brought my snorkel. ;-)
>
>>
>>73/72, George
>
>Hi George,
>
>If you suffer the heat of taking a stand, so much for a test of faith.
>I have not seen you respond to the chain of evidence I have supplied
>to these matters. I will offer that this body of work long preceded
>my missive. You might or might not find that work
>interesting/correct/or worthy of your attention, but that does not
>erase if from the archive nor detract its intrinsic merit in desired
>measure to bruised ego.
>
>Pick any ONE of your cherished notions that I so soiled and put it up
>for a clear and concise examination.
>
> OR
>
>Let me head that off with a very simple question that most dodge; and
>in fact lies at the very heart of your subject line:
>Given the premise that the amateur's rig output Z is NOT 50 Ohms, what
>value does it have (cite any assembly of conditions)?
>
>You will no doubt get many thumps on the back from well-wishers who
>spit in my direction. How many will offer a numeric response to that
>technical enquiry? I can forecast that will stand at the current
>exchange rate of 0. I will also forecast there will be either total
>silence, or scattered muttering about why they wouldn't engage such a
>scurvy fellow as me. And yet the absence of that number from the

>discussion under this subject line mocks the charter of this group
>more than my humor did you.
>
>Is it lower than 50? Higher than 50? How much? The stunned silence
>in response to such simple, forced speculation is more a result of
>intellectual catatonia than moral indignation.
>
>Those who have offered numbers (I count among them), who have revealed
>methods of their derivation (I count among them), who performed actual
>bench work (I count among them), who offer rationale as to the
>subject's correlation to other observables (I count among them) is
>notable in contrast to those who have nothing to show but the shallow
>rhetoric of impotent denial.
>
>73's
>Richard Clark, KB7QHC

Hi All,

I note by the absence of response that at least my mystical powers of clairvoyance are unparalleled. No one dare step up to the bar to answer the question:

"What is the Z of a transmitter, if it is not 50 Ohms?"

For those who would rather argue the mystic ability than answer the question, I will allow that this same absence may be due in part to the Blaster virus and the power black out. Now that I've braced up your crutches, let's proceed with a telling example of both the academic principle and the practical implication.

I will simply choose a value for you. In other words, we will venture where these angels fear to tread. We will start with a deliberately mismatch transmitter, and a deliberately mismatched load. We will then throw in the practical necessity of line loss and ask the question that is my acid test for the wide-eyed inventors:

"Does it make more than 1dB difference?"

The scenario begins:

"A 50-Ohm line is terminated with a load of 200+j0 ohms.
The normal attenuation of the line is 2.00 decibels.
What is the loss of the line?"

Having stated no more, the implication is that the source is matched to the line (source Z = 50+j0 Ohms). This is a half step towards the full blown implementation such that those who are comfortable to this point (and is in fact common experience) will observe their answer and this answer are:

"A = 1.27 + 2.00 = 3.27dB"

"This is the dissipation or heat loss...."

we then proceed:

"...the generator impedance is 100+0j ohms, and the line is 5.35 wavelengths long."

"A = 1.27 + 2.00 + 1.62 = 4.9 decibels"

Thus the answer to my question is:

Yes. 1.62dB is greater than 1dB.

Now, as to the application of this knowledge to the typical user. It becomes: "does my standard of 1dB meet the thresh hold of your caring?" Perhaps not and even 3 dB may be of no concern. For such folk I offer my best wishes and we each proceed happily on in life. [This, of course, presumes they do not in fact have a rig that exhibits a 600 Ohm output Z and hence the danger of nay saying the obvious without expressing a value to replace it.]

Now, as to the application of this knowledge to the critical user. By this I mean those here who want to have a complete answer, and being thus informed can make their own choices. Is there anyone corresponding here that want to dispute that this is the charter of this group?

I have then twice shown how a transmission line being bound by two reflecting planes introduces a Mismatch Uncertainty. This example has enlarged on that slightly through my advice that this uncertainty can be reduced to zero through the description of all paths. As I have also pointed out in the past, this is a simple truism of wave interference math - very simple.

The fact of the matter is that nearly every correspondent to this forum employs a transmitter designed to and exhibiting 50 Ohms source Z. The simple fact of the matter is that none of those same correspondents will typically encounter that additional 1.67dB because of this. Those who choose to operate their transmitter outside of this specification may; but those same operators rarely, if ever, examine the evidence of Mismatch Uncertainty because they never move their load nor their SWR meter (the path never changes). They instead will observe a reading in their complacency and accept the error without being aware (unless they have read this, that is).

I will add that even when operating outside of the characteristic source Z, that is not significantly off enough to match the issue portrayed above unless you cut power dramatically - and even then the issue is moot even though the loss is not.

So, part and parcel to the subject header above and having shown how ignorance and rejection of the obvious has a concomitant loss; the question, as always, remains:

>Given the premise that the amateur's rig output Z is NOT 50 Ohms, what
>value does it have (cite any assembly of conditions)?

What constitutes the silence from this point on? My proven clairvoyant skill being elevated by the day, the Blaster virus, the power outage, or that same intellectual catatonia?

73's
Richard Clark, KB7QHC

3387. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 18:57:16 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjvk0eq6012l63@corp.supernews.com>
Source record: 110431

Dr. Slick wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vjrn3b1e71gb89@corp.supernews.com>...

> . . .

>>If *you'll* review the Smith chart again, you'll find that *if* you set
>>the reference impedance to the Z0 of the transmission line you're
>>analyzing, then the SWR, impedances, and so forth that your read from
>>the Smith chart are correct. If you set the reference impedance to some
>>other value, an SWR read from the chart certainly isn't the SWR on the
>>transmission line.
>>
>
>
>
> PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
> load
> 1 2 3
>
>
>
> Once again, if you placed an SWR meter of the same output
> impedance of the PA at point 1, you will measure the SWR at point 1,
> and it would be akin to re-normalizing the Smith. Change the PAs S22
> (and the impedance of the SWR meter, and you will definitely change
> the SWR at point 1. Do you agree with this?

Absolutely not. The SWR meter will measure the SWR at point 1 only if
it's the same impedance as the *line*. If the PA has a different
impedance than the line, and the SWR meter has the same impedance as the
PA, it will not be reading the SWR on the line.

If you want to use a Smith chart to see what the SWR is on the line, you
must normalize it to the impedance of the line. Change the PA impedance
all you want. Change the Smith chart normalization all you want. Neither
will have any affect on the SWR on the line. Changing the meter
impedance won't have any effect on the SWR on the line, either, although
it'll change the reading on the meter so that it's no longer indicating
the SWR on the line.
>
> I've already agreed with you that the SWR at point 3 won't change
> in theory, as it is surrounded by 50 ohms. What is it about this
> simple concept that you cannot seem to understand?

?

>>Thank you, although I'm not an expert at using the Smith chart, I know
>>my way around the circle.
>
>
>
> It's obvious you don't. Time to read up on it, Roy.
>
>
>
>>I am always interested in learning. I don't use a Smith chart a great
>>deal,
>
>
>
> Obviously.

I see you're reduced to insults now. Time for me to really leave this thread. I'll leave you with your conception of how things work, hoping only that the other readers aren't left with them also.

Roy Lewallen, W7EL

3388. APRSPoint clearance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:02:34 UTC
From: hxc98@yahoo.com
Message-ID: <aa8577c5.0308171102.1005b4e3@posting.google.com>
Source record: 110432

Clearance sale on the most intuitive APRS software with detailed street map support for both US and Canada. Get $50 off the regular price on APRSPoint plus MapPoint pkg. Get reduced price on APRSPoint license key as well. Please visit http://www.aprspoint.com/ for details. Thanks.

3389. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:14:32 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <JzMIzQRYQ9P$EAen@ifwtech.co.uk>
Source record: 110452

Dr. Slick wrote:
>
>PA----+----50 ohm line----+SWR meter+----50 ohm line----+50 ohm dummy
>load
> 1 2 3
>
>
>
> Once again, if you placed an SWR meter of the same output impedance
>of the PA at point 1, you will measure the SWR at point 1, and it would
>be akin to re-normalizing the Smith. Change the PAs S22 (and the
>impedance of the SWR meter, and you will definitely change the SWR at
>point 1. Do you agree with this?
>
What exactly do you think you mean by "change the SWR at point 1"? All you have done is to replace one SWR meter by a second one that has been calibrated for a different system reference impedance.

You had to *choose* a value for the new reference impedance in order to pre-calibrate that second meter. When you re-normalize the Smith chart, you choose the *same* new value. So of course the SWR reading on the second meter is going to be the same as you'd calculate by re-normalizing the SWR1 circle on the Smith chart from Z1 to Z2.

If that's all you ever meant, we've spent a week homing-in on something that is totally obvious.

The only other problem with your example is that by mentioning the PA's S22 value, you seem to imply that it is relevant. It isn't, because variations in the source impedance will not change the SWR reading on either meter. Only the load impedance can change the SWR.

Now take away all the coax and move the 50-ohm load to the outputs of the respective SWR meters. The indicated values of SWR1 and SWR2 will be exactly the same as before.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3390. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:16:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3fd5fb_2@corp.newsgroups.com>
Source record: 110433

Richard Clark wrote:
> That is the whole point of Mismatch Uncertainty. What you call
> nonlinearity is the NBS documented conclusion of the mismatched
> conditions at both ends.

I suspect many of the irregularities would be greatly diminished
if you ran the experiment at 50 watts forward instead of 5.
--
73, Cecil http://www.qsl.net/w5dxp

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3391. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:23:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3fd7a5_2@corp.newsgroups.com>
Source record: 110434

Reg Edwards wrote:
> But does your statement imply a reflection coefficient with a magnitude
> greater than unity cannot exist when only a passive transmission network is
> involved ?

The transmission coefficient can certainly be greater than unity,
being (2*Z2)/(Z1+Z2).
--
73, Cecil http://www.qsl.net/w5dxp

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3392. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:41:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3fdbe2$1_2@corp.newsgroups.com>
Source record: 110435

Richard Clark wrote:

> Richard Clark <kb7qhc@comcast.net> wrote:
>>Given the premise that the amateur's rig output Z is NOT 50 Ohms, what
>>value does it have (cite any assembly of conditions)?
>
> What constitutes the silence from this point on?

Nobody knows and nobody cares. All voltage to current ratios are determined by the system outside of the transmitter. The only thing a transmitter need furnish is a voltage (or current or power). No matter what the output Z of a transmitter, it can put out a voltage (or current or power). What happens inside a transmitter doesn't affect anything except transmitter efficiency.

Any coherent energy re-reflected inside the transmitter simply superposes with the forward wave and becomes indistinguishable from the generated power. If modulation is added and the feedline is long enough, the re-reflection could be detected. With an unmatched TV generator and about 1000 ft of open-wire line, the TV ghosts would give an indication of how much reflected power is actually re-reflected inside the generator. For those who assert there are no reflections from a generator, this would be an easy experiment to run.
--
73, Cecil http://www.qsl.net/w5dxp

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3393. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:48:34 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308171148.368ccdc5@posting.google.com>
Source record: 110436

Yuri,
I think you would better understand what is happening
if you view the inductance in question as half of
a transformer, where the other half is the aether.
This allows you to bring in the formular NxI one side =
NxI the otherside. This way you can see that I is constant.
If it wasn't a constant then the lines of flux would have a
very distorted shape at one end of the inductance.
The fact that transformers have impedances that are not
totally resistive is because of other factors than Inductance.
If I am incorrect with this analogy I would apreciate any
corrections as I am sure Yuri would to
Art

jk3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030812072327.18087.00001318@mb-m15.aol.com>...
> Question to Roy,
> can EZNEC model loading coils in loaded antennas, like mobile whips including
> the physical properties of the coil?
> I just had some exchange with W8JI on eHam.net
> http://www.eham.net/articles/5998
> where he is ignoring the fact that loading coil is part of the radiator and its
> physical properties, where length to diameter ratio have impact on the current
> distribution in the coil.
> He is claiming that modeling programs confirm his statement that the current is
> the same at the both ends of the loading coil (close in short coils) . I am
> having hard time to see how the modeling program is capturing physical
> properties of the coil besides inductance, Q etc.
> W9UCW has done considerable amount of work on the subject and has measured that
> the current diminishes in the loading coil away from the feedpoint.
>
> Thanks!
>
> Yuri, K3BU

3394. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:52:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5lmvjv49rcrm2932oola5pgo84u2e130gu@4ax.com>
Source record: 110437

On Sun, 17 Aug 2003 14:16:47 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> That is the whole point of Mismatch Uncertainty. What you call
>> nonlinearity is the NBS documented conclusion of the mismatched
>> conditions at both ends.
>
>I suspect many of the irregularities would be greatly diminished
>if you ran the experiment at 50 watts forward instead of 5.

Hi Cecil,

Feel free to attempt it. You are one of the more qualified to do this
by having a variable transmission line like mine.

As a more approachable test, not involving line variation, but simply
knowing its length, and one that includes your expectation of line
loss consider the correspondence of my responses to George, W5YR, in
the thread "Internal Resistance (?)."

73's
Richard Clark, KB7QHC

3395. FS 72' crank up tilt over motorized US Tower (self supporting) with rotator, ready to go!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 19:54:14 UTC
From: bbraun@starband.net
Message-ID: <31c9c6ae.0308171154.57eb2ae5@posting.google.com>
Source record: 110438

FS 72' crank up tilt over motorized US Tower (self supporting) with
rotator, ready to go!

I have a US Tower TX 472MDP 72' self supporting crank up (motorized)
tilt over tower ready to go.

4 x IV-16 Coax arms
TB 20 s Thrust bearing
TRX80 Raising structure
MD75 Motor
MCL 100 Control switch
MD10 Mast
Mounting Plate

The tower is on the ground in excellent condition and needs only the
anchor bolts and
concrete base.

collapsed size is about 22 feet.
weight is around 1500 lbs

I am in Lynchburg VA

Loss of work forces me to sell this beauty.

I will also throw in the H IVCD-45 Higain Control box and heavy duty
rotator (now mounted on the tower)
and full sized telerex multi-band Beam

If interested,
give me a call and make an offer

Bruce Braun
w6sfg www.brauns.net
434-239-3752

3396. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:00:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ofnvjv8rvpoa3344rcouu7hn7qpkia7n0q@4ax.com>
Source record: 110439

On Sun, 17 Aug 2003 14:41:58 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>> What constitutes the silence from this point on?
>
>Nobody knows and nobody cares.

Hi Cecil,

Then I count you in that group who finds the additional 1.62dB loss as
inconsequential. I also note you have no answer to the question, but
in that regard I wish you well, and we are both content.

73's
Richard Clark, KB7QHC

3397. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:01:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3fe085$1_2@corp.newsgroups.com>
Source record: 110440

Richard Clark wrote:
> Feel free to attempt it. You are one of the more qualified to do this
> by having a variable transmission line like mine.

Unfortunately, my variable transmission line is Z0 = 388 ohms and I
wouldn't trust my homemade 388 ohm SWR meter for wattmeter accuracy.
The lengths of my T-line sections are also not super accurate.

Let me get straight what you are saying. As I understand it, you are
saying that if you chop off one foot of coax at a time when driving
a fixed amount of forward power into a 3:1 mismatched load, the SWR
will change from, e.g. 3.8:1 to 1.9:1. Is that correct?
--
73, Cecil http://www.qsl.net/w5dxp

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3398. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:06:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f3fe18f$1_2@corp.newsgroups.com>
Source record: 110441

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>What constitutes the silence from this point on?
>>
>>Nobody knows and nobody cares.

> Then I count you in that group who finds the additional 1.62dB loss as
> inconsequential. I also note you have no answer to the question, but
> in that regard I wish you well, and we are both content.

I think everyone appreciates the fact that if he/she destroys the efficiency
of his/her transmitter by whatever means, then that is not inconsequential.
But that's not really what the discussion is about, is it? SWR doesn't depend
upon the efficiency of the transmitter, does it?
--
73, Cecil http://www.qsl.net/w5dxp

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3399. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:09:40 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vjvocb5caigi97@corp.supernews.com>
Source record: 110442

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:ofnvjv8rvpoa3344rcouu7hn7qpkia7n0q@4ax.com...
> On Sun, 17 Aug 2003 14:41:58 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> wrote:
>
> >> What constitutes the silence from this point on?
> > >
> > >Nobody knows and nobody cares.
> >
> > Hi Cecil,
> >
> > Then I count you in that group who finds the additional 1.62dB loss as
> > inconsequential. I also note you have no answer to the question, but
> > in that regard I wish you well, and we are both content.
> >
> > 73's
> > Richard Clark, KB7QHC

Hi Richard
Since Cecil's reference to "nobody" implicitly includes me, I beg to be
removed from that group.

How to measure source impedance.
Connect an adjustable load directly to the source, forget the transmission
line.
When the load gets hottest for the least power into the source, their
impedances are matched.
73
H.
NQ5H

-------1.62 db here, 1.62 db there-------;^)

3400. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:12:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vjvocg8ntr4p98@corp.supernews.com>
Source record: 110443

There are a couple of problems with the analogy. First, of course, is that there is no secondary winding to convert the primary's magnetic field to the current I you reference. The "aether" has no N and no I, and doesn't do this. The second problem is that a simple transformer model, or any other lumped-element circuit model, is valid only if its dimensions are very small compared to a wavelength(*). A mobile whip loading coil is often long enough that a current gradient can occur from one end to another, so a single lumped element model might be inadequate.

Roy Lewallen, W7EL

(*) A particular problem with the mobile loading coil in an electrically small whip is that the current changes a great deal over even a very short distance, as it goes from zero at the end of the whip (assuming no top loading) to a large value at the base. It sounds like sort of a circular argument, but a lumped element model loses accuracy any time there can be a current gradient across the component. Interestingly, the problem becomes less and less severe as top loading is increased, because it reduces the current gradient along the whip. You *could* quite accurately model a loading coil as a single lumped element if you had enough top loading.

Art Unwin KB9MZ wrote:
> Yuri,
> I think you would better understand what is happening
> if you view the inductance in question as half of
> a transformer, where the other half is the aether.
> This allows you to bring in the formular NxI one side =
> NxI the otherside. This way you can see that I is constant.
> If it wasn't a constant then the lines of flux would have a
> very distorted shape at one end of the inductance.
> The fact that transformers have impedances that are not
> totally resistive is because of other factors than Inductance.
> If I am incorrect with this analogy I would apreciate any
> corrections as I am sure Yuri would to
> Art

3401. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:27:31 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vjvp8rough0pe9@corp.supernews.com>
Source record: 110444

tad danley wrote:
> Roy Lewallen wrote:
>
>>
>> An excellent and easy to follow description of the method of moments
>> can be found in Kraus' _Antennas_, Second Ed. I assume it's in the
>> third edition also, but it's not in the first. The NEC-2 manual
>> recommends R.F. Harrington, _Field Computation by Moment Methods_
>> (McMillan, 1968) but I haven't seen this book.
>
>
>
> I'm looking for a text to help me increase my understanding of antennas
> beyond what is contained in the ARRL Antenna Handbook. It looks like
> "Antennas" by Kraus is it. Can anyone recommend any others?
>
> Thanks and 73,
>

Kraus is not only an antenna expert, he is a
world-class authority on the entire field of
Electromagnetics, based on Maxwell's equations.
His mathematics is elegant.

Bill W0IYH

3402. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:34:53 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <obpvjvg5l1uahku3neja7f1fvth5bidb9h@4ax.com>
Source record: 110445

On Sun, 17 Aug 2003 15:09:40 -0500, "H. Adam Stevens"
<solo@totalaccess.net> wrote:

>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:ofnvjv8rvpoa3344rcouu7hn7qpkia7n0q@4ax.com...
>> On Sun, 17 Aug 2003 14:41:58 -0500, W5DXP <Cecil.A.Moore@ieee.org>
>> wrote:
>>
>> >> What constitutes the silence from this point on?
>> >
>> >Nobody knows and nobody cares.
>>
>> Hi Cecil,
>>
>> Then I count you in that group who finds the additional 1.62dB loss as
>> inconsequential. I also note you have no answer to the question, but
>> in that regard I wish you well, and we are both content.
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Hi Richard
>Since Cecil's reference to "nobody" implicitly includes me, I beg to be
>removed from that group.
>
>How to measure source impedance.
>Connect an adjustable load directly to the source, forget the transmission
>line.
>When the load gets hottest for the least power into the source, their
>impedances are matched.
>73
>H.
>NQ5H
>
>-------1.62 db here, 1.62 db there-------;^)
>

Hi OM,

You are stricken from that group then. Your conscription is ended and
we still all remain content by universal acclamation. ;-)

Myself I can tolerate up to 10dB without care so 1.62dB is hardly as
monumental as the vivid reactions to this news would evoke. I only
test claims to the level of 1dB to be generous. I would note that

most claims fail to achieve even that value.

73's
Richard Clark, KB7QHC

3403. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 20:39:18 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vjvq3u9hqb34a@corp.supernews.com>
Source record: 110446

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:obpvjvg5l1uahku3neja7f1fvth5bidb9h@4ax.com...
> On Sun, 17 Aug 2003 15:09:40 -0500, "H. Adam Stevens"
> <solo@totalaccess.net> wrote:
>
> >"Richard Clark" <kb7qhc@comcast.net> wrote in message
> >news:ofnvjv8rvpoa3344rcouu7hn7qpkia7n0q@4ax.com...
> >> On Sun, 17 Aug 2003 14:41:58 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> >> wrote:
> >>
> >> >> What constitutes the silence from this point on?
> >> >
> >> >Nobody knows and nobody cares.
> >>
> >> Hi Cecil,
> >>
> >> Then I count you in that group who finds the additional 1.62dB loss as
> >> inconsequential. I also note you have no answer to the question, but
> >> in that regard I wish you well, and we are both content.
> >>
> >> 73's
> >> Richard Clark, KB7QHC
> >
> >Hi Richard
> >Since Cecil's reference to "nobody" implicitly includes me, I beg to be
> >removed from that group.
> >
> >How to measure source impedance.
> >Connect an adjustable load directly to the source, forget the
transmission
> >line.
> >When the load gets hottest for the least power into the source, their
> >impedances are matched.
> >73
> >H.
> >NQ5H
> >
> >-------1.62 db here, 1.62 db there-------;^)
> >
>
> Hi OM,
>
> You are stricken from that group then. Your conscription is ended and
> we still all remain content by universal acclamation. ;-)

>
> Myself I can tolerate up to 10dB without care so 1.62dB is hardly as
> monumental as the vivid reactions to this news would evoke. I only
> test claims to the level of 1dB to be generous. I would note that
> most claims fail to achieve even that value.
>
> 73's
> Richard Clark, KB7QHC

Ahh, OM
But once over 10 db, adding a linear won't fix it.
;^)
Besides, it can be pleasurable to optimize things.
73
H.
NQ5H

3404. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 21:14:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <lrpvjvg2fch5at6vcq5l8hnpat86f81r5m@4ax.com>
Source record: 110447

On Sun, 17 Aug 2003 15:01:44 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Feel free to attempt it. You are one of the more qualified to do this
>> by having a variable transmission line like mine.
>
>Unfortunately, my variable transmission line is Z0 = 388 ohms and I
>wouldn't trust my homemade 388 ohm SWR meter for wattmeter accuracy.
>The lengths of my T-line sections are also not super accurate.
>
>Let me get straight what you are saying. As I understand it, you are
>saying that if you chop off one foot of coax at a time when driving
>a fixed amount of forward power into a 3:1 mismatched load, the SWR
>will change from, e.g. 3.8:1 to 1.9:1. Is that correct?

Hi Cecil,

Your trepidation about the accuracy is well taken, but perhaps overstated for a first pass approximation. I will leave you to judge that, but I would point out, that if you can conspire to load both ends to mismatch as I have described (or worse), you should see the same symptoms. That your lines do not fall on cardinal points; I have faith in that your craftsmanship is of high enough caliber that it won't make any difference if you can replicate the same wavelength interval (which means you will probably need to work this out above 20 MHz). Error is not inescapable, but your regression analysis should reveal the same trend.

If you in fact do not know the characteristic source Z of your transmitter, then forcing a known value imparts a basic maximum. In other words, what ever unknown value in parallel with a known value could never exceed that known value. A simple 50 Ohm load at the transmitter output guarantees that the source could never exhibit any higher value. This feeding your 388 Ohm line is by far and away more severe than any of the reports or tests I have offered. With the far end terminated in another 50 Ohm load, then you should see extremely wide variation. Your regression analysis should reveal the same pattern as you found with my data (what you call nonlinearity). You may then compare your regressions' chi-squares.

Or simply measure the line loss in your standard configuration and compare it to the severely mismatched arrangement I describe above (both ends terminated in 50 Ohm loads).

Accuracy demands a lot of front work, but a first pass test such as I describe should present a quick resolution to whether or not you want to commit beyond to engage in that labor. The worst of this is how much you can (or your transmitter can) tolerate working into these deliberate mismatches.

73's
Richard Clark, KB7QHC

3405. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 21:20:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <cUedncoFQNYEbKKiXTWJkg@comcast.com>
Source record: 110448

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f3f6ea2_5@corp.newsgroups.com...
> How about looking at the voltage across the resistor? i.e. the difference
> between the voltages at each end of the resistor?
> --
> 73, Cecil http://www.qsl.net/w5dxp
That is what I mean, By looking at both ends at the same time with a dual
trace scope. I guess I could also go A - B. I have the stuff to do it with.
About 60 feet of 9913 that I can short the far end on, a dual trace 100 MHz
scope, and MFJ analizer as a signal source. The latter is also usefol for
finding exact 1/4 wavelength frequency, as I can't measure the coax length.
(Goes through several walls).

Tam/WB2TT

3406. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 21:31:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <sgsvjv8vmf0mgo6s65pp0nor53s7d1ulbf@4ax.com>
Source record: 110449

On Sun, 17 Aug 2003 17:20:21 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>
>"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
>news:3f3f6ea2_5@corp.newsgroups.com...
>> How about looking at the voltage across the resistor? i.e. the difference
>> between the voltages at each end of the resistor?
>> --
>> 73, Cecil http://www.qsl.net/w5dxp
> That is what I mean, By looking at both ends at the same time with a dual
>trace scope. I guess I could also go A - B. I have the stuff to do it with.
>About 60 feet of 9913 that I can short the far end on, a dual trace 100 MHz
>scope, and MFJ analizer as a signal source. The latter is also usefol for
>finding exact 1/4 wavelength frequency, as I can't measure the coax length.
>(Goes through several walls).
>
>Tam/WB2TT
>

Hi Tam,

A dual trace scope is not the same as a dual channel scope. You need
the latter. It needs to have a two channel "add" (which is seriously
derated from the usual spec.s). It also needs to exhibit a high CMRR
at the frequency you plan to test at. It also needs to exhibit a high
Common Mode ability (the CMRR may be sufficient, but you can also
drive the front end into saturation if the mode potential is too
high). You also need to show great care to grounding that scope such
that it does not inject even more Common Mode. This then implies that
you need to know what the Common Mode potentials are and you return to
the issue of ground once again, given this cable runs through several
walls.

Far less time would be involved in simply taking a handheld meter with
an RF probe. Connect it, and then remove yourself (physically, that
is do not actually hold the meter) as a source of error.

73's
Richard Clark, KB7QHC

3407. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 21:32:13 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vjvt2dr1tolr3f@corp.supernews.com>
Source record: 110450

...and his writing is lucid. I read his first edition, a gift from my
Father, and knew where I wanted to go to grad school. He is also a very
fine person.
Buy and read his books.
73 Mac N8TT
--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:vjvp8rough0pe9@corp.supernews.com...
<snip>

> Kraus is not only an antenna expert, he is a
> world-class authority on the entire field of
> Electromagnetics, based on Maxwell's equations.
> His mathematics is elegant.
>
> Bill W0IYH
>

3408. Is this an Auction Site or a forum.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 21:58:42 UTC
From: Dick <boleyd@yahoo.com>
Message-ID: <mUS%a.12321$2Y6.3352480@news2.news.adelphia.net>
Source record: 110451

Why is such stuff allowed to clog the forum?? Given that there are about 7000 items on the eBay site every one who has something available there could conceivably also place a notice here. Does the moderator wait for such a nutty development or does that person take action now. This is getting out of control

Dick N3HKN

3409. Re: Is this an Auction Site or a forum.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 22:37:39 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <4+ZUgtTzOAQ$EAwH@ifwtech.co.uk>
Source record: 110453

Dick wrote:
>Why is such stuff allowed to clog the forum?? Given that there are about
>7000 items on the eBay site every one who has something available there
>could conceivably also place a notice here. Does the moderator wait for such
>a nutty development or does that person take action now. This is getting out
>of control

This is a Usenet newsgroup. Nobody owns it. Nobody moderates it. Anyone
can use it.

Learn to live with it: set up your newsreader to ignore all postings
with subjects beginning "FA" or "FS", and you won't be aware that "this
stuff" even exists.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3410. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 22:51:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f40084b_5@corp.newsgroups.com>
Source record: 110456

Richard Clark wrote:
> Accuracy demands a lot of front work, but a first pass test such as I
> describe should present a quick resolution to whether or not you want
> to commit beyond to engage in that labor. The worst of this is how
> much you can (or your transmitter can) tolerate working into these
> deliberate mismatches.

My SGC-500 is speced to work into a 50 ohm SWR of 6:1.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3411. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 22:52:19 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <dZOdnZX8BPy7mt2iXTWJhQ@comcast.com>
Source record: 110454

Richard,
The frequency is going to end up around 4 MHz, which is not too bad for ALT.
We will see what happens. I have a pair of 10X probes, which I can match. I
guess we both know I am going to end up measuring the loss of the coax

Tam/WB2TT

3412. Re: Is this an Auction Site or a forum.

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 22:55:01 UTC
From: Keyboard In The Wilderness <KITW@forest.com>
Message-ID: <aJT%a.4942$S_.3917@fed1read01>
Source record: 110455

The guidelines for this news group is at URL:
http://faqs.jmas.co.jp/FAQs/radio/personal-intro

It sez:
The groups r.r.amateur.antenna, .boatanchors, .dx, .equipment, .homebrew,
and .space are for more specialized areas of ham radio: discussions about
antennas, the older tube based amateur, military, and commercial gear,
commercially-made equipment, homebrewing, and amateur radio space
operations. The .equipment group is NOT the place for buying or selling
equipment; that's what rec.radio.swap is for.

But as far as I know -- this group is unmoderated.
Some Moderated news group can be found at yahoo, but folks complain about
"restricting freedom of Yaking"

So when it is free and the lawless have no fear -- you have the mess that we
have on the news groups.

IGNORE is the key word.

Still lots of good info here however.

Keep the faith.
==========

"Dick" <boleyd@yahoo.com> wrote in message
news:mUS%a.12321$2Y6.3352480@news2.news.adelphia.net...
> Why is such stuff allowed to clog the forum?? Given that there are about
> 7000 items on the eBay site every one who has something available there
> could conceivably also place a notice here. Does the moderator wait for
such
> a nutty development or does that person take action now. This is getting
out
> of control
>
>
>
> Dick N3HKN
>
>
>
>

3413. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 23:21:36 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <46U%a.103966$0v4.7262336@bgtnsc04-news.ops.worldnet.att.net>
Source record: 110457

Let me attempt to answer your questions:

1. I do not know the "Z of a transmitter." For that matter, I am not sure what that expression means, but I take it to mean the internal resistance of the output stage feeding power to the external load.

2. I seriously doubt that anyone knows . . . or cares.

3. There is no need to know, since its value, whatever it might be, plays no role in the design and implementation of the external portion of the system driven by the transmitter.

4. The "internal resistance of the output stage(s)" is not necessarily the required load resistance for the transmitter. The former may be unknown; the latter is a key parameter of the transmitter and supplying that required value is mandatory if the transmitter performance specs are to be obtained. The former doubtlessly has a value, although it may be time-varying and highly dependent upon other knowable and unknowable factors. The latter is a fixed value. I suspect that not even the amplifier designer knows or uses this internal resistance value. What he does know is what load resistance is required at the output terminals to obtain the specified performance of the amplifier.

Several people on this newsgroup keep trying to get this message across, to no avail. So, let me pose a question or two in response:

If you knew "the Z of a transmitter" (which I presume is your terminology for the "internal resistance of the output stage"), what would you do with that information? Where would you use it? What are you prevented from doing or knowing by not having that information?

Fair enough?

--
73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:2dfvjvg3ul63pdieskdq0ih55iul77d3ho@4ax.com...
> On Sat, 16 Aug 2003 09:38:18 GMT, Richard Clark <kb7qhc@comcast.net>
> wrote:
>
> >On Sat, 16 Aug 2003 07:07:16 GMT, "George, W5YR" <w5yr@att.net>
> >wrote:

> >
> >>Richard,
> >>
> >>It always astounds me how the technically challenged are wont to launch
ad
> >>hominem attacks instantly
> >
> >Do you accept that yours similarly deflates your credentials? It
> >would at least place us on equal footing - in the gutter I suppose,
> >but I brought my snorkel. ;-)
> >
> >>
> >>73/72, George
> >
> >Hi George,
> >
> >If you suffer the heat of taking a stand, so much for a test of faith.
> >I have not seen you respond to the chain of evidence I have supplied
> >to these matters. I will offer that this body of work long preceded
> >my missive. You might or might not find that work
> >interesting/correct/or worthy of your attention, but that does not
> >erase if from the archive nor detract its intrinsic merit in desired
> >measure to bruised ego.
> >
> >Pick any ONE of your cherished notions that I so soiled and put it up
> >for a clear and concise examination.
> >
> > OR
> >
> >Let me head that off with a very simple question that most dodge; and
> >in fact lies at the very heart of your subject line:
> >Given the premise that the amateur's rig output Z is NOT 50 Ohms, what
> >value does it have (cite any assembly of conditions)?
> >
> >You will no doubt get many thumps on the back from well-wishers who
> >spit in my direction. How many will offer a numeric response to that
> >technical enquiry? I can forecast that will stand at the current
> >exchange rate of 0. I will also forecast there will be either total
> >silence, or scattered muttering about why they wouldn't engage such a
> >scurvy fellow as me. And yet the absence of that number from the
> >discussion under this subject line mocks the charter of this group
> >more than my humor did you.
> >
> >Is it lower than 50? Higher than 50? How much? The stunned silence
> >in response to such simple, forced speculation is more a result of
> >intellectual catatonia than moral indignation.
> >
> >Those who have offered numbers (I count among them), who have revealed
> >methods of their derivation (I count among them), who performed actual
> >bench work (I count among them), who offer rationale as to the

> >subject's correlation to other observables (I count among them) is
> >notable in contrast to those who have nothing to show but the shallow
> >rhetoric of impotent denial.
> >
> >73's
> >Richard Clark, KB7QHC

3414. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 23:33:09 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <VgU%a.102840$3o3.7190262@bgtnsc05-news.ops.worldnet.att.net>
Source record: 110458

Roy, Chipman on page 138 of "Theory and Problems of Transmission Lines"
makes the statement

" The conclusion is somewhat surprising, though inescapable, that a
transmission line can be terminated with a reflection coefficient whose
magnitude is as great as 2.41 without there being any implication that the
power level of the reflected wave is greater than that of the incident wave.
Such a reflection coefficient can exist only on a line whose attention per
wavelength is high, so that even if the reflected wave is in some sense
large at the point of reflection, it remains so for only a small fraction of
a wavelength along the line away from that point . . . The large reflection
coefficients are obtained only when the reactance of the terminal load
impedance is of opposite sign to the reactance component of the
characteristic impedance."

Chipman makes these remarks after his derivation of the operation of lines
with complex characteristic impedance.

--
73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vjuj3pjm4ftn57@corp.supernews.com...
> There's nothing wrong with the formula or the context. It follows from a
> straightforward derivation that begins with the ratio of reflected to
> forward waves at the load, and results in satisfying the boundary
> conditions and Kerchoff's voltage and current laws at the load. It holds
> for any complex values of Zl and Z0. The resulting reflection
> coefficient is of course complex, but it's often confused with its
> magnitude or with the time domain reflection coefficient. Increasing
> this confusion is that there's no standard notation for these terms, so
> the complex value in one text might be denoted by the same character as
> the magnitude in another text.
>
> There's no problem with the reflection coefficient having any angle in
> any of the four quadrants. However, I've frankly had trouble getting
> around the notion of the magnitude of the reflection coefficient being
> greater than one with a passive load. I know it sometimes happens with
> active loads, and there are even Smith chart techniques to deal with it.
> You'll find discussions of it in texts on microwave circuit design.
>

> It looks like it's possible to get a reflection coefficient with
> magnitude > 1 any time Rl*R0 < -X*X0. Reg recently posted some values of
> Z0 for common coaxial cables that show the angle of Z0 approaching -45
> degrees at low frequency. So it wouldn't be hard to envision a cable
> with Z0 = 100 - j100 or thereabouts at some very low frequency. If we
> were to terminate it with a pure inductor with 100 ohms reactance (Zl =
> 0 + j100), it looks like the reflection coefficient would be -1 + j2,
> which has a magnitude of the square root of three, or about 1.73. What
> does this mean? It means that the reflected wave has a greater magnitude
> than the incident wave. I'm not sure there's anything wrong with this --
> it's sort of like a resonant effect. It would have to be checked to make
> sure that the law of conservation of energy isn't violated, and that
> Kirchoff's laws are satisfied, but I'd be surprised if there were any
> violations. The calculated SWR is negative, but that's pretty
> meaningless considering we have a line with a huge amount of attenuation
> per wavelength (in order to have such a highly reactive Z0). With that
> kind of attenuation there's no danger of having an oscillator with no
> power source.
>
> I'd really like to hear from some of the folks who deal more frequently
> with reflection coefficient than I do, to see if I'm on the right track,
> or if there is some consideration that requires modification of the
> equation for very lossy lines. I've got quite a few references that deal
> with reflection coefficient. They all give the same formula without
> qualifications, but none mentions the possibility of the magnitude
> becoming greater than one.
>
> Reg, you've got more experience with very lossy lines (in terms of loss
> per wavelength, which is what counts here) than anyone else on this
> group. What happens at the load if you terminate a 100 - j100 ohm Z0
> line with 0 + j100 ohms?
>
> Roy Lewallen, W7EL
>
> Reg Edwards wrote:
> > "Dr. Slick" wrote
> >
> >>From Pozar's Microwave Engineering (Pg. 606):
> >>
> >> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
> >>
> >> Where Zl is a purely real load impedance, and Zo is the
> >>purely real characteristic impedance reference.
> >
> >
> > ================================
> >
> > Either Pozar (who I've never heard of) is not quite correct or Dr Slick
has
> > misquoted him or taken him out of context.

> >
> > In fact, the equation is also true for complex values of Zl and Zo. The
> > angle of RC can lie in any of the 4 quadrants. Furthermore, the
magnitude of
> > RC can exceed unity.
> >
> > I offer no references in support of this statement. It is issued here
> > entirely on my own responsibility.
> > ----
> > Reg, G4FGQ
> >
> >
>

3415. Re: 30 meter add-on for HF2-V idea

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-17 23:34:15 UTC
From: t_ashland@yahoo.com
Message-ID: <6e6aeba9.0308171534.77376648@posting.google.com>
Source record: 110459

I finally got around to putting up a 30 meter quarter wave wire in
parallel to the HF2V instead of the 30 MRK kit. I ended up pruning
about 1 foot of wire to get it to about 1.5.1 across the band. I also
had to tweak 40 and 80, and have them where I wanted them. I had an
old HF6V vertical and stole some parts off it to make this 30 meter
add-on. The wire I used was flex weave with stand offs about 4 inches
from the vertical. Seems to work great!
In my junk box, I also found the old parts from the HF6V vertical. I
think I might have all the parts for the 30 MRK. Is there anyone out
there who can give me the diameter of the coil as well as turns and
the capacitance of the capacitor? I looked at Bencher's website, but
I think they make it a little vague to keep people from home-brewing
;-P
73,
Terry, WK0F

t_ashland@yahoo.com (Terry Ashland) wrote in message
news:<6e6aeba9.0307240926.20e62671@posting.google.com>...
> Thanks John. I think I will give it a try next week and post the
> results. I reckon I should space the 30 meter quarter wave wire at
> least 5 inches from the HF2V. I will probably get some sort of
> non-conductive stand off and clamp it to the aluminum tubing. I have
> a beam for the higher bands so I don't really need 20 meters.
>
> "John" <my-callsign@qsl.net> wrote in message
news:<9gDTa.524$c17.448226@newsfep1-win.server.ntli.net>...
> > I used to use a 40mtr quarter wave wire vertical and a 30 mtr quarter wave
> > wire vertical in parallel up a 10mtr fibre-glass pole and it worked fine,
> > though they were separated by about 5 inches. Coincidentally I now have a
> > HF2V with the 30m add-on kit but I'm sure you could run a parallel 30mtr
> > quarter wave instead of the add-on kit. The Butternut 20 mtr add-on kit for
> > the HF2V is a piece of wire, a quater wavelength long, fed in parallel with
> > the main antenna.
> >
> > John
> > G4IRN
> >
> >
> >
> > "Terry Ashland" <t_ashland@yahoo.com> wrote in message
> > news:6e6aeba9.0307221358.7aef741f@posting.google.com...
> > > I haven't tried it, but I thought why wouldn't a 23' foot piece of
> > > wire parallel to the HF2-V fed at the base work for 30 meters? I
> > > realize you might have to retune 40 and 80, but it sure would beat

> > > buying the 30 meter add on kit. Any thoughts would be appreciated.
> > > Anyone try any other 30 meter solutions with this vertical?
> > > 73,
> > >
> > > Terry, WK0F

3416. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 01:16:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk0a7tdu7ata9a@corp.supernews.com>
Source record: 110460

Thanks very much for that additional information about the consequences of the magnitude of the reflection coefficient exceeding one. I couldn't find it in any of the electromagnetics or transmission line books on my shelf, which at last count include about 13 texts. Chipman, alas, isn't among them. It confirms what I suspected, and provides further evidence that the posted equation is universally correct.

While I'm mentioning books, I picked up a couple at Powell's Technical Bookstore yesterday evening that look like real winners. They're _Engineering Electromagnetics_ by Nathan Ida (2000), and _Electromagnetic Fields, Energy, and Waves_ by Leonard M. Magid (1972).

The thing that attracted me to Ida was that he explains things in very clear terms, then follows each section with a number of examples showing how the principles are applied to real problems. And answers to all the exercises (separate from the examples) are at the back of the book. This is a pretty recent book and fairly expensive. I was lucky to have found a used copy at a reduced price.

Magid has the most rigorous derivation of power and energy flow on transmission lines I've seen, as well as other extensive transmission line information. One conclusion that pricked my ears was that on a line with a pure standing wave (e.g., a lossless line terminated with an open or short circuit), ". . . power (and therefore, energy) is completely trapped within each [lambda]/4 section of this lossless line, never able to cross the zero-power points and thus constrained forever to rattle to and fro within each quarter-wave section of this line." I had reached this same conclusion some time ago, but realized I hadn't properly evaluated the constant term when integrating power to find the energy. But I didn't want to get into the endless shouting match going on in the newsgroup, and dropped it before going back and fixing my derivation. Hopefully some of the participants in power and energy discussions will read Magid's analysis before resuming. I found this book used at a very modest price.

Roy Lewallen, W7EL

George, W5YR wrote:
> Roy, Chipman on page 138 of "Theory and Problems of Transmission Lines"
> makes the statement
>
> " The conclusion is somewhat surprising, though inescapable, that a
> transmission line can be terminated with a reflection coefficient whose
> magnitude is as great as 2.41 without there being any implication that the
> power level of the reflected wave is greater than that of the incident wave.
> Such a reflection coefficient can exist only on a line whose attention per

> wavelength is high, so that even if the reflected wave is in some sense
> large at the point of reflection, it remains so for only a small fraction of
> a wavelength along the line away from that point . . . The large reflection
> coefficients are obtained only when the reactance of the terminal load
> impedance is of opposite sign to the reactance component of the
> characteristic impedance."
>
> Chipman makes these remarks after his derivation of the operation of lines
> with complex characteristic impedance.
>
>
> --
> 73/72, George
> Amateur Radio W5YR - the Yellow Rose of Texas
> Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
> "In the 57th year and it just keeps getting better!"
> <mailto:w5yr@att.net>

3417. Help:Tower installation/repair Long Island

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 01:18:07 UTC
From: fjx1@aol.comnospam
Message-ID: <20030817211807.06903.00000706@mb-m03.aol.com>
Source record: 110461

Does anyone know anyone who does tower work on Long Island? I need a new cable put on a US Tower tubular tower that sits in a raising/rotating fixture. I can't get the tower out of the boot (in the raising fixture) that supports it , It has to be removed from the support to get the end of the cable.

Does anyone know someone who does tower work?

Also, anyone have a source for stainless stell cable?

Tks,
Gerry

3418. Re: Eznec modeling loading coils?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 01:40:38 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308171740.7958d43c@posting.google.com>
Source record: 110462

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjvocg8ntr4p98@corp.supernews.com>...
> There are a couple of problems with the analogy. First, of course, is
> that there is no secondary winding to convert the primary's magnetic
> field to the current I you reference. The "aether" has no N and no I,
> and doesn't do this. The second problem is that a simple transformer
> model, or any other lumped-element circuit model, is valid only if its
> dimensions are very small compared to a wavelength(*). A mobile whip
> loading coil is often long enough that a current gradient can occur from
> one end to another, so a single lumped element model might be inadequate.

Well Roy, I was trying to remove the inter coil and end to end
capacitance from the equation so a simple analogy could be made. Thus
if there was a current change the cause could be removed from the
itemizerd inductance alone so that other reasons would have to be
researched for energy changes or losses.
(simi;ar to transmission lines and filter circuits)
Still I bend to your superior experience in this matter and withdraw
my comments so that I do not mislead others. My comments emanate from
lumped circuit theorems where the other half of the transformer shows
up at the receiving end as being discussed in another posting
initiated by Dr Slick.
The difference being the environnment, one of specialised steel
laminates and the other being the eather. Looking at things that way
forces one to review
the different coupling to ground effects and other anomolies of this
particular situation
Regards
Art

> Roy Lewallen, W7EL
>
> (*) A particular problem with the mobile loading coil in an electrically
> small whip is that the current changes a great deal over even a very
> short distance, as it goes from zero at the end of the whip (assuming no
> top loading) to a large value at the base. It sounds like sort of a
> circular argument, but a lumped element model loses accuracy any time
> there can be a current gradient across the component. Interestingly, the
> problem becomes less and less severe as top loading is increased,
> because it reduces the current gradient along the whip. You *could*
> quite accurately model a loading coil as a single lumped element if you
> had enough top loading.
>
>
> Art Unwin KB9MZ wrote:
> > Yuri,

> > I think you would better understand what is happening
> > if you view the inductance in question as half of
> > a transformer, where the other half is the aether.
> > This allows you to bring in the formular NxI one side =
> > NxI the otherside. This way you can see that I is constant.
> > If it wasn't a constant then the lines of flux would have a
> > very distorted shape at one end of the inductance.
> > The fact that transformers have impedances that are not
> > totally resistive is because of other factors than Inductance.
> > If I am incorrect with this analogy I would apreciate any
> > corrections as I am sure Yuri would to
> > Art

3419. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 01:59:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <v090kvsf443nc4bnck4rn4hoqpj49250ma@4ax.com>
Source record: 110463

On Sun, 17 Aug 2003 23:21:36 GMT, "George, W5YR" <w5yr@att.net>
wrote:

>
>Several people on this newsgroup keep trying to get this message across, to
>no avail. So, let me pose a question or two in response:
>
>If you knew "the Z of a transmitter" (which I presume is your terminology
>for the "internal resistance of the output stage"), what would you do with
>that information? Where would you use it? What are you prevented from doing
>or knowing by not having that information?
>
>Fair enough?

Hi George,

You mean the two I've responded to? The others are quite mute to a
simple question that relates to the topic line. But not so mute that
I haven't noted reams of correspondence in exchanging insults and
huffing in general:
>>I see you're reduced to insults now.
An insight that was drawn upon more than once.
>>If that's all you ever meant
Again, beating that dead horse was preferred.

As for your last question, I have answered it in the post you just
quoted.

>2. I seriously doubt that anyone knows . . . or cares.
One of that party has objected to others thinking for him, or 50% of
the respondents. True, he doesn't care, neither do I and we covered
that ground long ago. Neither of us popped an artery because Mismatch
Uncertainty presented 1.62dB loss.
>-------1.62 db here, 1.62 db there-------;^)
If the subject has such lack of importance, he showed far more
tolerance to its discussion - no insults offered and no dead horses
beaten. ;-)

73's
Richard Clark, KB7QHC

3420. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 02:00:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f403483_5@corp.newsgroups.com>
Source record: 110464

Roy Lewallen wrote:
> Magid has the most rigorous derivation of power and energy flow on
> transmission lines I've seen, as well as other extensive transmission
> line information. One conclusion that pricked my ears was that on a line
> with a pure standing wave (e.g., a lossless line terminated with an open
> or short circuit), ". . . power (and therefore, energy) is completely
> trapped within each [lambda]/4 section of this lossless line, never able
> to cross the zero-power points and thus constrained forever to rattle to
> and fro within each quarter-wave section of this line."

He's obviously talking about net energy. There is no impedance discontinuity
in a continuous piece of transmission line so there is nothing to cause
reflections at the zero-power points. Net energy doesn't cross the zero-
power points but equal forward energy and reflected energy must cross the
zero-power points. That is easy to prove by observing ghosting on a TV set
being fed by 1000 feet of ladder-line. If energy is completely trapped
within each 1/4WL section, ghosting would be impossible.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3421. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 02:10:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4036e2_5@corp.newsgroups.com>
Source record: 110465

W5DXP wrote:

> Roy Lewallen wrote:
>> Magid has the most rigorous derivation of power and energy flow on
>> transmission lines I've seen, as well as other extensive transmission
>> line information. One conclusion that pricked my ears was that on a
>> line with a pure standing wave (e.g., a lossless line terminated with
>> an open or short circuit), ". . . power (and therefore, energy) is
>> completely trapped within each [lambda]/4 section of this lossless
>> line, never able to cross the zero-power points and thus constrained
>> forever to rattle to and fro within each quarter-wave section of this
>> line."
>
> He's obviously talking about net energy. There is no impedance
> discontinuity
> in a continuous piece of transmission line so there is nothing to cause
> reflections at the zero-power points. Net energy doesn't cross the zero-
> power points but equal forward energy and reflected energy must cross the
> zero-power points. That is easy to prove by observing ghosting on a TV set
> being fed by 1000 feet of ladder-line. If energy is completely trapped
> within each 1/4WL section, ghosting would be impossible.

I forgot to add. At the "zero-power points", either voltage or current is
zero. All that means is that all the energy is contained in the opposite
field. If the voltage is zero, the H-field is at a maximum. If the current
is zero, the E-field is at a maximum. The energy still exists, just in one
field or the other. V*I*cos(theta) is NET energy. The power in the forward
wave is Vfwd*Ifwd and the power in the reflected wave is Vref*Iref. Those
values are constant all up and down the line for a lossless feedline.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3422. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 02:46:32 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <87oeyn3con.fld@barrow.com>
Source record: 110466

"H. Adam Stevens" <solo@totalaccess.net> wrote:
>How to measure source impedance.
>Connect an adjustable load directly to the source, forget the transmission
>line.
>When the load gets hottest for the least power into the source, their
>impedances are matched.

Unless of course that shuts down, or even destroys, the source
device in the process.

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

3423. Re: Help:Tower installation/repair Long Island

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 02:47:58 UTC
From: kyle <kyle@nospam.net>
Message-ID: <3F403E5E.B82C32D5@nospam.net>
Source record: 110467

http://www.mcmaster.com

mcmaster-carr has just about any and everything including the cable you need.

kyle

Fjx1 wrote:

> Does anyone know anyone who does tower work on Long Island? I need a new cable
> put on a US Tower tubular tower that sits in a raising/rotating fixture. I
> can't get the tower out of the boot (in the raising fixture) that supports it ,
> It has to be removed from the support to get the end of the cable.
>
> Does anyone know someone who does tower work?
>
> Also, anyone have a source for stainless stell cable?
>
> Tks,
> Gerry

3424. Re: Help:Tower installation/repair Long Island

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 02:56:59 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vk0g3b15o2c0f6@corp.supernews.com>
Source record: 110468

Dear Gerry:
Nearby in NH is XX Towers. They do that sort of work. Here is the
URL for their site:
http://www.xxtowers.com/

73, Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

3425. Re: Help:Tower installation/repair Long Island

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 03:48:20 UTC
From: fjx1@aol.comnospam
Message-ID: <20030817234820.07238.00000091@mb-m26.aol.com>
Source record: 110319

Thank you MAc.

Gerry

3426. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 04:02:55 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308172002.624df2a3@posting.google.com>
Source record: 110320

"Ralph Mowery" <rmowery@ctc.net> wrote in message news:<ByCdnXyvQvqm_6CiXTWJig@ctc.net>...
> > proper voltage? When you connect speakers to an amplifier, do you
> > worry about what the source impedance is, so long as it's low enough
> > to not materially affect damping? If not, why would you worry about
>
> I would not go there on the audio . The speakers do need to match the design
> of the amp just as the load on a transmitter needs to match the design
> impedance. Most power output devices are designed to produce maximum power
> and /or minimum distortion into a specific load.

Just my point, Ralph... you should worry about your speakers being
within the range of LOAD impedances that the amplifier is designed
for, but you seldom would worry about the SOURCE impedance. You
should worry about the antenna-load you present to your transmitter or
amplifier being within the range of impedances for which the
transmitter or amplifier is designed, but why worry about the
transmitter or amplifier source impedance?

(Some folk worry about audio amp damping factor, but it tends to be
grossly overemphasized...see postings over the years by Dick Pierce in
the audio groups for the simple explanation why it doesn't matter all
that much.)

Cheers,
Tom

3427. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 04:12:52 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308172012.a21efb9@posting.google.com>
Source record: 110321

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<o28pjv0e6jm9qa19qbqsjv1to5k19l2ppa@4ax.com>...
> On Fri, 15 Aug 2003 07:45:32 GMT, "George, W5YR" <w5yr@att.net>
> wrote:
>
> >About all that anyone needs to know about an amateur radio amplifier
> >(transmitter) in order to use it properly is the output power level and the
> >required load resistance.
>
> Hi George,
>
> And us folk need never worry about what is beneath the hood as long as
> we don't need a mechanic. Sheesh, haven't you learned to turn the
> knob until the meter is full scale? All you have to really remember
> to push the button before you talk!
...

Richard, I'm seriously worried about you. Was that posting, and many
of the others I've seen from you recently, a plea for help? I'm sure
we can come up with appropriate help lines for you to call, if only
you will tell us what's at the root of your problem.

Regards,
Tom

3428. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 06:08:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <lhq0kv82fh2unsgmjf2uereo37j21bn7vf@4ax.com>
Source record: 110322

On 17 Aug 2003 21:12:52 -0700, k7itm@aol.com (Tom Bruhns) wrote:
>Richard, I'm seriously worried about you. Was that posting, and many
>of the others I've seen from you recently, a plea for help? I'm sure
>we can come up with appropriate help lines for you to call, if only
>you will tell us what's at the root of your problem.
>
>Regards,
>Tom

Hi Tom,

You only need drive down the road some 25 minutes if you are serious.
Less time than that spent in all these postings that have you worried.
I've driven to Mukilteo 5 days a week for several years and its not
all that far and almost a straight shot especially with you on the
speedway.

When can I expect you? ;-)

73's
Richard Clark, KB7QHC

3429. RC antenna in confined space

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 10:47:53 UTC
From: 17538@student.hhs.se
Message-ID: <b118f60c.0308180247.7aaf95b3@posting.google.com>
Source record: 110323

In a remote control project, I have a small FM 433.92 MHz sender module which according to its specifications requires a "30-35 cm whip antenna for 200 meter range in open air". However, I'd like to put the antenna INSIDE a plastic box, containing some electronics, which is only 5 times 10 times 20 cm, where 5 cm is the height.

I wonder how should I proceed to maximize the range of the transmission (of digital signals from the box):

- Should I squeeze in an antenna horisontally in the box?
or should I utilize the vertical space available?

- Should the antenna be as long as possible, or a harmonic division of the ideal "30-35 cm"?

- Also, what material should the antenna be made of? And what shape (thin/thick, tube/square, solid/hollow)?

- Can I use a loop antenna?

Basically, I have no restrictions on the recieving antenna, other than distance. How could I design/position it in order to maximize the working range from the transmitter?

(I hope this question is not malplaced in this forum. Any thought on any point above is most welcome!)

3430. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 11:12:43 UTC
From: kd1@sympatico.ca
Message-ID: <3F40B4AB.DA2B2B01@sympatico.ca>
Source record: 110324

W5DXP wrote:
>
> I forgot to add. At the "zero-power points", either voltage or current is
> zero. All that means is that all the energy is contained in the opposite
> field.

Not quite all. It also means that there is NO power since P = V x I.

There can be lots of energy present but none of it is flowing past
the zero voltage or zero current point; hence no power.

To believe that energy is flowing across a zero voltage or zero current
point requires the rejection of the view that instantaneous power is
equal to instantaneous voltage multiplied by instantaneous current.
Rejection of
P = V x I would have wide impacts on our understanding of electrical
power and energy flows. (My light bulb is not drawing any current but
there could still be energy flowing in it!?)
Think carefully before going there.

...Keith

3431. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 11:28:08 UTC
From: richardharrison@webtv.net
Message-ID: <26764-3F40B848-372@storefull-2318.public.lawson.webtv.net>
Source record: 110326

Floyd Davidson wrote:
"Unless of course that shuts down ,or even destroys the source devices in the process (adjustable load gets hottest for least power to the source as proposed by H. Adam Stevens)."

H.`s variable load can determine a match because maximum power transfers if the load impedance is the conjugate of the source. But, least power input may not coincide with maximum power output. Low internal source impedance as compared with the load impedance usually is more efficient, but not necessarily so. With impedance produced by switched-off time as in the Class C amplifier, impedance is not only a function of internal loss.

A Class A amplifier has constant power input so that the more power delivered to a load, the less power is dissipated in the amplifier.

Simple determination of source impedance is to divide the open-circuit voltage by the short-circuit current out of the device. That requires a source impedance that is the same at matched loading as with a shorted load. As Floyd notes, the extremes, open and shorts, can shut-down or destroy from too much voltage or current.

Near the region of a conjugate match, less severe voltage and current are likely. Maximum power transfer to the load occurs at the conjugate match point. Heat rise would be the likely cause of damage to a transmitter at maximum output. Power output measurements can be made quickly to limit transmitter and load temperature rise in and around the load impedance which gives maximum power output. A versatile load can be used to determine the conjugate match and thus the source impedance.

The transmitter may not be designed to deliver maximum power output even momentarily and may have built-in protection to prevent it.

Feedback may not increase maximum power output without regard to distortion. In an audio amplifier, the output impedance may be made to look like a short to the speaker and thereby put the brakes on its movement as it tends to ring on after excitation. The same feedback lowers distortion at a given power level, or said another way increases power output for a given level of distortion, but maximum power output without regard to distortion is unaffected by the feedback. R-F amplifier negative feedback likewise has no effect on the all-out maximum power.

Best regards, Richard Harrison, KB5WZI

3432. HV Vertical ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 11:32:49 UTC
From: MAS <panman_uk@hotmail.com>
Message-ID: <AP20b.350$tS2.64394@newsfep2-win.server.ntli.net>
Source record: 110325

What's your view on the best HF multi band vertical for me.

I know the fact I am looking at multi band is a compromise with respect to performance but who can afford mono band antennas for all bands ;-)

I am able to mount something on a pole putting the base of the antenna about 10 - 20 ft above ground.

I was thinking about the Cushcraft R6000 but I am open to ideas.

Cheers..

3433. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 12:05:35 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vk1gdgnnq17r51@corp.supernews.com>
Source record: 110327

"Richard Harrison" <richardharrison@webtv.net> wrote in message
news:26764-3F40B848-372@storefull-2318.public.lawson.webtv.net...
> Floyd Davidson wrote:
> "Unless of course that shuts down ,or even destroys the source devices
> in the process (adjustable load gets hottest for least power to the
> source as proposed by H. Adam Stevens)."
>
> H.`s variable load can determine a match because maximum power transfers
> if the load impedance is the conjugate of the source.

Precisely.

>But, least power
> input may not coincide with maximum power output. Low internal source
> impedance as compared with the load impedance usually is more efficient,
> but not necessarily so. With impedance produced by switched-off time as
> in the Class C amplifier, impedance is not only a function of internal
> loss.
>
> A Class A amplifier has constant power input so that the more power
> delivered to a load, the less power is dissipated in the amplifier.

I have a class A audio amp (BAT VK500) and it definitely gets cooler when
The Carmina Burana gets louder.

>
> Simple determination of source impedance is to divide the open-circuit
> voltage by the short-circuit current out of the device. That requires a
> source impedance that is the same at matched loading as with a shorted
> load. As Floyd notes, the extremes, open and shorts, can shut-down or
> destroy from too much voltage or current.
>
> Near the region of a conjugate match, less severe voltage and current
> are likely. Maximum power transfer to the load occurs at the conjugate
> match point.

And that's all I was getting at.

> Heat rise would be the likely cause of damage to a
> transmitter at maximum output. Power output measurements can be made
> quickly to limit transmitter and load temperature rise in and around the
> load impedance which gives maximum power output. A versatile load can be
> used to determine the conjugate match and thus the source impedance.
>
> The transmitter may not be designed to deliver maximum power output even
> momentarily and may have built-in protection to prevent it.

>
> Feedback may not increase maximum power output without regard to
> distortion. In an audio amplifier, the output impedance may be made to
> look like a short to the speaker and thereby put the brakes on its
> movement as it tends to ring on after excitation. The same feedback
> lowers distortion at a given power level, or said another way increases
> power output for a given level of distortion, but maximum power output
> without regard to distortion is unaffected by the feedback. R-F
> amplifier negative feedback likewise has no effect on the all-out
> maximum power.
>
> Best regards, Richard Harrison, KB5WZI
>

Matched impedances transfer maximum power.
Now add a transmission line of a different impedance between the source and load.
Consider what happens to a reflected wave when it gets back to the source.
If the source is matched to the line, is the reflected wave dissipated as heat in the source?
What if the source's impedance is much lower than the line?
Does it then begin to look like a short to the reflected wave?
When all the impedances are matched the solution is just a simple traveling wave from source to load.
I like that.
73 es gud dx
H.
NQ5H

3434. Re: HV Vertical ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 12:16:04 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vk1h18boqi3g95@corp.supernews.com>
Source record: 110328

"MAS" <panman_uk@hotmail.com> wrote in message
news:AP20b.350$tS2.64394@newsfep2-win.server.ntli.net...
> What's your view on the best HF multi band vertical for me.
>
> I know the fact I am looking at multi band is a compromise with respect to
> performance but who can afford mono band antennas for all bands ;-)
>
> I am able to mount something on a pole putting the base of the antenna
about
> 10 - 20 ft above ground.
>
> I was thinking about the Cushcraft R6000 but I am open to ideas.
>
> Cheers..
>
>
Hi OM
I just gave away an R8.
I have the BiggIR vertical.
www.steppir.com
No compromises but you'll need a radials.
Mine's grounded on a very long fence.
It is a "mono band antenna for all bands" => 40 - 2
73
H.
NQ5H

3435. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 12:22:21 UTC
From: Jack Smith <jsmith@mnsinc.com>
Message-ID: <glg1kvgc362lqg42a1skh184v29lp2a6r6@4ax.com>
Source record: 110329

On Sun, 17 Aug 2003 18:16:42 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

Interesting stuff snipped
>
>Magid has the most rigorous derivation of power and energy flow on
>transmission lines I've seen, as well as other extensive transmission
>line information. One conclusion that pricked my ears was that on a line
>with a pure standing wave (e.g., a lossless line terminated with an open
>or short circuit), ". . . power (and therefore, energy) is completely
>trapped within each [lambda]/4 section of this lossless line, never able
>to cross the zero-power points and thus constrained forever to rattle to
>and fro within each quarter-wave section of this line." I had reached
>this same conclusion some time ago, but realized I hadn't properly
>evaluated the constant term when integrating power to find the energy.
>But I didn't want to get into the endless shouting match going on in the
>newsgroup, and dropped it before going back and fixing my derivation.
>Hopefully some of the participants in power and energy discussions will
>read Magid's analysis before resuming. I found this book used at a very
>modest price.
>

Roy:

Interesting point and I don't recall reading or hearing it elsewhere.

The following is dashed off without fully thinking it through, so no
warranty on its accuracy.

If you think of a sound wave (longitudinal transmission, of course) in
a lossless acoustic transmission line terminated with a short, the
individual air molecules within each 1/4 wave section are likewise
trapped since at the 1/4 wave points there is zero sound pressure.
This may be a useful analogy for the electromagnetic transverse
propagating T-line.

Jack K8ZOA

3436. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 12:43:21 UTC
From: kd1@sympatico.ca
Message-ID: <3F40C9E9.CA3D699D@sympatico.ca>
Source record: 110330

W5DXP wrote:
>
> Roy Lewallen wrote:
> > Magid has the most rigorous derivation of power and energy flow on
> > transmission lines I've seen, as well as other extensive transmission
> > line information. One conclusion that pricked my ears was that on a line
> > with a pure standing wave (e.g., a lossless line terminated with an open
> > or short circuit), ". . . power (and therefore, energy) is completely
> > trapped within each [lambda]/4 section of this lossless line, never able
> > to cross the zero-power points and thus constrained forever to rattle to
> > and fro within each quarter-wave section of this line."
>
> He's obviously talking about net energy.

Not obvious at all.

> There is no impedance discontinuity
> in a continuous piece of transmission line so there is nothing to cause
> reflections at the zero-power points.

A mechanical analogue may help. Consider that executive toy: five steel
balls attached by string to a frame. Pull back the ball on one side and
let it go, when it strikes the second ball, the fifth ball swings up.
Reduce this toy to just two balls.

Pull one back, when it strikes the second, it swings out, then swings
back striking the first which then swings out. It is clear that there
is energy transfer between the balls.

Redo the experiment by pulling both balls back and letting them go at
the same time. After colliding, both balls bounce back. Were you to
place a very thin sheet of steel between the balls at the collision
point it would not move. Since Work is Force x Distance and the Distance
is zero there is no Work being done on the sheet so no energy can be
crossing it.

In the shorted or open transmission line (from Magid, above), the
analogue is two clumps of charge rushing towards each other and meeting
at a voltage maximum (current zero). No charge crosses this point
(obvious because the current is zero), but the charge coming from each
direction builds to a voltage maximum and bounces away again (since
like charge repels).

> Net energy doesn't cross the zero-
> power points but equal forward energy and reflected energy must cross the
> zero-power points.

Not possible since NO energy crosses the zero voltage and zero current points (unless you want to reject Pinst = Vist x Iinst).

> That is easy to prove by observing ghosting on a TV set
> being fed by 1000 feet of ladder-line. If energy is completely trapped
> within each 1/4WL section, ghosting would be impossible.

This ghosting argument appears quite powerful along with the somewhat similar observation that information can be sent in both directions simultaneously on a phone line.

The difficulty I encountered, while trying to understand, is that simultaneously holding the views that:
1) ghosting is caused by reflected energy flowing back along the line; and
2) Pinst = Vinst x Iinst
required too much double think.

Item 2) seemed to be too universally applicable to let go, so a better understanding of 1) was required.

Although it seems unrelated, it is worthwhile to consider how to send information along a line without sending energy in the same direction.

For simplicity, consider an ideal transmission line of useful length with
a matched Thevenin DC source on the left and a matched load connected through a switch on the right. Initially, the switch is open and the line is charged to V: the voltage of the voltage source. Observe that there is no current flowing anywhere, hence no energy flowing and therefore no power. This is entirely consistent with 2), above.

Close the switch. Charge starts flowing from the line through the load. A negative voltage step begins to propagate backwards along the line at the velocity of the line. When this voltage step reaches the source, the line has entered a new energy state with constant voltage V/2 across its length, a current of V/2/R flowing and energy is flowing from the left to the right at V**2/R/4 Watts. This power is dissipated in the load at the right.

Opening the switch will cause a positive voltage step to propagate to the left and when it reaches the source, the line will have been restored to its initial conditions with no energy flowing.

A detector at the source (monitoring voltage or current) can determine if the switch is open or closed (after the voltage steps have finished propagating), thus information can be transferred from right to left while energy only flows from left to right.

This information is transferred by doing something that changes the energy state on the line and waiting for the new energy state to propagate along the line. It is important to note that the propagation of the change in energy state is not the same as the propagation of energy. They can, and often do, occur in different

directions at the same time.

And to return to the original question, this is the cause of ghosting; it is the propagation of the change in energy state on the line that results in ghosting. If the source was matched, then the line settles to its final state in one round trip and no ghosting is observed. When the source is not matched, it takes several round trips for the line to settle and ghosting is what you see.

By the way, this is not quite Magid's situation since he was saying the energy completely bounced back and forth only when the line was open or shorted. In other situations with standing waves, some of the energy is bouncing within the 1/4 wave sections, while other energy is flowing forward.

...Keith

3437. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 13:21:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f40d41e$1_7@corp.newsgroups.com>
Source record: 110331

kd1@sympatico.ca wrote:
> W5DXP wrote:
>>I forgot to add. At the "zero-power points", either voltage or current is
>>zero. All that means is that all the energy is contained in the opposite
>>field.
>
> Not quite all. It also means that there is NO power since P = V x I.

It means there is no NET power transfer. There are power flow vectors
in both directions that are equal in magnitude. Reference: _Fields_
and_Waves_in_Communications_Electronics_ by Ramo, Whinnery, & Van Duzer,
section 6.10, page 350, where they describe Pz-, the reflected wave
Poynting vector and Pz+, the forward wave Poynting vector.

> There can be lots of energy present but none of it is flowing past
> the zero voltage or zero current point; hence no power.

There is a forward power flow vector and a reflected power flow vector.
There is no net power flowing past any point. There are, however, equal
magnitude component constant power flow vectors flowing in both directions.

> To believe that energy is flowing across a zero voltage or zero current
> point requires the rejection of the view that instantaneous power is
> equal to instantaneous voltage multiplied by instantaneous current.

No, it doesn't. It only requires acceptance of Ramo, Whinnery, & Van Duzer.

However, to reject energy flow across a zero voltage or zero current
point requires a confusion of cause and effect. Energy flow in both
directions is the *CAUSE* of the standing waves. You simply cannot
turn around and say that standing waves eliminate their own cause
but continue to exist anyway.

> Rejection of
> P = V x I would have wide impacts on our understanding of electrical
> power and energy flows.

Nobody is rejecting it. If the lossless stub is one second long, it takes
two seconds of *POWER* to bring it to steady-state. If the stub contains
no moving energy, where did all those joules go? They cannot disappear or
stand still. If they are moving, power exists.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3438. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 13:25:43 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f40d536_7@corp.newsgroups.com>
Source record: 110332

H. Adam Stevens wrote:
> I have a class A audio amp (BAT VK500) and it definitely gets cooler when
> The Carmina Burana gets louder.

Take a lesson from the power companies. They run coolest when their
output impedances are the lowest. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3439. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 13:37:51 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vk1lqj2ktbdf1c@corp.supernews.com>
Source record: 110333

Until one breaker goes and the rest of the grid can't handle the load.
;^)))))))))
73,
H.
"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f40d536_7@corp.newsgroups.com...
> H. Adam Stevens wrote:
> > I have a class A audio amp (BAT VK500) and it definitely gets cooler
when
> > The Carmina Burana gets louder.
>
> Take a lesson from the power companies. They run coolest when their
> output impedances are the lowest. :-)
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> ------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3440. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 14:13:45 UTC
From: Floyd Davidson <floyd@barrow.com>
Message-ID: <8765kv2gva.fld@barrow.com>
Source record: 110334

richardharrison@webtv.net (Richard Harrison) wrote:
>Floyd Davidson wrote:
>"Unless of course that shuts down ,or even destroys the source devices
>in the process (adjustable load gets hottest for least power to the
>source as proposed by H. Adam Stevens)."

If you are going to quote me, the least you could do is quote
what *I* said, without editing it to suit your needs.

Regardless, whatever it is that the rest of this nonsense is
supposed to mean, it certainly doesn't relate to what I posted.

>H.`s variable load can determine a match because maximum power transfers
>if the load impedance is the conjugate of the source. But, least power
>input may not coincide with maximum power output. Low internal source
>impedance as compared with the load impedance usually is more efficient,
>but not necessarily so. With impedance produced by switched-off time as
>in the Class C amplifier, impedance is not only a function of internal
>loss.
>
>A Class A amplifier has constant power input so that the more power
>delivered to a load, the less power is dissipated in the amplifier.
>
>Simple determination of source impedance is to divide the open-circuit
>voltage by the short-circuit current out of the device. That requires a
>source impedance that is the same at matched loading as with a shorted
>load. As Floyd notes, the extremes, open and shorts, can shut-down or
>destroy from too much voltage or current.
>
>Near the region of a conjugate match, less severe voltage and current
>are likely. Maximum power transfer to the load occurs at the conjugate
>match point. Heat rise would be the likely cause of damage to a
>transmitter at maximum output. Power output measurements can be made
>quickly to limit transmitter and load temperature rise in and around the
>load impedance which gives maximum power output. A versatile load can be
>used to determine the conjugate match and thus the source impedance.
>
>The transmitter may not be designed to deliver maximum power output even
>momentarily and may have built-in protection to prevent it.
>
>Feedback may not increase maximum power output without regard to
>distortion. In an audio amplifier, the output impedance may be made to
>look like a short to the speaker and thereby put the brakes on its
>movement as it tends to ring on after excitation. The same feedback
>lowers distortion at a given power level, or said another way increases

>power output for a given level of distortion, but maximum power output
>without regard to distortion is unaffected by the feedback. R-F
>amplifier negative feedback likewise has no effect on the all-out
>maximum power.
>
>Best regards, Richard Harrison, KB5WZI
>

--
Floyd L. Davidson <http://web.newsguy.com/floyd_davidson>
Ukpeagvik (Barrow, Alaska) floyd@barrow.com

3441. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 14:51:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhqp4t$e7f$1@titan.btinternet.com>
Source record: 110335

> >Magid has the most rigorous derivation of power and energy flow on
> >transmission lines,
==========
The following short question is adressed to all contributors to this newsgroup who feel impelled to bolster their lack of self-confidence by dragging in the chapter and verse of their favourite worshipped authors and Gurus, most of whom nobody has ever heard of and highly unlikely ever to get their hands on.

How do you know that?

3442. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 15:00:36 UTC
From: richardharrison@webtv.net
Message-ID: <1513-3F40EA14-53@storefull-2317.public.lawson.webtv.net>
Source record: 110336

H. Adam Stevens wrote:
"Until one breaker goes and the rest of the grid can`t handle the load."

I was in England last week and missed the blackout. It would not have affected the Houston Texas area served by Houston Lighting & Power Company had the anomaly originated outside Texas. HL&P, or whatever the company calls itself today, refuses inmterconnection with Gulf States Utility Company or with any company with interstate business. To interconnect would place HL&P under the control of the Federal Energy Regulatory Commission (FERC) which controls interstate energy and power commerce.

Protective relaying is imperfect. It may be much cheaper to improve data machines and software used to adapt power grids to anomalies than to invest countless billions to cver-build facilites for the rare anomaly which spreads.

Making FERC less onerous might get heavyweights like HL&P to engage in interstate commerce and be there to pick up the load that others can`t handle in emergencies. I believe the least practical regulation is the best regulation, but de-regulation of power companies has proved stupid. Complete de-regulation of natural monopolies must be done with great care. It makes no sense to allow middle-men to resell a service and add little save expense themselves.

Best regards, Richard Harrison, KB5WZI

3443. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 15:18:50 UTC
From: kd1@sympatico.ca
Message-ID: <3F40EE5A.9AA10E30@sympatico.ca>
Source record: 110337

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > W5DXP wrote:
> >>I forgot to add. At the "zero-power points", either voltage or current is
> >>zero. All that means is that all the energy is contained in the opposite
> >>field.
> >
> > Not quite all. It also means that there is NO power since P = V x I.
>
> It means there is no NET power transfer.

Do not be afraid to admit that you have changed the definition of P = V
x I
and therefore do not accept the standard definition.

When I learned Pinst = Vinst x Iinst there were no caveats about how
Pinst meant Pnet. Instantaneous energy is flowing or it is not. When
Pinst
is 0 for all time, then there is no energy flowing.

To satisfy your theory (and minimize double think), you have had to
change
this to Pnet is zero to allow these cancelling powers to flow. So be it.

> There are power flow vectors
> in both directions that are equal in magnitude. Reference: _Fields_
> and_Waves_in_Communications_Electronics_ by Ramo, Whinnery, & Van Duzer,
> section 6.10, page 350, where they describe Pz-, the reflected wave
> Poynting vector and Pz+, the forward wave Poynting vector.
>
> > There can be lots of energy present but none of it is flowing past
> > the zero voltage or zero current point; hence no power.
>
> There is a forward power flow vector and a reflected power flow vector.
> There is no net power flowing past any point.

True, sort of. At the quarter wave points where voltage or current are
always
zero, there is no energy flowing. Period.

At other points, energy flows in one direction for a quarter cycle and
then in the other direction for the next quarter cycle, producing a net
of zero. A true instantenouse power meter (one which measures V and I
and
displays V x I) will easily demonstrate this. As a thought experiment,

move such a true power meter along a shorted or open line and think if its indications in the time domain, then do the averages. It will be quite instructive. Repeat for a line terminated in other than its characteristic impedance.

By the way, since energy flows forward for a quarter cycle and backwards for the next, the maximum distance travelled by this energy is one quarter
wavelength on the line. It is not flowing all the way to the end of the line and then back. There is not enough time for this to happen (on a multi-wavelength line) since it changes direction every quarter cycle.

> There are, however, equal
> magnitude component constant power flow vectors flowing in both directions.
>
> > To believe that energy is flowing across a zero voltage or zero current
> > point requires the rejection of the view that instantaneous power is
> > equal to instantaneous voltage multiplied by instantaneous current.
>
> No, it doesn't. It only requires acceptance of Ramo, Whinnery, & Van Duzer.
>
> However, to reject energy flow across a zero voltage or zero current
> point requires a confusion of cause and effect. Energy flow in both
> directions is the *CAUSE* of the standing waves. You simply cannot
> turn around and say that standing waves eliminate their own cause
> but continue to exist anyway.

Not quite. Standing voltage and current waves (which are not waves in the normal sense) can be observed on the line. They can be measured with real voltage and current instruments; as can real energy flows with a real (V x I) power meter (but not a 'Bird watt' meter which is doing something quite different). It happens that if you assume the existence of forward and reverse voltage and current waves, mathematical functions can be derived that will produce the same distribution of voltage and current as observed on the line. This is extraordinarily convenient some analysis but does not mean that these assumed waves are real.

A mechanical analogue would be to look at a guy wire on a pole. You can analyze the forces as two vectors at 90 degrees (or any other angle of convenience!), but never make the mistake of assuming that there are actually two guy wires present. Just because it is mathematically convenient to assume the existence of two vectors does not mean they exist.

> > Rejection of
> > P = V x I would have wide impacts on our understanding of electrical
> > power and energy flows.
>
> Nobody is rejecting it. If the lossless stub is one second long, it takes
> two seconds of *POWER* to bring it to steady-state. If the stub contains
> no moving energy, where did all those joules go?

This energy is indeed stored in the stub. None of it moves across zero voltage
or current boundaries. Between these boundaries, it is indeed moving as it changes from being stored in the capacitance and inductance of the line.
This time variation of the location of the stored energy produces the observed
voltages and currents on the line.

> They cannot disappear

Absolutely. They do not disappear.

>or stand still.

With AC excitation they do not stand still, but when similar analysis is done
for a line excited with a DC source, the energy does indeed stand still. An
open line stores the energy in the capacitance and a shorted line stores it
in the inductance.

> If they are moving, power exists.

Yes, but it never moves more than a quarter wavelength.

...Keith

3444. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 15:33:35 UTC
From: richardharrison@webtv.net
Message-ID: <1511-3F40F1CF-129@storefull-2317.public.lawson.webtv.net>
Source record: 110338

Floyd Davidson wrote:
"Unless of course that shuts down, or even destroys the source device in the process."

Floyd was commenting on H. Adam Stevens` suggestion of how to measure source impedance.

I appended the gist of H.`s comment in parentheses to define "that" in Floyd`s statement.

I am sorry I misplaced the quotation marks which should have been placed as they are above. I don`t disagree with either Floyd or H.

Best regards, Richard Harrison, KB5WZI

3445. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 16:37:59 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308180837.53ce61f3@posting.google.com>
Source record: 110339

Richard,

If you do indeed need help, it's far more help than I can give you.
My posting was not in jest, nor was it to poke fun at you or your
postings. I was dead serious about it.

Cheers,
Tom

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<lhq0kv82fh2unsgmjf2uereo37j21bn7vf@4ax.com>...
> On 17 Aug 2003 21:12:52 -0700, k7itm@aol.com (Tom Bruhns) wrote:
> >Richard, I'm seriously worried about you. Was that posting, and many
> >of the others I've seen from you recently, a plea for help? I'm sure
> >we can come up with appropriate help lines for you to call, if only
> >you will tell us what's at the root of your problem.
> >
> >Regards,
> >Tom
>
> Hi Tom,
>
> You only need drive down the road some 25 minutes if you are serious.
> Less time than that spent in all these postings that have you worried.
> I've driven to Mukilteo 5 days a week for several years and its not
> all that far and almost a straight shot especially with you on the
> speedway.
>
> When can I expect you? ;-)
>
> 73's
> Richard Clark, KB7QHC

3446. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 16:40:38 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308180840.3ea47fe2@posting.google.com>
Source record: 110340

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhog1p$au2$1@hercules.btinternet.com>...
>
> I havn't been following the discussion very closely.
>
> But does your statement imply a reflection coefficient with a magnitude
> greater than unity cannot exist when only a passive transmission network is
> involved ?
>
> Reg, G4FGQ

Yes, on page 201-202 of Pozar's "Microwave engineering".

[s11]**2 + [s21]**2 = 1

For a lossless passive two port network, where the brackets
indicate magnitude only.

"If a network is lossless, then no real power can be delivered to
the network." This in essence is a conservation of energy principle,
where in a lossless passive network, if you have -3dB insertion loss,
you must have -3dB return loss as well (half the power through, half
reflected, none dissipated).
This would give you: (0.707)**2 + (.707)**2 = 1

When ever [s11]**2 + [s21]**2 does NOT equal 1, then the network
has losses.

Therefore, the reflected voltage can never be greater than the
input voltage for a passive network, and the reflection coefficient
can never be greater than 1 for such a case.

Slick

3447. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 16:50:18 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308180850.7785ad9d@posting.google.com>
Source record: 110341

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f3fd7a5_2@corp.newsgroups.com>...
>
> The transmission coefficient can certainly be greater than unity,
> being (2*Z2)/(Z1+Z2).

From Pozar's Microwave Engineering (Pg. 606):

Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

Where Zl is the load impedance, and Zo is the characteristic
impedance reference.

The reflection coefficient cannot be greater than unit.

How can you have an S21 that is greater than unity with a passive
network?

Slick

3448. Gap ANtenna Titan

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 16:55:47 UTC
From: Sgordon <noshoes2@yahoo.com>
Message-ID: <ny70b.26730$Vx2.12262391@newssvr28.news.prodigy.com>
Source record: 110342

My vote would have to be the Gap Titan 10-80m. no radials needed. I didn't think it would do very good compared to my full wave loop at 38ft. But I will tell you it does excellent. As soon as I got it up in the air we worked PZ5 and YS1 with 100 watts with 59 signal. Switched to my loop with the YS1 and went 56.

http://www.gapantenna.com/

--
Sincerely,
Scott Gordon
Phone: 1-888-428-6622
Pre-Recorded Call 1-888-295-2806
Yahoo Chat ID scott1gordon
AOL ID scott1gordon
http://best.justsaycash.com/ Just Say Cash
http://best.toxicfreehomes.com/ Is Your Home A Healthy Home?
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==========

3449. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 16:57:43 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308180857.43d65db9@posting.google.com>
Source record: 110343

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhlfb9sig1@hercules.btinternet.com>...
>
> Either Pozar (who I've never heard of) is not quite correct or Dr Slick has
> misquoted him or taken him out of context.
>
> In fact, the equation is also true for complex values of Zl and Zo. The
> angle of RC can lie in any of the 4 quadrants. Furthermore, the magnitude of
> RC can exceed unity.
>
> I offer no references in support of this statement. It is issued here
> entirely on my own responsibility.
> ----
> Reg, G4FGQ

You're right. I looked back and Z1 and Zo CAN be complex, and the
RC can be complex. Which doesn't make my original post wrong, just
extremely conservative!

Thanks for the correction.

Slick

3450. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 17:03:42 UTC
From: richardharrison@webtv.net
Message-ID: <19438-3F4106EE-453@storefull-2314.public.lawson.webtv.net>
Source record: 110347

Keith wrote:
"At the quarter wave points where voltage and current are always zero,
there is no energy flowing. Period."

Yes there is energy flowing, and it is flowing in both directions if it
is flowing in one direction. Otherwise there would be no standing wave.

The waves flow right through each other so long as the impedance is
uniform. Energy flow is unabated at those points of illusory zeros.
Those zeros are not zeros at all in the forward and reverse waves. They
only appear as zeros when your sensor can`t separate the forward from
the reverse. Get a proper directional sensor and the forward wave is
sensed as full amplitude as is the reverse wave.

Best regards, Richard Harrison, KB5WZI

3451. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 17:07:37 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308180907.25702dd@posting.google.com>
Source record: 110344

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjvk0eq6012l63@corp.supernews.com>...

let me rephrase:

PA----+SWR meter1+----50 ohm line----+SWR meter2+----50 ohm
line----+50 ohm
(50 Ohms)
dummy

load
1 2 3

If you measure the SWR at point 1, you let Z1 be 50 ohms, and Zo
is the output impedance of the PA. SWR meter1 should be characterized
to Zo.

I've agreed that SWR meter2s SWR reading will not change as you
change PAs impedance, but the SWR at point 1 definitely will.

So, Does the SWR change as you change the source impedance? IT
DEPENDS ON WHERE YOU MEASURE IT!

From Pozar's Microwave Engineering (Pg. 606):

Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

It should be easy to see from this well known equation that a
perfect 50 Ohm Z1 will definitely change SWR as you change Zo away
from 50 ohms.

Slick

BTW Roy, comparing someone to the intelligence of your adolescent
kid who waits for trains because you told him you are an engineer is
indeed an insult.

3452. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 17:08:58 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308180908.3dff6b77@posting.google.com>
Source record: 110345

let me rephrase:

PA----+SWR meter1+----50 ohm line----+SWR meter2+----50 ohm
line----+50 ohm
(50 Ohms)
dummy

load
1 2 3

If you measure the SWR at point 1, you let Z1 be 50 ohms, and Zo
is the output impedance of the PA. SWR meter1 should be characterized
to Zo.

I've agreed that SWR meter2s SWR reading will not change as you
change PAs impedance, but the SWR at point 1 definitely will.

So, Does the SWR change as you change the source impedance? IT
DEPENDS ON WHERE YOU MEASURE IT!

From Pozar's Microwave Engineering (Pg. 606):

Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

It should be easy to see from this well known equation that a
perfect 50 Ohm Z1 will definitely change SWR as you change Zo away
from 50 ohms.

Slick

3453. SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 17:13:14 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308180913.63255603@posting.google.com>
Source record: 110346

let me rephrase:

PA----+SWR meter1+----50 ohm line----+SWR meter2+----50 ohm
line----+50 ohm
(same Z as PA) (50 Ohms)
dummy

load
1 2 3

If you measure the SWR at point 1, you let Z1 (Zload) be 50 ohms,
and Zo is the output impedance of the PA. SWR meter1 should be
characterized to Zo.

I've agreed that SWR meter2s SWR reading (at point 3) will not
change as you change PAs impedance, but the SWR at point 1 definitely
WILL.

So, Does the SWR change as you change the source impedance? IT
DEPENDS ON WHERE YOU MEASURE IT! Right at the output of the source,
it will!

From Pozar's Microwave Engineering (Pg. 606):

Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

It should be easy to see from this well known equation that a
perfect 50 Ohm Zl will definitely change SWR as you change Zo away
from 50 ohms.

Slick

3454. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 17:37:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <cjr1kvs1n6q9h1nsbq0ci7ejv4980p0il5@4ax.com>
Source record: 110348

On Sun, 17 Aug 2003 17:14:21 GMT, Richard Clark <kb7qhc@comcast.net>
wrote:
>If you reduce the "ohms" to the MKS system both times.... Well I will
>leave that for further deliberation as some are sure to be surprised.
>:-)

Hi All,

from:
http://physics.nist.gov/cuu/Units/units.html

newton N m ï¿½ kg ï¿½ s^-2

volt V m^2 ï¿½ kg ï¿½ s^-3 ï¿½ A^-1

farad F m^-2 ï¿½ kg^-1 ï¿½ s^4 ï¿½ A^2

henry H m^2 ï¿½ kg ï¿½ s^-2 ï¿½ A^-2

ohm omega m^2 ï¿½ kg ï¿½ s^-3 ï¿½ A^-2

permittivity e0 farad per meter F/m

permeability ï¿½0 henry per meter H/m

for e0 (electric constant) from:
http://physics.nist.gov/cgi-bin/cuu/Value?ep0|search_for=universal_in!
8.854187817 ï¿½ 10^-12 ï¿½ F ï¿½ m^-1

for ï¿½0 (magnetic constant) from:
http://physics.nist.gov/cgi-bin/cuu/Value?mu0|search_for=universal_in!
12.566370614 ï¿½ 10^-7 ï¿½ N ï¿½ A^-2

Zc = (ï¿½0 / e0)^0.5

solving:

Zc = 376.730 ï¿½ ((N ï¿½ A^-2) / (F ï¿½ m^-1))^.5

expressed as products:

Zc = 376.730 ï¿½ (N ï¿½ A^-2 ï¿½ F^-1 ï¿½ m)^.5

substituting terms N and F:

Zc
=
376.730
ï¿½
((m ï¿½ kg ï¿½ s^-2 ï¿½ A^-2)

ï¿½
(m^2 ï¿½ kg ï¿½ s^-4 ï¿½ A^-2 * m))^.5

combining terms:

Zc = 376.730 ï¿½ (m^4 ï¿½ kg^2 ï¿½ s^-6 ï¿½ A^-4)^.5

root of terms:

Zc = 376.730 ï¿½ m^2 ï¿½ kg ï¿½ s^-3 ï¿½ A^-2

Which, if no one has noticed, is the same units for measuring the Ohm.

Zc = 376.730 ï¿½ ohms

That is, the Z of free space is expressed in exactly the same terms as a carbon composition resistor. Now given the genesis of this debate is that free space Z is somehow different from the expression of Radiation Resistance (e.g. 37 Ohms for a monopole) the only possible rhetorical objection is that free space is not lossy like a carbon resistor (non-dissipative). Well, neither is the Radiation Resistance! Even rhetoric fails. ;-)

An antenna is a structure that transforms Radiation Resistance into the Impedance of free space, as shown, and by definition. Both use identical MKS units, both are identical characteristics.

If someone has another method of deriving the Z of free space, they may well rest assured that it will eventually collapse to the same expression cited above. Offer your example for a similar tour through the fascinating world of Physics.

You can still call it a transducer though - or a thigamajig.

73's
Richard Clark, KB7QHC

3455. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 17:42:22 UTC
From: richardharrison@webtv.net
Message-ID: <26764-3F410FFE-404@storefull-2318.public.lawson.webtv.net>
Source record: 110351

Dr. Slick wrote:
"Therefore, the reflected voltage can never be greater than the input voltage for a passive network, and the reflection coeficient can never be greater than 1 for such a case."

A reflection coefficient implies that transmission lines long in terms of wavelength may qualify as passive networks.

At the open-circuit end of a long transmission line, current is interrupted by the open circuit. Having nowhere else to go, energy in the current wave must be accepted by the voltage wave which doubles on the spot. 2X the incident voltage is the sum of the voltage in the incident wave and the voltage in the new reflected wave as they are in-phase. The reflected voltage is no greater than the incident voltage. It is equal to the incident voltage. It`s the sum that doubles.

Best regards, Richard Harrison, KB5WZI

3456. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:18:08 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk262t5co091b9@corp.supernews.com>
Source record: 110349

H. Adam Stevens wrote:
>
> Matched impedances transfer maximum power.

You have to be a little careful with this. If you have a 50 ohm load and can vary the source impedance, what source impedance will result in maximum power transferred to the load?

> Now add a transmission line of a different impedance between the source and
> load.
> Consider what happens to a reflected wave when it gets back to the source.
> If the source is matched to the line, is the reflected wave dissipated as
> heat in the source?

Nope. I've shown this definitively a number of times on this newsgroup.

> What if the source's impedance is much lower than the line?
> Does it then begin to look like a short to the reflected wave?
> When all the impedances are matched the solution is just a simple traveling
> wave from source to load.

When the line impedance is matched to the load impedance, the solution is just a simple traveling wave from the source to the load, regardless of the source impedance.

> I like that.

Whatever floats your boat, as they say.

Roy Lewallen, W7EL

3457. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:18:17 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308181018.43592243@posting.google.com>
Source record: 110350

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhqp4t$e7f$1@titan.btinternet.com>...
> > >Magid has the most rigorous derivation of power and energy flow on
> > >transmission lines,
> ==========
> The following short question is adressed to all contributors to this
> newsgroup who feel impelled to bolster their lack of self-confidence by
> dragging in the chapter and verse of their favourite worshipped authors and
> Gurus, most of whom nobody has ever heard of and highly unlikely ever to get
> their hands on.
>
> How do you know that?

Gee, Reg, since you took that out of context, it seems a bit unfair.
Roy wrote it, and after the comma was, "I've seen." I don't know it,
but I'm willing to take Roy at his word on the matter.

Cheers,
Tom

3458. skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:19:56 UTC
From: Alfred Lorona <w6wqc@dslextreme.com>
Message-ID: <bhr5d7$2511a$1@ID-49117.news.uni-berlin.de>
Source record: 110352

Does anyone have access to Proc. I.R.E., 39, 767 (1951) by A.M. Clogston describing reduction of skin effect by a new method of laminated wire construction? Should make interesting reading.

AL

3459. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:22:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f411ab1_7@corp.newsgroups.com>
Source record: 110353

kd1@sympatico.ca wrote:
> In the shorted or open transmission line (from Magid, above), the
> analogue is two clumps of charge rushing towards each other and meeting
> at a voltage maximum (current zero). No charge crosses this point
> (obvious because the current is zero), but the charge coming from each
> direction builds to a voltage maximum and bounces away again (since
> like charge repels).

Unfortunately, the analogy is not a good one. In a transmission line,
there must exist a discontinuity to cause a reversal of momentum of
the waves. No such discontinuity exists so there is nothing to reverse
the momentum of the forward and reflected waves.

> Not possible since NO energy crosses the zero voltage and zero current
> points (unless you want to reject Pinst = Vist x Iinst).

Ramo, Whinnery, and Van Duzer disagree. They say that the power
reflection coefficient is equal to the reflected Poynting vector
divided by the forward Poynting vector which in this case would
be unity.

> The difficulty I encountered, while trying to understand, is that
> simultaneously holding the views that:
> 1) ghosting is caused by reflected energy flowing back along the line;
> and 2) Pinst = Vinst x Iinst required too much double think.

Life is tough all over. :-) What I am saying doesn't require double
think. :-)

> Although it seems unrelated, it is worthwhile to consider how to send
> information along a line without sending energy in the same direction.

Information transfer doesn't require energy? Methinks you are confusing
the carriers of the wave with the waves themselves. Zero carriers may
indeed cross the zero power point, but that does not prevent energy
from crossing the boundary. It just means that the energy crossing the
boundary must be equal in both directions.

One point. The power is not Vavg * Iavg. The power is Vavg*Iave*cos(theta)
All up and down a shorted lossless transmission line, theta is equal to
90 degrees. Around a voltage zero point, on one side the voltage is equal
to 0.00000001 volts and is 90 degrees out of phase with the current, i.e.
zero power. On the other side of the voltage zero point, the voltage is
equal to -0.00000001 volts and is 90 degrees out of phase with the current.
There are an infinite number of points where the voltage is 90 degrees out
of phase with the current. That's why the average power is always zero, not
because the average voltage is zero, but because the voltage is *ALWAYS* 90

degrees out of phase with the current in a lossless shorted feedline.

> When the source is not matched, it takes several round trips for the
> line to settle and ghosting is what you see.

Put an amplifier between the TV set and the feedline. Let the amplifier have as high an impedance as possible (insulated gate FET). That will cause reflections. Those reflections will still be there during steady-state and observing the ghosting will prove that, during steady-state, the ghosts have made one or more round trips back to the source where they are re-reflected (assuming a mismatched source or a Z0-match provided by a network).
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike ..." Albert Einstein

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3460. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:27:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f411bdf_7@corp.newsgroups.com>
Source record: 110356

H. Adam Stevens wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
>>Take a lesson from the power companies. They run coolest when their
>>output impedances are the lowest. :-)

> Until one breaker goes and the rest of the grid can't handle the load.
> ;^)))))))))) 73, H.

Incidentally, the argument that Thomas Edison used to prove that
power distribution systems would never be AC is that they would
burn themselves up trying to provide maximum power transfer. He
never conceived that they would be more interested in efficiency
than maximum power transfer. :-) So why can't we have a 95%
efficient RF power amplifier?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3461. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:27:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <dn32kv85badnou58pn8lev8kben6578mpn@4ax.com>
Source record: 110354

On 18 Aug 2003 09:37:59 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>Richard,
>
>If you do indeed need help, it's far more help than I can give you.
>My posting was not in jest, nor was it to poke fun at you or your
>postings. I was dead serious about it.
>
>Cheers,
>Tom
>

Hi Tom,

Yes, I have noticed the 30 cent jump in the cost of gas. ;-)

How about lunch at Lake Stevens then? I drove that for a couple of years too, back when your outfit was called HP. I worked in Larry Whatley and Nick Pendergas's group during the Marysville to L.S. move (to set a time frame). 1,000,000 lines of Pascal FFT code in that project. It was fun and I still have a lot of drawings of waveforms generated.

For those who are interested in the nuances of FFT's (and why their own implementation transforms lack resolution or dynamic range); my tenure provided me with a wealth of insight that is commonly unimplemented in current discussions here and generally in trade publications.

73's
Richard Clark, KB7QHC

3462. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:28:40 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk26mll0ofoaf4@corp.supernews.com>
Source record: 110355

Richard Clark wrote:
> . . .
> An antenna is a structure that transforms Radiation Resistance into
> the Impedance of free space, as shown, and by definition. Both use
> identical MKS units, both are identical characteristics.

Sorry, that's a demonstrably absurd assertion. Tam pointed a good example out a couple of days ago. Here's another -- The product of resistance and capacitance is time. Do we "transform" time by running a current through an RC circuit? There are countless other examples of different quantities having the same units -- it's not hard to find them.

> If someone has another method of deriving the Z of free space, they
> may well rest assured that it will eventually collapse to the same
> expression cited above. Offer your example for a similar tour through
> the fascinating world of Physics.

That was lots of fun, but what does it have to do with the subject under discussion.

> You can still call it a transducer though - or a thigamajig.

Gee, thanks!

Roy Lewallen, W7EL

3463. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:28:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f411c37$1_7@corp.newsgroups.com>
Source record: 110357

Reg Edwards wrote:
> The following short question is adressed to all contributors to this
> newsgroup who feel impelled to bolster their lack of self-confidence by
> dragging in the chapter and verse of their favourite worshipped authors and
> Gurus, most of whom nobody has ever heard of and highly unlikely ever to get
> their hands on.

You never heard of Ramo, the 'R' in TRW? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3464. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:45:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk27m059bbpuf0@corp.supernews.com>
Source record: 110358

1951? New method?

Sorry I don't have that paper. I came across the phenomenon quite by accident while developing delay line compensation networks at Tektronix about a dozen years ago, when I saw that Copperweld wire had noticeably less "dribble-up", as we called the characteristic shape of a step affected by skin effect, than solid copper wire. I concluded at that time that, although interesting and potentially very useful, it would require a range of conductivities that wouldn't be practical to manufacture -- which might be why I've never seen wire made in a way to intentionally reduce skin effect. The general scheme is to make the low frequency resistance higher, to match the high frequency resistance, by reducing the conductivity as you go deeper into the wire. I imagine what Clogston did was to rigorously derive what conductivity function would be required with respect to depth. Perhaps it would be practical to do over a narrower frequency range than I required (DC to 2 GHz in one case, DC to 10 in the other).

I'd be interested in seeing the paper also.

Roy Lewallen, W7EL

Alfred Lorona wrote:
> Does anyone have access to Proc. I.R.E., 39, 767 (1951) by A.M. Clogston
> describing reduction of skin effect by a new method of laminated wire
> construction? Should make interesting reading.
>
> AL
>
>

3465. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:48:56 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308181048.78bd862a@posting.google.com>
Source record: 110359

It can be convenient to define a reference impedance for S-paramters which is not the characteristic impedance of all the pieces of transmission line in the system, and keep the same reference impedance for all your work. For example, 50 ohms is commonly used, even though the system contains sections of microstrip of various impedances. But that's just a convenience for system analysis and design. If you want to try to assign even a little physical significance to reflection coefficient as used on a piece of line, you really should be using the line's characteristic impedance as the reference impedance. In addition, you should realize that it's going to make sense only in a linear, time-invariant system with steady-state excitation, with only one source of excitation (at a time). In addition, it is of course a function of frequency, just as the line's characteristic impedance is.

As others have noted, the magnitude of the reflection coefficient can be greater than unity with a passive line and load. Don't try to read too much physical significance into that, however.

Although the classic definition of (V)SWR involves knowing a voltage maximum and a voltage minimum on a line, I much prefer a definition in terms of forward and reverse voltages. That allows me to think about SWR at a point on a uniform line, and realize that it will be different at different points (because of line attenuation). In fact, the _definition_ I use for reflection coefficient is Er/Ef, or equivalently the ratio of electric fields (or magnetic fields) associated with forward and reverse waves (which then applies also to non-TEM waveguides). From that definition, it's straightforward to determine that rho = (Zl-Zo)/(Zl+Zo). And in keeping with the idea that you cannot have a voltage magnitude minimum less than zero, and because I believe it's more practical than the classic definition to have an SWR definition I can apply to any point on a line, my working SWR defintion is SWR = (|Ef|+|Er|)/(|(|Ef|-|Er|)|). This will align well with the usual formula that SWR = (1+|rho|)/(1-|rho|) when |rho|<=1, but it never gives you a negative SWR. If you can accept my definition of SWR, we can talk about SWR. If you can't, then I just won't talk with you about SWR, and limit the discussion to reflection coefficient which we presumably would be able to agree on.

Cheers,
Tom

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308152044.430405ad@posting.google.com>...
> From Pozar's Microwave Engineering (Pg. 606):

>
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>
> Where Zl is a purely real load impedance, and Zo is the
> purely real characteristic impedance reference.
>
> When you change Zo, you change the normalized center of the
> Smith Chart, and therefore the Reflection Coefficient and SWR, looking
> into the same load.
>
>
>
> Check it out...
>
>
> Slick

3466. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:56:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4122c1_7@corp.newsgroups.com>
Source record: 110361

kd1@sympatico.ca wrote:
> Do not be afraid to admit that you have changed the definition of P = V
> x I and therefore do not accept the standard definition.

Well, I was taking 'x' as a multiplication sign. Did you mean it as
a cross product sign? In any case, your Vinst is *NET* voltage and
your Iinst is *NET* current. We know that the feedline Z0 forces
Vfwd*Ifwd to be a constant value for a lossless line. We know that
the feedline Z0 forces Vref*Iref to be a constant value for a lossless
line. Vfwd+Vref is the *NET* voltage. Ifwd+Iref is the *NET* current.
Of course, their product, in any form, is going to be *NET* power.

> When I learned Pinst = Vinst x Iinst there were no caveats about how
> Pinst meant Pnet. Instantaneous energy is flowing or it is not. When
> Pinst is 0 for all time, then there is no energy flowing.

But RF energy cannot stand still so if it exists, it must necessarily
flow. If there is no energy flowing, then there is no RF. If there is
no RF, then your statements are irrelevant to this newsgroup. :-)

> To satisfy your theory (and minimize double think), you have had to
> change this to Pnet is zero to allow these cancelling powers to flow.
> So be it.

Your Vinst is *NET* voltage equal to Vfwd+Vref. Your Iinst is *NET*
current equal to Ifwd+Iref. Of course, their product will be *NET*
power. It cannot be anything else.

> True, sort of.

Ramo, Whinnery, and Van Duzer will be impressed that you "sort of"
agree with them. :-)

> It is not flowing all the way to the end of the
> line and then back. There is not enough time for this to happen (on a
> multi-wavelength line) since it changes direction every quarter cycle.

Just as I suspected, you are confusing the carriers of the energy with
the energy itself in the waves which moves at the speed of light. A
quarter cycle of time is very, very large compared to the speed of light.

Since water molecules cannot travel at the speed of sound in the ocean,
I assume you would argue that the energy in a tsunami wave cannot travel
at 500 mph, right?

> Not quite. Standing voltage and current waves (which are not waves in
> the normal sense) can be observed on the line. They can be measured with
> real voltage and current instruments; as can real energy flows with

> a real (V x I) power meter (but not a 'Bird watt' meter which
> is doing something quite different). It happens that if you assume the
> existence of forward and reverse voltage and current waves, mathematical
> functions can be derived that will produce the same distribution of
> voltage and current as observed on the line. This is extraordinarily
> convenient some analysis but does not mean that these assumed waves are
> real.

So please amaze me with a model that produces standing waves without actual
forward and reflected waves (in a single source, single feedline, single load
system).

> A mechanical analogue would be to look at a guy wire on a pole. You can
> analyze the forces as two vectors at 90 degrees (or any other angle of
> convenience!), but never make the mistake of assuming that there are
> actually two guy wires present. Just because it is mathematically
> convenient to assume the existence of two vectors does not mean they
> exist.
>
>>Nobody is rejecting it. If the lossless stub is one second long, it takes
>>two seconds of *POWER* to bring it to steady-state. If the stub contains
>>no moving energy, where did all those joules go?
>
> This energy is indeed stored in the stub. None of it moves across zero
> voltage or current boundaries.

What exactly, keeps energy from crossing the boundary? Here is an example.

source-------------50 ohm coax--------------+----1/4WL stub-----open

What mechanism of physics keeps energy from crossing the '+' point? Note
that there is no physical impedance discontinuity at point '+'.

This is what I (and Ayn Rand) call "primacy of consciousness" type thinking.
If you believe it strongly enough, your math model will dictate reality.
Something about being able to move mountains with the faith of a grain of
mustard seed. Something about being able to change the SWR by changing the
normalization of a Smith Chart on a sheet of paper. OTOH, I believe in
"primacy of existence", where reality dictates my math models. They may
be wrong but are as close to reality as I can get.

All you have to do to convince me that you are right is explain exactly
how standing waves can be sustained without a forward wave and a reflected
wave (in a system with a single source, single feedline, and single load).
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

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3467. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 18:57:47 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <J9adnSQvJLUuvNyiXTWJkA@crocker.com>
Source record: 110360

isn't this the theory behind Litz wire? the claims are that the woven
insulated strands reduce skin effect... a few sources:
http://www.mwswire.com/litzmain.htm
http://www.litz-wire.com/
http://www.allproducts.com.tw/sup2/sunshine/07.html
http://www.newenglandelectricwire.com/litzwire.shtml

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vk27m059bbpuf0@corp.supernews.com...
> 1951? New method?
>
> Sorry I don't have that paper. I came across the phenomenon quite by
> accident while developing delay line compensation networks at Tektronix
> about a dozen years ago, when I saw that Copperweld wire had noticeably
> less "dribble-up", as we called the characteristic shape of a step
> affected by skin effect, than solid copper wire. I concluded at that
> time that, although interesting and potentially very useful, it would
> require a range of conductivities that wouldn't be practical to
> manufacture -- which might be why I've never seen wire made in a way to
> intentionally reduce skin effect. The general scheme is to make the low
> frequency resistance higher, to match the high frequency resistance, by
> reducing the conductivity as you go deeper into the wire. I imagine what
> Clogston did was to rigorously derive what conductivity function would
> be required with respect to depth. Perhaps it would be practical to do
> over a narrower frequency range than I required (DC to 2 GHz in one
> case, DC to 10 in the other).
>
> I'd be interested in seeing the paper also.
>
> Roy Lewallen, W7EL
>
> Alfred Lorona wrote:
> > Does anyone have access to Proc. I.R.E., 39, 767 (1951) by A.M. Clogston
> > describing reduction of skin effect by a new method of laminated wire
> > construction? Should make interesting reading.
> >
> > AL
> >
> >
>

3468. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:02:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk28m2edrm5kb3@corp.supernews.com>
Source record: 110362

Reg Edwards wrote:
>>>Magid has the most rigorous derivation of power and energy flow on
>>>transmission lines,
>
> ==========
> The following short question is adressed to all contributors to this
> newsgroup who feel impelled to bolster their lack of self-confidence by
> dragging in the chapter and verse of their favourite worshipped authors and
> Gurus, most of whom nobody has ever heard of and highly unlikely ever to get
> their hands on.
>
> How do you know that?

I multiplied v(t) and i(t) in the forward and reverse waves and added them as a function of position to get the instantaneous power at each point along the line. Then I integrated to find the energy. As I mentioned in the part of the posting you excluded from your quote, I discovered that I hadn't evaluated the constant of integration. Somewhere along the line, I got sidetracked, and didn't want to get sucked into the interminable argument going on (which I see I've started up again -- my sincere apology to all), so didn't go back and clean it up. I had, however, reached the same conclusion as Magid, so apparently the constant was zero, or didn't impact the results. Magid follows the same process, although I haven't yet followed it through completely.

You've now heard of Magid, and you can very likely find a used copy on the Internet for the price of a couple of bottles of mediocre Pinot Noir in much less time than it would take to drink it (unless perhaps you're a speed drinker). You could get your hands on one with even less effort than I've taken -- I had to walk a few blocks, while you can do it all from your easy chair, only having to rise and face the Sun when the postman comes with your book.

Shoot, you can even get it from the same store where I got mine, if they have another copy just now. http://www.powellsbooks.com.

Roy Lewallen, W7EL
Certified Reg's Old Wife, Nitpicker, Busy-Body, Lacker of Self-Confidence, Worshipper of Authors and Gurus, and Other Notable Distinctions and Honours which are Bestowed Almost Daily

3469. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:03:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f41245b_7@corp.newsgroups.com>
Source record: 110363

Dr. Slick wrote:
> Therefore, the reflected voltage can never be greater than the
> input voltage for a passive network, and the reflection coefficient
> can never be greater than 1 for such a case.

What must be realized is that the s-parameter reflection coefficients
are *PHYSICAL* reflection coefficients while 'rho' is not a physical
reflection coefficient. s11 and 'rho' do not usually have the same
value. There are physical constraints on s11. The s11 physical
constraints do not apply to 'rho'. s11 is the square root of the
ratio of Pref to Pfwd under special conditions. 'rho' is the square
root of the ratio of Pref to Pfwd under all conditions. There's a
big difference. s11 does not usually equal 'rho' anywhere except
at a one-port load.
--
73, Cecil http://www.qsl.net/w5dxp

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3470. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:07:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f412542_7@corp.newsgroups.com>
Source record: 110365

Dr. Slick wrote:
> How can you have an S21 that is greater than unity with a passive
> network?

Please realize that the s-parameter coefficients are only one
of a long list of possible coefficients. For instance, in a two-
port system with reflections, s11 is usually not equal to
sqrt(Pref/Pfwd). Please define the specific coefficient about
which you guys are arguing.
--
73, Cecil http://www.qsl.net/w5dxp

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3471. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:09:59 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308181109.6febe4f9@posting.google.com>
Source record: 110364

Roy Lewallen <w7el@eznec.com> wrote in message news:<vjrnt7fm9o25da@corp.supernews.com>...
...
> I omit Tom from this second list only because I haven't yet
> met him in person and otherwise haven't gotten any hints of his age --
> but I'll take a gamble and spot him 10 years at least.

Well, you can find archived postings from me from 10 years ago that I think demonstrate that I understood how SWR meters actually work back then. And you could probably find my name on a patent that would give you a clue that I was at least starting to learn a little something about transmission lines in 1969 or so, though I readily admit to not worrying about "reflection coefficient" back then. Just hacked through the raw, unabridged transmission line equations. I suppose Reg would think that a better way to learn the stuff anyway. I had bought the King, Mimno and Wing book back then, but didn't get around to actually reading it till much, much later.

Cheers,
Tom

3472. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:13:39 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1t62kv8illrca3u7cs210v6d64lccdpm7j@4ax.com>
Source record: 110366

On Mon, 18 Aug 2003 11:28:40 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>> . . .
>> An antenna is a structure that transforms Radiation Resistance into
>> the Impedance of free space, as shown, and by definition. Both use
>> identical MKS units, both are identical characteristics.
>
>Sorry, that's a demonstrably absurd assertion.

Hi Roy,

>>although the feedpoint impedance is an impedance with the units of ohms,
>>and the impedance of a plane wave in free space also has the units of ohms,
>>they're not the same thing.

So, how do the "ohms" of free space differ from the "ohms" of a
quarter wave monopole's Radiation Resistance?

The demonstrables you offer do not enlighten us in what physical
constants these unique terms of your usage diverge from those in the
MKS system. As I pointed out in my posting, whatever derivation for
the characteristic Z of free space is, it must ultimately devolve to
the identical expression for the common Ohm.

I would offer by way of caution that the expression
Zc = (ï¿½0 / e0)^0.5
where ï¿½0 is expressed in Henrys per meter and
where e0 is expressed in Farads per meter;
that that, too, arrives at the same Ohms employed by carbon resistors
and Radiation Resistance.

This is much like trying to compare miles per gallon and kilometers
per liter. When push comes to shove, the reduction to MKS will reveal
that the same container of gas will get you down the same stretch of
asphalt the same distance no matter what mix of terms you substitute
for liquid volume and length. This goes to include offbeat
descriptive terms like miles per liter; kilometers per gallon; or
furlongs per hogshead for that identical container of gas. Solutions
of proportionality are not unique physical constants.

73's
Richard Clark, KB7QHC

3473. Re: Length of Coax Affecting Incident Power to Meter?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:17:35 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4127b4_7@corp.newsgroups.com>
Source record: 110367

Dr. Slick wrote:
> From Pozar's Microwave Engineering (Pg. 606):
>
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

Unfortunately, the reflection coefficient is also defined as:
Sqrt(Pref/Pfwd) which is usually only equal to your equation
in a one-port network. For a two-port network, those two
values of reflection coefficient are not usually equal. Better
define things better. For a two-port network, Z1 is NOT the
physical Z1. It is the apparent (virtual) Z1 calculated from
the total voltage to total current ratio which is often
different from the physical Z1 above.
--
73, Cecil http://www.qsl.net/w5dxp

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3474. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:20:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f412870_7@corp.newsgroups.com>
Source record: 110368

Richard Clark wrote:
> You can still call it a transducer though - or a thigamajig.

Such a sophisticated concept deserves better. I suggest

"Triactuatedmulticomplicator" or TAMC for short.
--
73, Cecil http://www.qsl.net/w5dxp

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3475. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:31:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f412ae8_7@corp.newsgroups.com>
Source record: 110369

Roy Lewallen wrote:

> H. Adam Stevens wrote:
>> If the source is matched to the line, is the reflected wave dissipated as
>> heat in the source?
>
> Nope. I've shown this definitively a number of times on this newsgroup.

Yep, by assuming something that is true only by definition. :-)
If the source is hidden in a black box and includes a circulator
with load, the reflected wave *IS* dissipated as heat in the
source. For some phases of reflected energy, the dissipation does
increase. You say it is because of the mismatch but the mismatch
is because of the reflected waves. So which came first, the mismatch
or the reflected waves? I suggest that the mismatch will not happen
until the reflected waves arrive. Try it with a one second long
transmission line.
--
73, Cecil http://www.qsl.net/w5dxp

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3476. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:48:43 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f412efb_7@corp.newsgroups.com>
Source record: 110371

Roy Lewallen wrote:
> You've now heard of Magid, ...

Unfortunately, every author and guru that I have ever encountered,
at some point, confuses cause and effect. I'm sorry I can't get over
to the Texas A&M library right now but Magid seems to believe that
standing waves can be sustained without a forward wave and a reflected
wave. Does he explain how that is possible? In all honesty, it is an easy
mistake to make. Even Ramo, Whinnery, and Van Duzer make the same
mistake. Not exactly a quote but: The reflection coefficient is caused
by the ratio of the reflected power to the forward power. Therefore,
the ratio of the reflected power to the forward power is caused by
the reflection coefficient. "Logic" like this seems to abound in
the field of transmission lines.
--
73, Cecil http://www.qsl.net/w5dxp

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3477. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 19:52:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk2bjr6iqke6a8@corp.supernews.com>
Source record: 110370

Richard Clark wrote:
> . . .
> So, how do the "ohms" of free space differ from the "ohms" of a
> quarter wave monopole's Radiation Resistance?
> . . .

As I and several others have recently said several times, the "ohms" of free space represent a ratio of E field to H field of a plane wave or, more fundamentally, the square root of the ratio of the medium's permeability to its permittivity. The "ohms" of a quarter wave monopole's radiation resistance represent the ratio of a voltage to a current. An E field is not a voltage, and an H field is not a current. They are different forms of energy, related by Maxwell's equations.

Roy Lewallen, W7EL

3478. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 20:14:22 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <FeycnSl5Oeo_rtyiXTWJhA@comcast.com>
Source record: 110372

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308180913.63255603@posting.google.com...
>>
> If you measure the SWR at point 1, you let Z1 (Zload) be 50 ohms,
> and Zo is the output impedance of the PA. SWR meter1 should be
> characterized to Zo.
> snip
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>
> It should be easy to see from this well known equation that a
> perfect 50 Ohm Zl will definitely change SWR as you change Zo away
> from 50 ohms.
>
>
> Slick

Looking at a book. Has the same equation, only thing is that Zo is the
impedance of the *coax*.

Tam/WB2TT

3479. HF antenna assistance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 20:15:50 UTC
From: Jim <mirage@oasis.co.uk>
Message-ID: <3f41343e$1_1@mk-nntp-2.news.uk.tiscali.com>
Source record: 110373

Hi folks

Although licensed for over 12 years as a G7... converting 3 years ago to a M0...callsign (with 12 wpm cw), personal circumstances have not until now permitted me to get started on HF.

Problem now is antennas (and indirectly xyl).

Have garden to rear of property, narrow but 80' long from house to boundary. A further 25' is available along side of property, rear to front, but approx 6' proximity to house wall.
Height of proposed feedpoint approx 17' 6" ; height at boundary 12'

Would initially like to cover 14 - 7 and 3.5 MHz with a coax fed horizontal wire dipole of approx 66', and if carefully cut would theoretically get full - 1/2 and 1/4 wave respectively for these bands. An MFJ-949E Atu is available. No garden or roof space for any vertical metal!

That's the idea, but I would welcome constructive comment, especially in the area of feedpoint impedances and swr.

My thanks in anticipation. . . .
Jim

Regrettably, due to shared facilities, I am unable to accept incoming email, so posts to newsgroup pse.

3480. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 20:31:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <16d2kv06i8dfojgg9o8828epa1954khrhv@4ax.com>
Source record: 110374

On Mon, 18 Aug 2003 12:52:28 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Richard Clark wrote:
>> . . .
>> So, how do the "ohms" of free space differ from the "ohms" of a
>> quarter wave monopole's Radiation Resistance?
>> . . .
>
>As I and several others have recently said several times, the "ohms" of
>free space represent a ratio of E field to H field of a plane wave or,
>more fundamentally, the square root of the ratio of the medium's
>permeability to its permittivity. The "ohms" of a quarter wave
>monopole's radiation resistance represent the ratio of a voltage to a
>current. An E field is not a voltage, and an H field is not a current.
>They are different forms of energy, related by Maxwell's equations.
>
>Roy Lewallen, W7EL
>

Hi Roy,

Physical constants do not betray physical measurements. The "ohms"
are identical in practice and theory. They are demonstrable in the
Standards laboratory. NIST describes all this at the links offered
and they do not equivocate nor banter terms casually. For any
Professional Engineer, they carry the force of law as the only
authoritative source for definition. I don't expect that standard to
be observed in this forum, as this is just hobby stuff and lord knows
the number of dictionaries that are already hauled off the shelf to
engage debate.

But this is repetition and evidence has been offered. As you have
revealed no new information that changes these relationships, nor have
you revealed any other representation of free space characteristic Z
in terms not already part of the MKS/SI Canon, then I am satisfied
that I will not change your mind.

73's
Richard Clark, KB7QHC

3481. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 20:38:31 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <std2kvsl9kssb0scl21j8h075em3qqua5b@4ax.com>
Source record: 110375

On Mon, 18 Aug 2003 14:20:49 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> You can still call it a transducer though - or a thigamajig.
>
>Such a sophisticated concept deserves better. I suggest
>
>"Triactuatedmulticomplicator" or TAMC for short.

Hi Cecil,

Given the high dudgeon that attends yet another inflammatory subject,
I would offer that antenna is enough - sheesh, didn't someone ask why
all the difficulty? It's not rocket surgery after all. :-)

73's
Richard Clark, KB7QHC

3482. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 20:48:14 UTC
From: tdonaly@aol.com
Message-ID: <20030818164814.06584.00000162@mb-m28.aol.com>
Source record: 110376

```
>
>
>"Dr. Slick" <radio913@aol.com> wrote in message
>news:1d15af91.0308180913.63255603@posting.google.com...
>>>
>> If you measure the SWR at point 1, you let Z1 (Zload) be 50 ohms,
>> and Zo is the output impedance of the PA. SWR meter1 should be
>> characterized to Zo.
>> snip
>> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>>
>> It should be easy to see from this well known equation that a
>> perfect 50 Ohm Zl will definitely change SWR as you change Zo away
>> from 50 ohms.
>>
>>
>> Slick
>
>Looking at a book. Has the same equation, only thing is that Zo is the
>impedance of the *coax*.
>
>Tam/WB2TT
>

Dang it, Tam, you just had to tell him! I was just having a good laugh when
you
had to go and spoil it.
73,
Tom Donaly, KA6RUH
```

3483. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 21:16:11 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308181316.3b1088bc@posting.google.com>
Source record: 110377

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f4122c1_7@corp.newsgroups.com>...
...
> We know that the feedline Z0 forces
> Vfwd*Ifwd to be a constant value for a lossless line. We know that
> the feedline Z0 forces Vref*Iref to be a constant value for a lossless
> line.
...

I trust I haven't taken that too far out of context. And...I hope you
meant that Zo = Vf/If = -Vr/Ir, or something equivalent. Surely the
product of Vf and If is independent of Zo.

Cheers,
Tom

3484. Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 21:41:16 UTC
From: Michael Efseaff <beads@snowline.net>
Message-ID: <VcmdnVk7Uq_u2tyiXTWJhA@vel.net>
Source record: 110378

I am proposing putting up a flat top 75 meter dipole at a height of 48'. I would like to use the antenna primarily on both the 75 and 40 meter bands but not always. The antenna will have to be located almost 300 feet from the shack so I intend to use home brew 500 ohm line made with #12 solid copper conductors. The SWR on such a line will be quite high on both 75 and 40 and be all over the map on other bands. How about 160? My question is, what kind of transmission line losses will be present with SWR's up to 10 to 1 or even greater? I have my trusty Johnson Viking Kilowatt Matchbox to do the tuning in the shack.
My present antenna is a 60' flat top dipole over the shack at an average height of 34'. There is approx. 70' of 450 ohm feed line going to the tuner. The Match Box loads the antenna on all bands from 75 thru 10 meters with excellent results and good feed line balance. I had to modify the Match Box to get it to 75 by utilizing the entire link and adding series tuning to it. Eznec reports an swr of over 100 to 1 on such an antenna on 75 but it gets out well. The #18 conductors have got to have hot spots with my 200 watts of output power! So far I haven't set anything on fire!

Comments Please, Mike K6JSY

3485. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 21:44:54 UTC
From: Sylvan Butler <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbk2i6m.tmr.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 110379

On 15 Aug 2003 10:08:30 -0700, Javier Henderson <javier@KJSL.COM> wrote:
> Man, a simple question I asked, and it's still being debated!

Yup, every time.

> I'll reserve my next question, "Can I store a battery on a bare
> concrete floor", for another slow day.

Will that be before or after asking about which editor to write
web/text/??? documents?

sdb

--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral busybodies. The robber baron's cruelty may sometimes sleep, his cupidity may at some point be satiated; but those who torment us for our own good will torment us without end, for they do so with the approval of their consciences. -- C. S. Lewis

3486. looking for mag mount

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 21:50:48 UTC
From: Phil Schuman <pschuman_NO_SPAM_ME@interserv.com>
Message-ID: <bhrhn5$l55$1@bob.news.rcn.net>
Source record: 110380

hi -
Dragged out an old Yaesu mobile dual-bander (2m + 450)
to show my son -
Popped it into the car, attached the only mag mount I had
which was for 2m - and we ran errands,
and chatted on one of the repeaters.
I'd like to get another mag mount and cut it for 448,
but all the local stores from 25 yrs ago are gone :)

Where can I find an inexpensive mag mount
with a PL-259 - for the other 448 coax connector -

tnx - Phil - WA9TKA -

3487. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 21:56:50 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhri32$6vr$1@hercules.btinternet.com>
Source record: 110381

Take an ordinary round solid conductor. For well known reasons at alternating currents it will have a higher resistance per unit length that at DC.

Now, if a round hole is drilled down the centre of the conductor, ie., its highly-conductive center is removed, the AC resistance will be REDUCED. There are, of course, better ways of producing tubes.

The effect is at a maximum when the wall thickness of the tube is about 1.6 times skin depth in the material, ie., when an appreciable fraction of the current flows on the internal surface. The reduction in resistance is only a few percent and for a conductor of given dimensions it affects only the lower frequencies.

It has something to do with internal inductance and the relative phases of the inside and outside surface currents.

It is likely the effect is considered only when transmission line efficiency is of overriding importance, perhaps at power frequencies, the 'hole' in the conductor's center being occupied by a steel tensile strength member.

My one and only reference book is Robert Chipman's "Theory and Problems of Transmission Lines", 1968, McGraw Hill, where the effect is described in a little more graphical detail than above. But the likelihood of obtaining a copy of this book is remote
----
Reg, G4FGQ

3488. HB9CV doesn't tune up

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 23:26:15 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <rgd0b.918$tv1.8352796@news-text.cableinet.net>
Source record: 110382

At the recent FRARS radio rally I bough a cheap HB9CV antenna for 6m (there were no 3 element yagis on sale). When I got it home I noticed that a hole had worn in the plastic and that some bolts and spacers (for the gamma match elements - if that is the right description) had fallen out. My only concern was for the spacers to hold the "thin rods" away from the main elements. The supplier wasn't particularly helpful. I have a suspicion that the spacing may be critical, but the supplier didn't seem knowledgeable.

The construction didn't strike me as being particularly good and it certainly had a workshop/homebrew feel about it, particularly since some pencil marks still were left on the boom near the holes. But it was fairly cheap.

I found some spacers which made the thin tubes parallel with the elements, although the gaps were not quite the same. It was not possible to adjust the gaps. When raised around 4m from the ground the SWR was about 1.5:1 with the beehive trimmer cap screwed all the way in.

I am interested in how I can tweak the antenna to get a better SWR reading. Am I right in thinking that the gaps between the thin rods (name please!) and the elements is important and if so what is the effect of too big, or too small, or an asymmetric gap?

Also I was told that this antenna was about the same gain as a 3 element yagi, possibly a little better. Was this just sales talk?

Regardless it does seem to work and I had my first QSOs using this antenna. Since I am a QRP operator I would like to get the best out of the antenna possible.

regards...

--Gary (M1GRY)

3489. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-18 23:38:24 UTC
From: Dave Bushong <dbushong@adelphia.net>
Message-ID: <Qrd0b.3843$Nc.2566622@news1.news.adelphia.net>
Source record: 110383

Hmmm. A dipole *does* have gain over an isotropic radiator in some directions, but not in others. That is by definition.

I think you guys are confusing "gain in any direction" with "gain in all directions". If you put 100 watts into a 100% efficient antenna, you will put 100 watts into the air. If you put it in all directions (isotropic), it's 100 watts. If you put it into a dipole, it's 100 watts. A dipole has a non-isotropic pattern, which means that some directions in 3D space get less signal than others.

I like passionate discussions about antennas, but it helps to have some facts. It seems like Mike is wrong here.

All the best, and 73,
Dave
KZ1O

--
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==========

WB3FUP (Mike Hall) wrote:

> A dipole has a gain of 3 dbi {DBI} decibels over an isotropic radiator in
> free space. As to the accuracy of EZNEC take that up with the author, Roy
> W. Lewallen often posts here regularly, and never with your
> "knowledgeable?" disdain..
>
> Now back to the antenna at hand:
> [...]

3490. Re: FM dipole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 00:08:53 UTC
From: Dave Bushong <dbushong@adelphia.net>
Message-ID: <pUd0b.3853$Nc.2573035@news1.news.adelphia.net>
Source record: 110384

Hi, Mr. T

You could always go to www.google.com and enter something like

build fm antenna

I know it works, because I did that, and I got a hundred good answers.

I'm glad we can help you use the internet. I'm assuming that you know
how to use pliers, wire cutters, etc. If not, go to www.google.com and
put this in: "learn to use the internet before you ask for help".

All the best, and I pity the fool who makes me learn something myself,
Dave

Mr. T wrote:

> I am a novice when it comes to antennas. Could someone point me to sources
> of info about buying or making an outdoor fm(88Mhz-108Mhz) antenna?
> Thanks in advance
>
>

--
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3491. Re: HV Vertical ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 00:17:20 UTC
From: Bill Mahaffey <w6eet@cox.net>
Message-ID: <0001HW.BB66BAA0000863B1F0284600@news.west.cox.net>
Source record: 110385

On Mon, 18 Aug 2003 4:32:49 -0700, MAS wrote
(in message <AP20b.350$tS2.64394@newsfep2-win.server.ntli.net>):

> What's your view on the best HF multi band vertical for me.
>
> I know the fact I am looking at multi band is a compromise with respect to
> performance but who can afford mono band antennas for all bands ;-)
>
> I am able to mount something on a pole putting the base of the antenna about
> 10 - 20 ft above ground.
>
> I was thinking about the Cushcraft R6000 but I am open to ideas.
>
> Cheers..
>
>

Have you considered homebrew?

I have about 30 ft of tubing on a twenty ft mast with
6 30 feet long radials and I feed it with twin lead (actually
600 ohm ladder line) and it works great.

Much cheaper then commercial and I would bet it
works much better. I have worked dx on all hf bands
except 160 with it.

But....radials and transmatch are required.

73,
bill w6eet

3492. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 00:29:46 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <_be0b.184441$Ho3.25313@sccrnsc03>
Source record: 110386

Assuming a VSWR of 10 to 1, reasonable for 80 meters, and assuming line losses are negligible for open wire tuned feeders, also reasonable for a first approximation, your line losses will be about -3 dB.

EZNEC indicates that you will also have a VSWR of about 10:1 on 40 meters.

Conclusion: you will experience about -3 dB loss [1/2 S unit] on both 75 and 40 when fed with 500 ohm line.

Deacon Dave, W1MCE
+ + +

Michael Efseaff wrote:

> I am proposing putting up a flat top 75 meter dipole at a height of 48'.
> I would like to use the antenna primarily on both the 75 and 40 meter bands
> but not always. The antenna will have to be located almost 300 feet from
> the shack so I intend to use home brew 500 ohm line made with #12 solid
> copper conductors. The SWR on such a line will be quite high on both 75 and
> 40 and be all over the map on other bands. How about 160? My question is,
> what kind of transmission line losses will be present with SWR's up to 10 to
> 1 or even greater? I have my trusty Johnson Viking Kilowatt Matchbox to do
> the tuning in the shack.
> My present antenna is a 60' flat top dipole over the shack at an average
> height of 34'. There is approx. 70' of 450 ohm feed line going to the
> tuner. The Match Box loads the antenna on all bands from 75 thru 10 meters
> with excellent results and good feed line balance. I had to modify the
> Match Box to get it to 75 by utilizing the entire link and adding series
> tuning to it. Eznec reports an swr of over 100 to 1 on such an antenna on
> 75 but it gets out well. The #18 conductors have got to have hot spots with
> my 200 watts of output power! So far I haven't set anything on fire!
>
> Comments Please, Mike K6JSY
>
>

3493. Re: FM dipole antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 00:30:09 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <bhrr2k$2ivse$1@ID-134747.news.uni-berlin.de>
Source record: 110387

Unless you already have the wire and the tools you will be better off going
to Radio Shack and buy one premade. I have the wire, tools, and knowledge
to calculate the roper length. I buy mine ad Radio Shack for less than
$5.00.

--
73 es cul

wb3fup
a Salty Bear

"Dave Bushong" <dbushong@adelphia.net> wrote in message
news:pUd0b.3853$Nc.2573035@news1.news.adelphia.net...
> Hi, Mr. T
>
> You could always go to www.google.com and enter something like
>
> build fm antenna
>
> I know it works, because I did that, and I got a hundred good answers.
>
> I'm glad we can help you use the internet. I'm assuming that you know
> how to use pliers, wire cutters, etc. If not, go to www.google.com and
> put this in: "learn to use the internet before you ask for help".
>
> All the best, and I pity the fool who makes me learn something myself,
> Dave
>
> Mr. T wrote:
>
> > I am a novice when it comes to antennas. Could someone point me to
sources
> > of info about buying or making an outdoor fm(88Mhz-108Mhz) antenna?
> > Thanks in advance
> >
> >
>
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> message will be deleted, unread)

>

3494. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 00:40:04 UTC
From: Russ <carlzomer@hotmail.com>
Message-ID: <8es2kvk3hv3a4i6nurtlgrma9d68jtfqjo@4ax.com>
Source record: 110388

On Mon, 18 Aug 2003 15:44:54 -0600, Sylvan Butler
<Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid> wrote:

>On 15 Aug 2003 10:08:30 -0700, Javier Henderson <javier@KJSL.COM> wrote:
>> Man, a simple question I asked, and it's still being debated!
>
>Yup, every time.
>
>> I'll reserve my next question, "Can I store a battery on a bare
>> concrete floor", for another slow day.
>
>Will that be before or after asking about which editor to write
>web/text/??? documents?
>
>sdb

ed or ex. B^)

Russ

3495. Re: HV Vertical ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 01:01:29 UTC
From: "Michael Weissman, M.D." <mikew@removemecloud9.net>
Message-ID: <vk2tnafabj4hf3@corp.supernews.com>
Source record: 110389

I've had good success with the GAP Challenger over the past 15 months.

Excellent for DX.

So, so for close in scheds.

Mike

MAS wrote:
> What's your view on the best HF multi band vertical for me.
>
> I know the fact I am looking at multi band is a compromise with respect to
> performance but who can afford mono band antennas for all bands ;-)
>
> I am able to mount something on a pole putting the base of the antenna about
> 10 - 20 ft above ground.
>
> I was thinking about the Cushcraft R6000 but I am open to ideas.
>
> Cheers..
>
>

3496. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 01:01:36 UTC
From: Owen Duffy <owen@oda.com.au>
Message-ID: <3F4176F0.1020906@oda.com.au>
Source record: 110390

Michael Efseaff wrote:
> I am proposing putting up a flat top 75 meter dipole at a height of 48'.
> I would like to use the antenna primarily on both the 75 and 40 meter bands
> but not always. The antenna will have to be located almost 300 feet from
> the shack so I intend to use home brew 500 ohm line made with #12 solid
> copper conductors. The SWR on such a line will be quite high on both 75 and
> 40 and be all over the map on other bands. How about 160? My question is,
> what kind of transmission line losses will be present with SWR's up to 10 to
> 1 or even greater? I have my trusty Johnson Viking Kilowatt Matchbox to do
> the tuning in the shack.

You might expect matched line loss of around 0.1dB for 300ft of that type of line in dry conditions. The additional loss due to a VSWR of 10 would be around 0.4dB. The additional loss due to VSWR is probably quite manageable in this case up to about 25:1 where it would be 1dB. Some will argue, you could stand an S-point or two... you choose.

There will be losses in the tuner additional to the above, so factor those into your loss budget.

> My present antenna is a 60' flat top dipole over the shack at an average
> height of 34'. There is approx. 70' of 450 ohm feed line going to the
> tuner. The Match Box loads the antenna on all bands from 75 thru 10 meters
> with excellent results and good feed line balance. I had to modify the
> Match Box to get it to 75 by utilizing the entire link and adding series
> tuning to it. Eznec reports an swr of over 100 to 1 on such an antenna on

You have implied VSWR=100 on the 450 ohm line that you are using, or are you quoting the VSWR that would occur on a 50 ohm line?

> 75 but it gets out well. The #18 conductors have got to have hot spots with
> my 200 watts of output power! So far I haven't set anything on fire!
>
> Comments Please, Mike K6JSY
>
>

3497. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 01:29:39 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vk2vhsqqrd8nb3@corp.supernews.com>
Source record: 110391

Aren't the switching amps used in AM broadcast highly efficient?
Do folks still use class C amps in FM service?
(It's been decades)
H.
NQ5H

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f411bdf_7@corp.newsgroups.com...
> H. Adam Stevens wrote:
>
> > "W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
> >>Take a lesson from the power companies. They run coolest when their
> >>output impedances are the lowest. :-)
>
> > Until one breaker goes and the rest of the grid can't handle the load.
> > ;^)))))))))) 73, H.
>
> Incidentally, the argument that Thomas Edison used to prove that
> power distribution systems would never be AC is that they would
> burn themselves up trying to provide maximum power transfer. He
> never conceived that they would be more interested in efficiency
> than maximum power transfer. :-) So why can't we have a 95%
> efficient RF power amplifier?
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3498. Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 01:41:07 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308181741.3691b6b5@posting.google.com>
Source record: 110392

(Food for thought for the relatively new folk here...and perhaps even some old-timers.)

Consider a system (linear, time-invariant, steady-state excitation and all that jazz) in which a source delivers 1 watt to a load composed of a uniform transmission line terminated in a load. Further, this line has some loss and the frequency is low enough that its characteristic impedance is noticably reactive, just as Reg has pointed out. Call it Ro-jXo. What should the impedance of the load be to maximize power dissipated in the load? Is the answer a function of anything else not yet stated?

Cheers,
Tom

3499. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 01:47:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f41832b_7@corp.newsgroups.com>
Source record: 110393

Tom Bruhns wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>We know that the feedline Z0 forces
>>Vfwd*Ifwd to be a constant value for a lossless line. We know that
>>the feedline Z0 forces Vref*Iref to be a constant value for a lossless
>>line.
>
> I trust I haven't taken that too far out of context. And...I hope you
> meant that Zo = Vf/If = -Vr/Ir, or something equivalent. Surely the
> product of Vf and If is independent of Zo.

Yep, sorry, brain fart. Should have been a '/' instead of a '*'.
The point was (is) that (Vfwd + Vref) can be zero but in a feedline
with reflections Vfwd and Vref cannot be zero. Same for the component
currents.
--
73, Cecil http://www.qsl.net/w5dxp

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3500. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 01:53:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f41846a_7@corp.newsgroups.com>
Source record: 110394

Michael Efseaff wrote:

> I am proposing putting up a flat top 75 meter dipole at a height of 48'.
> I would like to use the antenna primarily on both the 75 and 40 meter bands
> but not always. The antenna will have to be located almost 300 feet from
> the shack so I intend to use home brew 500 ohm line made with #12 solid
> copper conductors. The SWR on such a line will be quite high on both 75 and
> 40 and be all over the map on other bands. How about 160?

Nope, the SWR will not be "quite high" on 75 and 40 or anything higher in
frequency. It will be "quite high" on 160. I use such an antenna for the
HF bands and the SWR on the 450 ohm ladder-line never goes higher than
15:1 which is acceptable because 450/15 = 30 ohms. Take a look at my
all-HF-band dipole on my web page.
--
73, Cecil http://www.qsl.net/w5dxp

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3501. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 01:59:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4185cd_7@corp.newsgroups.com>
Source record: 110395

Dave Shrader wrote:
> Assuming a VSWR of 10 to 1, reasonable for 80 meters, and assuming line
> losses are negligible for open wire tuned feeders, also reasonable for a
> first approximation, your line losses will be about -3 dB.

You assume line losses are negligible and then say line losses will be
about -3dB? Exactly where are those losses occurring?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3502. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:20:50 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181820.28f41a8f@posting.google.com>
Source record: 110396

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f41245b_7@corp.newsgroups.com>...
>
> What must be realized is that the s-parameter reflection coefficients
> are *PHYSICAL* reflection coefficients while 'rho' is not a physical
> reflection coefficient. s11 and 'rho' do not usually have the same
> value. There are physical constraints on s11. The s11 physical
> constraints do not apply to 'rho'. s11 is the square root of the
> ratio of Pref to Pfwd under special conditions. 'rho' is the square
> root of the ratio of Pref to Pfwd under all conditions. There's a
> big difference. s11 does not usually equal 'rho' anywhere except
> at a one-port load.

[s11]=rho, rho being just the magnitude of the s11.

Slick

3503. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:24:22 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181824.5cb1a6a6@posting.google.com>
Source record: 110397

"George, W5YR" <w5yr@att.net> wrote in message
news:<VgU%a.102840$3o3.7190262@bgtnsc05-news.ops.worldnet.att.net>...
> Roy, Chipman on page 138 of "Theory and Problems of Transmission Lines"
> makes the statement
>
> " The conclusion is somewhat surprising, though inescapable, that a
> transmission line can be terminated with a reflection coefficient whose
> magnitude is as great as 2.41 without there being any implication that the
> power level of the reflected wave is greater than that of the incident wave.

How did he set this up? How did he measure this excactly? How
can you get a reflection coefficient greater than one into a passive
network? I'd really like to know.

Slick

3504. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:28:22 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181828.6962cf7d@posting.google.com>
Source record: 110398

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308181048.78bd862a@posting.google.com>...
>
> As others have noted, the magnitude of the reflection coefficient can
> be greater than unity with a passive line and load. Don't try to read
> too much physical significance into that, however.
>

That's impossible, unless you have a free source of energy, in
which case you should send me the schematic! :)

Do you believe everything people tell you? How did they set this
up? I don't think i will get an answer to this.

Slick

3505. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:37:50 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181837.48754a97@posting.google.com>
Source record: 110399

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<26764-3F410FFE-404@storefull-2318.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "Therefore, the reflected voltage can never be greater than the input
> voltage for a passive network, and the reflection coeficient can never
> be greater than 1 for such a case."
>
> A reflection coefficient implies that transmission lines long in terms
> of wavelength may qualify as passive networks.
>
> At the open-circuit end of a long transmission line, current is
> interrupted by the open circuit. Having nowhere else to go, energy in
> the current wave must be accepted by the voltage wave which doubles on
> the spot. 2X the incident voltage is the sum of the voltage in the
> incident wave and the voltage in the new reflected wave as they are
> in-phase. The reflected voltage is no greater than the incident voltage.
> It is equal to the incident voltage. It`s the sum that doubles.
>
> Best regards, Richard Harrison, KB5WZI

Right, but we aren't talking about the sum of the voltages, but
the calculated RMS voltage of forward and reflected waves, which are
separated by the directivity of your SWR meter.

"Therefore, the reflected voltage can never be greater than the
input
voltage for a passive network, and the reflection coeficient can never
be greater than 1 for such a case."

Please show us a set-up that will measure otherwise.

Slick

3506. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:44:07 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181844.79528c1e@posting.google.com>
Source record: 110400

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030818164814.06584.00000162@mb-m28.aol.com>...
>> >
> >Looking at a book. Has the same equation, only thing is that Zo is the
> >impedance of the *coax*.
> >
> >Tam/WB2TT
> >
>
> Dang it, Tam, you just had to tell him! I was just having a good laugh when
> you
> had to go and spoil it.
>

Zo doesn't have to be the coax impedance. It can be any impedance
you want. What about interstage-matching networks between FETs? Do
you think there are no reflections there? Should you attempt to match
impedances there? I would think so.

let me rephrase:

PA--+SWR meter1+--50ohm line--+SWR meter2+--50ohm line--+50 ohm
(same Z as PA) (50 Ohms) dummy
load
1 2 3

If you measure the SWR at point 1, you let Z1 (Zload) be 50 ohms,
and Zo is the output impedance of the PA. SWR meter1 should be
characterized to Zo.

I've agreed that SWR meter2s SWR reading (at point 3) will not
change as you change PAs impedance, but the SWR at point 1 definitely
WILL.

So, Does the SWR change as you change the source impedance? IT
DEPENDS ON WHERE YOU MEASURE IT! Right at the output of the source,
it will!

From Pozar's Microwave Engineering (Pg. 606):

Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

It should be easy to see from this well known equation that a
perfect 50 Ohm Zl will definitely change SWR as you change Zo away
from 50 ohms.

Slick

3507. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:44:32 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181844.56904c4@posting.google.com>
Source record: 110401

let me rephrase:

PA--+SWR meter1+--50ohm line--+SWR meter2+--50ohm line--+50 ohm
(same Z as PA) (50 Ohms) dummy
load
1 2 3

If you measure the SWR at point 1, you let Z1 (Zload) be 50 ohms,
and Zo is the output impedance of the PA. SWR meter1 should be
characterized to Zo.

I've agreed that SWR meter2s SWR reading (at point 3) will not
change as you change PAs impedance, but the SWR at point 1 definitely
WILL.

So, Does the SWR change as you change the source impedance? IT
DEPENDS ON WHERE YOU MEASURE IT! Right at the output of the source,
it will!

From Pozar's Microwave Engineering (Pg. 606):

Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)

It should be easy to see from this well known equation that a
perfect 50 Ohm Zl will definitely change SWR as you change Zo away
from 50 ohms.

Slick

3508. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:57:02 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181857.1bbe0e09@posting.google.com>
Source record: 110402

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<cjr1kvs1n6q9h1nsbq0ci7ejv4980p0il5@4ax.com>...
>
> Zc = 376.730 ï¿½ ohms
>
> That is, the Z of free space is expressed in exactly the same terms as
> a carbon composition resistor. Now given the genesis of this debate
> is that free space Z is somehow different from the expression of
> Radiation Resistance (e.g. 37 Ohms for a monopole) the only possible
> rhetorical objection is that free space is not lossy like a carbon
> resistor (non-dissipative). Well, neither is the Radiation
> Resistance! Even rhetoric fails. ;-)
>

Thank you Richard! Someone that's making sense on this NG after Roy lost
his sense!

> An antenna is a structure that transforms Radiation Resistance into
> the Impedance of free space, as shown, and by definition. Both use
> identical MKS units, both are identical characteristics.
>

Ohms are still always Ohms, regardless of what you are measuring.
And it's very interesting that the E and H fields have units of
Volts/meter and Ampere(turn)/meter, which when you divide one by the
other, you get basically Volts/ampere, just like you would in a
transmission line.

But I don't claim that a wave traveling in a transmission line is
the same as a wave traveling through free space, even if Roy claims
this is what i mean.

Slick

3509. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 02:57:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhs3m5$5aq$1@hercules.btinternet.com>
Source record: 110403

Tom wrote -
> And you could probably find my name on a patent that would give
> you a clue that I was at least starting to learn a little something
> about transmission lines in 1969 or so, though I readily admit to not
> worrying about "reflection coefficient" back then. Just hacked
> through the raw, unabridged transmission line equations.
>
> Reg would think that a better way to learn the stuff anyway.

==========

Tom, agreed.

The ONLY way of learning about transmission lines is to begin, as you describe it, with "unabridged transmission line equations" at power and audio frequencies. Otherwise the modern engineer's education is sadly neglected and he ends-up on this newsgroup as a severely handicapped bafflegabber convinced he can't possibly be wrong when he misapplies microwave simplifications, all that he is familiar with, to HF and below.

Forgive me for mentioning again that very useful tool in its hey-day, the Smith Chart, still often extolled for its educational virtues, can be misleading to the user who is without knowledge of the behaviour of lines below 1 or 2 MHz. To use what's printed on a Smith Chart in support of an argument convinces only the person feeling in need of support. It's about as convincing as making reference to an author who nobody beyond the referrer has ever heard of and is never likely to get his hands on. I am not an ignoramous but I must confess I have never used a Smith Chart in anger in my 55 years of experience of one sort or another. Never felt in need of it! Neither have I ever met anybody else who has either.

It should not be forgotten this newsgroup is primarily intended for exchange of information between radio amateurs. It is fairly clear there's a number of retired professional engineers who are also radio amateurs who frequent this newsgroup. Fine! I'm a long-retired engineer myself. There are also a sprinkling of engineers who are professionals in that they are paid for their services of some sort or another. There are some people, perhaps with some small historical justification, have the audacity to consider themselves to form an informal Establishment. Foundations of Establishments lie on shifting sands.

But whatever messages pass between these many-varied people, all with quite legitimate interests, it is suggested they are adressed in plain-English terms as understood by ordinary people. Radio amateurs are ordinary people.

To return to Reflection Coefficient, although of academic interest since Oliver Heaviside, it first became of practical interest to telephone engineers in the early 1910's after the invention of the thermionic valve amplifier. It was used immediately after its invention not only in radio transmitters and receivers but at audio frequencies in long distance telephone circuits.

The basic problem was to connect two telephones together over a single pair of wires, the amplifiers along the route being unidirectional. But, however it is arranged, there must always be a junction in the circuit at which a 4-wire circuit becomes transformed to the 2-wire both-directional circuit required by every telephone.

Now, unless the incoming 2-wire transmission line (of the 4-wire circuit) is correctly terminated impedance-wise (reflection coefficient = 0) the speech signal will be reflected back down the other pair of wires in the amplified 4-wire circuit to the telephone at the other end of the circuit. There will be an echo. Both telephones will suffer from it but not necessarily a severe problem. In fact it may be reassuring to the listener to hear his own voice - the system is working.

The real problem does not arise until an amplified 4-wire circuit becomes connected to another 4-wire amplified circuit such that the loop-gain from one telephone to the other exceeds unity. The circuit then becomes nstable - it oscillates at some indeterminat audio frequency. In engineering terms the circuit sings and becomes unusable. The singing point is when the reflection coefficient times the loop gain exxceeds unity. When a circuit sings it can be at a high level and put adjacent circuits out of operation due to crosstalk. So you see reflection coefficients and impedance matching have been foremost in design and operating engineers minds for many years.

Nuff sed. Reg, G4FGQ

3510. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 03:00:31 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181900.7bc44cbc@posting.google.com>
Source record: 110404

Roy Lewallen <w7el@eznec.com> wrote in message news:<vk2bjr6iqke6a8@corp.supernews.com>...
> Richard Clark wrote:
> > . . .
> > So, how do the "ohms" of free space differ from the "ohms" of a
> > quarter wave monopole's Radiation Resistance?
> > . . .
>
> As I and several others have recently said several times, the "ohms" of
> free space represent a ratio of E field to H field of a plane wave or,
> more fundamentally, the square root of the ratio of the medium's
> permeability to its permittivity. The "ohms" of a quarter wave
> monopole's radiation resistance represent the ratio of a voltage to a
> current. An E field is not a voltage, and an H field is not a current.
> They are different forms of energy, related by Maxwell's equations.
>
>

Ohms are still always Ohms, regardless of what you are measuring.
And it's very interesting that the E and H fields have units of
Volts/meter and Ampere(turn)/meter, which when you divide one by the
other, you get basically Volts/ampere, just like you would in a
transmission line.

But I don't claim that a wave traveling in a transmission line is
the same thing as a wave traveling through free space.

And your example of the product of RC being in seconds actually
makes sense! After all, it is an RC time constant! The number of
seconds it takes to get to 90% charge or discharge of a series RC
circuit.

Slick

3511. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 03:03:48 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308181903.5e6b441f@posting.google.com>
Source record: 110405

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<16d2kv06i8dfojgg9o8828epa1954khrhv@4ax.com>...
>
> But this is repetition and evidence has been offered. As you have
> revealed no new information that changes these relationships, nor have
> you revealed any other representation of free space characteristic Z
> in terms not already part of the MKS/SI Canon, then I am satisfied
> that I will not change your mind.
>
> 73's
> Richard Clark, KB7QHC

You may change Roy's mind, Richard, but he could never admit this
in public, because too many people are reading and it would make him
look bad.

Slick

3512. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 03:17:42 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f419836_6@corp.newsgroups.com>
Source record: 110406

Dr. Slick wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f41245b_7@corp.newsgroups.com>...
>
>>What must be realized is that the s-parameter reflection coefficients
>>are *PHYSICAL* reflection coefficients while 'rho' is not a physical
>>reflection coefficient. s11 and 'rho' do not usually have the same
>>value. There are physical constraints on s11. The s11 physical
>>constraints do not apply to 'rho'. s11 is the square root of the
>>ratio of Pref to Pfwd under special conditions. 'rho' is the square
>>root of the ratio of Pref to Pfwd under all conditions. There's a
>>big difference. s11 does not usually equal 'rho' anywhere except
>>at a one-port load.

> [s11]=rho, rho being just the magnitude of the s11.

I just told you that is not always true.

s11 is the reflection coefficient when a2=0

|rho| is the reflection coefficient when a2=a2

In a Z0-matched system with reflections, they are NOT equal.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3513. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 03:45:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk37aiv0jh9c@corp.supernews.com>
Source record: 110407

I've made homebrew transmitters with efficiencies exceeding 85%. See for example Fig. 2.97 on p. 2.36 of the new _Experimental Methods in RF Design_. Sokal and Sokal got better than 90% as I recall with their Class E designs.

Roy Lewallen, W7EL

3514. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 03:52:24 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <hDqdnct-JaxmA9yiU-KYvg@comcast.com>
Source record: 110408

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308181844.79528c1e@posting.google.com...
> tdonaly@aol.com (Tdonaly) wrote in message
news:<20030818164814.06584.00000162@mb-m28.aol.com>...
> Zo doesn't have to be the coax impedance. It can be any impedance
> you want. What about interstage-matching networks between FETs? Do
> you think there are no reflections there? Should you attempt to match
> impedances there? I would think so.

You transform the input impedance of the driven stage to the optimum load of the driving stage. Whether that results in a conjugate match is completely immaterial. Trust me, I have done it .

As for the Zo thing, you are trying to misapply the formula.

BTW, the one place where you would think conjugate matching should always apply, antenna to receiver input, does not (always). Lowest noise figure often occurs at SWRs around 1.5

Tam/WB2TT

3515. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 03:57:28 UTC
From: Owen Duffy <owen@oda.com.au>
Message-ID: <3F41A028.2050205@oda.com.au>
Source record: 110409

W5DXP wrote:

> |rho| is the reflection coefficient when a2=a2

Prophetic!

3516. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 04:00:29 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <BSOdnRc07IJ9PdyiXTWJhA@comcast.com>
Source record: 110410

Why don't you try it? It is easy enough to add impedance between the
transmitter and SWR meter. Keep the power low, but exactly the same for the
two cases. In fact, all you would have to do is replace the 50 ohm line
between the transmitter and meter with 1/4 WL of 75 Ohm line.

Tam/WB2TT
"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308181844.56904c4@posting.google.com...
> let me rephrase:
>
> PA--+SWR meter1+--50ohm line--+SWR meter2+--50ohm line--+50 ohm
> (same Z as PA) (50 Ohms) dummy
> load
> 1 2 3
>
>
> If you measure the SWR at point 1, you let Z1 (Zload) be 50 ohms,
> and Zo is the output impedance of the PA. SWR meter1 should be
> characterized to Zo.
>
> I've agreed that SWR meter2s SWR reading (at point 3) will not
> change as you change PAs impedance, but the SWR at point 1 definitely
> WILL.
>
> So, Does the SWR change as you change the source impedance? IT
> DEPENDS ON WHERE YOU MEASURE IT! Right at the output of the source,
> it will!
>
> From Pozar's Microwave Engineering (Pg. 606):
>
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>
> It should be easy to see from this well known equation that a
> perfect 50 Ohm Zl will definitely change SWR as you change Zo away
> from 50 ohms.
>
>
> Slick

3517. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 05:11:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk3ccatg5spocf@corp.supernews.com>
Source record: 110411

Yes, Magid explains it thoroughly and well. His analysis includes traveling waves from the beginning to the end. It's basically the same analysis I've done myself.

What he *didn't* do was to throw the time-dependent information out the window at the very beginning of the analysis, as you've done in all your analyses involving only average power. That allows him to actually show where the energy is at every instant of time. It looks to me like his analysis is valid, so if your method leads to a different conclusion, I feel there's good reason to doubt its validity.

Y'know, if every author seems to have it wrong, considering how many really, really intelligent and learned people there are out there, and how many times their work has been carefully reviewed, have you considered for just a moment the possibility that maybe, just maybe, they have it right and you have it wrong? But if you're absolutely convinced you've discovered something that all those other folks are mistaken about, why not write your own textbook? Or at least a paper or two for the professional publications. The world will thank you for straightening them out.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> You've now heard of Magid, ...
>
>
> Unfortunately, every author and guru that I have ever encountered,
> at some point, confuses cause and effect. I'm sorry I can't get over
> to the Texas A&M library right now but Magid seems to believe that
> standing waves can be sustained without a forward wave and a reflected
> wave. Does he explain how that is possible? In all honesty, it is an easy
> mistake to make. Even Ramo, Whinnery, and Van Duzer make the same
> mistake. Not exactly a quote but: The reflection coefficient is caused
> by the ratio of the reflected power to the forward power. Therefore,
> the ratio of the reflected power to the forward power is caused by
> the reflection coefficient. "Logic" like this seems to abound in
> the field of transmission lines.

3518. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 05:14:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk3cifse2u1gcf@corp.supernews.com>
Source record: 110412

Hm.

All in the same sentence, that "line losses are negligible" and "line losses will be about -3 dB"? I assume, of course that you mean 3 dB, not -3 dB. But does this mean that you consider 3 dB to be negligible? And how did you calculate that as the line loss?

Roy Lewallen, W7EL

Dave Shrader wrote:
> Assuming a VSWR of 10 to 1, reasonable for 80 meters, and assuming line
> losses are negligible for open wire tuned feeders, also reasonable for a
> first approximation, your line losses will be about -3 dB.
>
> EZNEC indicates that you will also have a VSWR of about 10:1 on 40 meters.
>
> Conclusion: you will experience about -3 dB loss [1/2 S unit] on both 75
> and 40 when fed with 500 ohm line.
>
> Deacon Dave, W1MCE

3519. Re: HV Vertical ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 05:21:06 UTC
From: John Savva <jsavva@yahoo.com>
Message-ID: <6ti0b.150239$Oz4.41070@rwcrnsc54>
Source record: 110413

I have had great luck with the AV-640 by Hy-Gain. It uses a counterpoise;
no radials required. I have mine mounted about 7 feet off the ground on a
small mast, and have been extremely pleased. It has worked very well for DX
and also has done a good job on 40 meters for local nets.

"MAS" <panman_uk@hotmail.com> wrote in message
news:AP20b.350$tS2.64394@newsfep2-win.server.ntli.net...
> What's your view on the best HF multi band vertical for me.
>
> I know the fact I am looking at multi band is a compromise with respect to
> performance but who can afford mono band antennas for all bands ;-)
>
> I am able to mount something on a pole putting the base of the antenna
about
> 10 - 20 ft above ground.
>
> I was thinking about the Cushcraft R6000 but I am open to ideas.
>
> Cheers..
>
>

3520. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 05:39:11 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308182139.561295a0@posting.google.com>
Source record: 110414

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308181828.6962cf7d@posting.google.com>...
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308181048.78bd862a@posting.google.com>...
> >
> > As others have noted, the magnitude of the reflection coefficient can
> > be greater than unity with a passive line and load. Don't try to read
> > too much physical significance into that, however.
> >
>
> That's impossible, unless you have a free source of energy, in
> which case you should send me the schematic! :)
>
> Do you believe everything people tell you? How did they set this
> up? I don't think i will get an answer to this.

Excuse me? As a matter of fact, the way I discovered that you can
have a reflection coefficient greater than unity was to set up the
boundary conditions for a real transmission line feeding a moderately
high Q inductor and discover that |rho|>1. Up to that point, nobody
had told me it was possible. At the time, it was a somewhat
surprising result to me. Try it yourself. On a line, Vf/If = -Vr/Ir
= Zo. At the end of the line connected to an load whose impedance is
Zl, the current is V/Zl, but V = Vf+Vr, and the current there must
also be If+Ir. You should be able to reduce those to the well-known
equation for reflection coefficient, and if you plug in numbers such
as Zo=50-j5 and Zl=1+j100, you'll see that |Vr/Vf|>1. It only takes
three or four lines of simple linear algebra and perhaps plugging the
complex numbers into a calculator to find the result for that example.
Again, TRY it for yourself. DO NOT just believe what I tell you. If
you have trouble with the algebra, I'll be happy to help you out.

Cheers,
Tom

3521. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 05:45:23 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308182145.5871d542@posting.google.com>
Source record: 110415

Well, I guess help is not wanted for whatever reason. I'd rather
offer sincerely and be refused than not offer and learn later that it
was in order.

Regards,
Tom

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<dn32kv85badnou58pn8lev8kben6578mpn@4ax.com>...
> On 18 Aug 2003 09:37:59 -0700, k7itm@aol.com (Tom Bruhns) wrote:
>
> >Richard,
> >
> >If you do indeed need help, it's far more help than I can give you.
> >My posting was not in jest, nor was it to poke fun at you or your
> >postings. I was dead serious about it.
> >
> >Cheers,
> >Tom
> >
>
> Hi Tom,
>
> Yes, I have noticed the 30 cent jump in the cost of gas. ;-)
>
> How about lunch at Lake Stevens then? I drove that for a couple of
> years too, back when your outfit was called HP. I worked in Larry
> Whatley and Nick Pendergas's group during the Marysville to L.S. move
> (to set a time frame). 1,000,000 lines of Pascal FFT code in that
> project. It was fun and I still have a lot of drawings of waveforms
> generated.
>
> For those who are interested in the nuances of FFT's (and why their
> own implementation transforms lack resolution or dynamic range); my
> tenure provided me with a wealth of insight that is commonly
> unimplemented in current discussions here and generally in trade
> publications.
>
> 73's
> Richard Clark, KB7QHC

3522. Re: HF antenna assistance

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 08:15:21 UTC
From: Brian Potter <brian@chorleyfm.com>
Message-ID: <Xns93DC5DFD83767noIDtoken@130.133.1.4>
Source record: 110416

On 18 Aug 2003, you wrote in rec.radio.amateur.antenna:

> Hi folks
>
> Although licensed for over 12 years as a G7... converting 3 years ago
> to a M0...callsign (with 12 wpm cw), personal circumstances have not
> until now permitted me to get started on HF.
>
> Problem now is antennas (and indirectly xyl).
>
> Have garden to rear of property, narrow but 80' long from house to
> boundary. A further 25' is available along side of property, rear to
> front, but approx 6' proximity to house wall.
> Height of proposed feedpoint approx 17' 6" ; height at boundary 12'
>
> Would initially like to cover 14 - 7 and 3.5 MHz with a coax fed
> horizontal wire dipole of approx 66',

Carolina Windom for 40m to 10m, trapped dipole (yuck!) for 80m.

3523. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 10:06:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk3tku4bhltr65@corp.supernews.com>
Source record: 110417

Thanks for the analogy.

One can mathematically and conceptually conceive two opposite-traveling waves that add up to the observed standing wave, and that's fine. The problem comes with assigning power or energy to the waves. Then you run into the problem of how one wave got the energy over the barrier into the pocket and the other wave took the same amount back out, without transfering any air molecules across the barrier in the process.

The average power analysis looks to me something like this. Suppose you have two batteries each with exactly 2 volts potential and zero internal resistance, with a 2 ohm resistor connected between their positive terminals. The negative terminals are connected together. You replace the battery on the left with a short (turning it off), and observe that the current through the resistor is one amp to the left. Then you hook the left hand battery back up and turn the right hand battery "off" by replacing it with a short. You observe that there's one amp now flowing through the resistor to the right. Finally, turn both batteries "on" by putting them both in place. You can use superposition to conclude, correctly, that there's zero current flowing in the resistor.

But it's silly to insist that there's a forward two watt "power wave" flowing to the right, and another two watt wave flowing to the left. You subtract one from the other and, sure enough, get zero. But are the "power waves" real? Studying and analyzing these imaginary waves is surely a lot more interesting than simply looking at the circuit and noting that the "boring" (as Cecil calls it) net power is zero. But aren't you studying ghosts?

Even more risky is adding the things. This time hook two one volt batteries in series with the 2 ohm resistor and energize one at a time. With the upper one on and the lower one "off" (replaced with a short) you get 1/2 amp. You've got a "power wave" of I^2 * R = 1/2 watt. Turn the lower one on and the upper one "off", and you get another "power wave" of 1/2 watt, in the same direction. Turn them both on, and you have a power flow of, um, 2 watts. Welcome to the new math.

Roy Lewallen, W7EL

Jack Smith wrote:
>
> Roy:
>
> Interesting point and I don't recall reading or hearing it elsewhere.
>
> The following is dashed off without fully thinking it through, so no

> warranty on its accuracy.
>
> If you think of a sound wave (longitudinal transmission, of course) in
> a lossless acoustic transmission line terminated with a short, the
> individual air molecules within each 1/4 wave section are likewise
> trapped since at the 1/4 wave points there is zero sound pressure.
> This may be a useful analogy for the electromagnetic transverse
> propagating T-line.
>
> Jack K8ZOA

3524. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 10:07:19 UTC
From: kd1@sympatico.ca
Message-ID: <3F41F6D7.B1931963@sympatico.ca>
Source record: 110269

"Dr. Slick" wrote:
>
> Ohms are still always Ohms, regardless of what you are measuring.
> And it's very interesting that the E and H fields have units of
> Volts/meter and Ampere(turn)/meter, which when you divide one by the
> other, you get basically Volts/ampere, just like you would in a
> transmission line.

How do you know when the reduced units of one computation mean the
same thing as another?

An example:
The reduced units of modulus of elasticity (in/in/psi -> psi) is
the same as the units for stress (psi) and yet modulus of elasticity
is clearly not stress. And in this case, the unreduced units are
much more descriptive than the reduced units. Reducing discards
information.

On the other hand, Torque (Newton*metres) when multiplied by
Radians (metre/metre) does give Energy (N*m*m/m -> N*m), but only
after reduction. And for sure, Torque (N*m) is not the same as
Energy (N*m).

So sometimes it is appropriate to say the reduced results are the
same and some times it is not. Is there a way to know when it is
legal?

What rules have you used to conclude that reducing V/m/A/m to V/A
is appropriate?

...Keith

3525. Re: Gap ANtenna Titan

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 10:11:54 UTC
From: Pappy@USA.net
Message-ID: <3F41F7EA.4649342E@USA.net>
Source record: 110418

I know the guy you bought it from Scott. He told you it was a great vertical. I will tell him your happy with the antenna. Both he and I use G5RV's, thanks to home owners associations.

Sgordon wrote:
>
> My vote would have to be the Gap Titan 10-80m. no radials needed. I didn't
> think it would do very good compared to my full wave loop at 38ft. But I
> will tell you it does excellent. As soon as I got it up in the air we
> worked PZ5 and YS1 with 100 watts with 59 signal. Switched to my loop with
> the YS1 and went 56.
>
> http://www.gapantenna.com/
>
> --
> Sincerely,
> Scott Gordon
> Phone: 1-888-428-6622
> Pre-Recorded Call 1-888-295-2806
> Yahoo Chat ID scott1gordon
> AOL ID scott1gordon
> http://best.justsaycash.com/ Just Say Cash
> http://best.toxicfreehomes.com/ Is Your Home A Healthy Home?
> http://best.smilestarters.com/ FREE e-Greeting Cards
> ==========

3526. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 10:53:45 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <w+bWAtT5GgQ$EAxh@ifwtech.co.uk>
Source record: 110274

Dr. Slick wrote:
>
>PA--+SWR meter1+--50ohm line--+SWR meter2+--50ohm line--+50 ohm
> (same Z as PA) (50 Ohms) dummy
> load
> 1 2 3
>
>
> If you measure the SWR at point 1, you let Z1 (Zload) be 50 ohms,
>and Zo is the output impedance of the PA. SWR meter1 should be
>characterized to Zo.
>
> I've agreed that SWR meter2s SWR reading (at point 3) will not
>change as you change PAs impedance, but the SWR at point 1 definitely
>WILL.
>
> So, Does the SWR change as you change the source impedance? IT
>DEPENDS ON WHERE YOU MEASURE IT! Right at the output of the source, it
>will!
>

One last try......

Dr S: please do yourself a favor, and read this through completely *before* you hit Reply.

Let's remove the transmission lines.

You can do this without any change in the steady-state properties of the system. The right-hand one of the two lines is a 50 ohm line terminated in a 50 ohm load, so the impedance at point 3 is also 50 ohms and we can remove that line with no effect.

The remaining line is also a 50-ohm line terminated in a 50 ohm load, so that can go too... at least, it can in the idealized case where the SWR meter does do not insert any extra length of transmission line; and it sense the conditions on the line without disturbing them.

So now were down to four components, all directly coupled together with *no* transmission lines in between:
1. PA
2. SWR meter 1 (calibrated to a system reference impedance which is the same as the output impedance of the PA)
3. SWR meter 2 (calibrated to a different system reference impedance, 50 ohms)
4. 50 ohm load.

Now let's simplify it even further:
1. PA
2. Either SWR meter 1 or SWR meter 2.
3. 50 ohm load.

The real-world steady-state electrical properties of these shortened systems are still exactly the same as those of your original one.

Now what are you really saying about any and all of the above systems?

> From Pozar's Microwave Engineering (Pg. 606):
>
> Reflection Coefficient looking into load = (Zl-Zo)/(Zl+Zo)
>
> It should be easy to see from this well known equation that a
>perfect 50 Ohm Zl will definitely change SWR as you change Zo away from
>50 ohms.
>
>
It's very convenient for this argument that "SWR" meters actually measure the magnitude of reflection coefficient, |rho|. The conversion to SWR takes place on the non-linear meter scale. (As Reg has pointed out, if you called them "rho-meters" they would have a linear scale from 0 to 1, instead of the more familiar non-linear scales of SWR or power.)

As Pozar - and countless others - correctly state, rho is a function of both the Zl that you're measuring, and the system reference impedance Zo. You cannot either measure or calculate rho without first assuming a value for Zo; not ever.

Since you have to choose a value of Zo *before* you can calibrate the rho-meter, it's not surprising that two differently-calibrated meters read differently when connected to the same physical load impedance. It's also not surprising that "re-normalizing" the Zo, either on the Smith chart or in a computer program, will predict exactly what *both* meters should read. You only need to know Zl and the two assumed values of Zo for which the respective meters were calibrated.

The same would be true even if the terminating impedance Zl was not 50 ohms as assumed above. The measured values would alter, but the ability to predict the readings of both meters would not.

In that respect, you've only been stating the obvious all the time.

The other part, the apparent belief that a rho- or "SWR" meter will change its readings according to the actual, physical source impedance from which it's being fed, remains simply incorrect. The meter is only affected by the impedance it sees at the downstream (output) side.

You can prove this very simply, by connecting various resistors between the output of the transmitter and the input of the meter. So long as you always adjust the transmitter to give the same RF *voltage* at the input of the meter - and leave the downstream side strictly alone - an ideal rho/"SWR" meter will continue to read exactly the same. I can't speak

for your real-life meter, but would expect a good one to read close to
constant.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3527. Re: Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 11:55:28 UTC
From: Helmut Wabnig <hXXXwabnig@aXXXon.at>
Message-ID: <io34kvsaul76e5lafak1kev7ujhg5aubjt@4ax.com>
Source record: 110270

On 18 Aug 2003 18:41:07 -0700, k7itm@aol.com (Tom Bruhns) wrote:

>(Food for thought for the relatively new folk here...and perhaps even
>some old-timers.)
>
>Consider a system (linear, time-invariant, steady-state excitation and
>all that jazz) in which a source delivers 1 watt to a load composed of
>a uniform transmission line terminated in a load. Further, this line
>has some loss and the frequency is low enough that its characteristic
>impedance is noticably reactive, just as Reg has pointed out. Call it
>Ro-jXo. What should the impedance of the load be to maximize power
>dissipated in the load? Is the answer a function of anything else not
>yet stated?

Hmm, that question is so difficult, so let me add one more question,
to avoid frustrations.

Question:

What is the correct length of a uniform transmission line
used to feed an antenna, so that power transmission to the load
is optimized even when the characteristic impedance
(as Reg has pointed out) is noticeably reactive or not,
especially when the transmission line has some loss.

Good luck!

w.
--
On the Internet nobody knows that I am a dog.

3528. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 12:12:44 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <0vo0b.199302$o%2.92202@sccrnsc02>
Source record: 110271

I should have been more specific. The line loss, in a 500 ohm open wire tuned feeder system, IF MATCHED, can be assumed to be negligible. The presence of the additional losses caused by the amplitudes of the reflected components at a VSWR of 10:1 will be about 3 dB.

Is 3 dB negligible? It's approximately 1/2 S unit. Whether or not 3 dB is negligible depends on the individual station. I get one judgment if I consider QRP and a different judgment if I consider QRO. For me, 3 dB on 75/40 is acceptable due to a single antenna limitation and 1 KW output.

Roy, thanks for challenging my 'loose language'.

DD

Roy Lewallen wrote:

> Hm.
>
> All in the same sentence, that "line losses are negligible" and "line
> losses will be about -3 dB"? I assume, of course that you mean 3 dB, not
> -3 dB. But does this mean that you consider 3 dB to be negligible? And
> how did you calculate that as the line loss?
>
> Roy Lewallen, W7EL
>
> Dave Shrader wrote:
>
>> Assuming a VSWR of 10 to 1, reasonable for 80 meters, and assuming
>> line losses are negligible for open wire tuned feeders, also
>> reasonable for a first approximation, your line losses will be about
>> -3 dB.
>>
>> EZNEC indicates that you will also have a VSWR of about 10:1 on 40
>> meters.
>>
>> Conclusion: you will experience about -3 dB loss [1/2 S unit] on both
>> 75 and 40 when fed with 500 ohm line.
>>
>> Deacon Dave, W1MCE
>
>

3529. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 12:26:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4218e9$1_5@corp.newsgroups.com>
Source record: 110272

Roy Lewallen wrote:
> Y'know, if every author seems to have it wrong, considering how many
> really, really intelligent and learned people there are out there, and
> how many times their work has been carefully reviewed, have you
> considered for just a moment the possibility that maybe, just maybe,
> they have it right and you have it wrong?

"It" is not always the same thing. What I am saying is that nobody's perfect, nobody knows everything, and 1000 years from now, most of what you and I believe today will be obsolete.

For instance, Ramo & Whinnery use the square root of the ratio of reflected power to forward power to define the reflection coefficient. Shortly thereafter, they use the reflection coefficient as the cause of that power ratio. So in essence, they are saying that the reflection coefficient causes itself.

Another example from this newsgroup. After standing waves have been caused by the superposition of forward waves and reflected waves, they somehow become self-sustaining without the forward waves and reflected waves.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3530. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 12:45:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f421d49_5@corp.newsgroups.com>
Source record: 110273

Roy Lewallen wrote:
> One can mathematically and conceptually conceive two opposite-traveling
> waves that add up to the observed standing wave, and that's fine. The
> problem comes with assigning power or energy to the waves.

Proposing waves that exist without energy seems more problematical
to me. And nobody has come up with an explanation of how standing
waves can exist without forward waves and reflected waves in a
single source, single feedline, single load system. Seems to me,
that is an absolutely necessary first step in proposing self-
sustaining standing waves.

> The average power analysis looks to me something like this. Suppose you
> have two batteries ...

In a typical ham installation, there is only one source and all system
energy is supplied by that single source. Please limit your examples
to one source to adhere to reality. Having to change the example
away from reality to multiple sources to make a point is a weakness,
not a strength, in the argument. In a typical ham installation, instant
energy is NOT available since the source is nanoseconds away. Any
energy needed instantaneously must already be there.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3531. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 12:51:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f421eaf$1_5@corp.newsgroups.com>
Source record: 110276

Dave Shrader wrote:
> I should have been more specific. The line loss, in a 500 ohm open wire
> tuned feeder system, IF MATCHED, can be assumed to be negligible. The
> presence of the additional losses caused by the amplitudes of the
> reflected components at a VSWR of 10:1 will be about 3 dB.

Not with open-wire transmission line on 75m. It would be less than
one dB.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3532. Established knowledge (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 12:55:47 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <wbRGpTAT5hQ$EADC@ifwtech.co.uk>
Source record: 110275

Reg Edwards wrote:
>It should not be forgotten this newsgroup is primarily intended for
>exchange of information between radio amateurs. It is fairly clear
>there's a number of retired professional engineers who are also radio
>amateurs who frequent this newsgroup. Fine! I'm a long-retired engineer
>myself. There are also a sprinkling of engineers who are professionals
>in that they are paid for their services of some sort or another. There
>are some people, perhaps with some small historical justification, have
>the audacity to consider themselves to form an informal Establishment.

Reg, this "Establishment" is something that you just invented. The audacity is yours.

Yes, there are people on this newsgroup who agree on lots of technical points. And yes, they are often quite insistent about it.

(At this point, I'll change to "we", because I am one of the people we're talking about. And despite his chosen role as maverick, provocateur and general gadly, so too is Reg ;-)

Nobody knows everything, but each of us has been around for long enough to have covered most of the same territory, and to have made all the common mistakes. But we've also been around long enough - and been persistent enough - to have come out the other end with some correct answers.

(Here comes Philosophy of Science in two paragraphs. Please don't give me a hard time over the things I'm going to leave out.)

What's a correct answer? One that accurately describes external, physical, observable, measurable reality, as nearly as we can measure it or need to know. People who take that view are not too comfortable with approximations and half-truths, because sooner or later we're going to be caught out by a new situation where the "nearly correct" answers don't work any more. In the long run, it's simply easier to work out a correct answer that can be trusted.

Each of the people Reg is talking about (in fact, especially Reg himself) worked out many of those answers for ourselves, way before we met on the Internet. But when we did meet, it wasn't at all surprising to find ourselves agreeing on so much. That's because all correct answers are describing the same physical reality, so they *have* to agree. The only allowable difference is to choose different viewpoints upon the same reality; but if they are correct, all those alternative viewpoints still *must* be consistent with one another - they must *not* contradict in even the smallest detail (unless it's acknowledged to

involve an approximation).

Those rules are rigid, but nobody made them - reality did. The only available choice is whether to accept them and stick by them, or to sometimes let them slide. I choose to accept them, as much as I possibly can, because it's actually easier in the long run. If someone else's better logic forces me to re-evaluate, that's really not a problem because I'm better-off than before.

Yes, people like that can be rather insistent! But it's not because we want our personal faiths or beliefs to prevail - it's not about us at all. It's because we want external, physical, observable, measurable reality to prevail.

Cue for somebody to pipe up about quantum physics, Heisenberg, uncertainty and all that. There are certain areas of science and engineering where these apply and even dominate, and mean that certain things are fundamentally un-knowable. Antennas, transmission lines and electronic engineering are *not* one of those areas. It's an excellent approximation to say that everything in these areas of physics and engineering is fixed and "real", and - if we work hard enough at it - knowable.

The exceptions, such as noise and the internal physics of semiconductors, can all be treated by engineers as macro-scale observables. A good example is the tunnel diode, which relies on a probabilistic quantum phenomenon that just can't happen according to classical science... but at the engineering level you can still rely on the device data. You don't see "Probably" stamped on each page.

Cue now for someone else to pipe up "But we don't know everything yet." No, we don't... but for every genuine new discovery, there are billions of mistakes, experimental and logical errors. When straightened out, these simply confirm that what we already knew is correct. You'd better learn to trust that body of existing knowledge much more that you trust yourself! I certainly do, and again life is easier as a result.

The good thing about the Internet is that we can all learn much faster than before. I certainly have. The bad thing is that we no longer make our mistakes in private. Stuff that used to end up as crumpled balls of paper, to be thought about more clearly tomorrow, is now being published every night to be read by thousands of people and archived forevermore. It's becoming harder and harder to identify the good information among all the rest.

To anyone who has already made those same mistakes, it seems such a waste to see people wandering off and doing it all over again. It's very hard to stand by and let it happen...

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3533. Motorola mobile antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 13:19:17 UTC
From: mark.heath@bearcom.com
Message-ID: <7e7d20b7.0308190519.5754d992@posting.google.com>
Source record: 110277

We have an assortment of Motorola Spectrum mobile antennas for sale on eBay. See
http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&item=3042065767&category=296&rd=1
for our current sale and to see a chart of our other available antennas.
Thanks

3534. Re: Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 14:12:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhtb8d$2tv$1@hercules.btinternet.com>
Source record: 110278

"Tom Bruhns" wrote
> Consider a system (linear, time-invariant, steady-state excitation and
> all that jazz) in which a source delivers 1 watt to a load composed of
> a uniform transmission line terminated in a load. Further, this line
> has some loss and the frequency is low enough that its characteristic
> impedance is noticably reactive, just as Reg has pointed out. Call it
> Ro-jXo. What should the impedance of the load be to maximize power
> dissipated in the load?

==========

The answer is perfectly obvious. Everybody who didn't see it immediately should kick themselves - hard!

For max power into the load, make the load impedance equal to the CONJUGATE of the impedance looking back into the line. There will be big standing waves at the load end of the line.

For exact load value it is necessary to know line length, propagation characteristics and the internal impedance of the source.

But when line attenuation is more than a few dB the impedance looking back into the line is Zo and maximum power is obtained with a CONJUGATE MATCH as always.

If the line is terminated with its own impedance, ie., Zl = Zo, there will be NO standing waves and line loss will increase.

To demonstrate the foregoing, download program COAXPAIR from website below, enter nominal HF Zo = 50 ohms, inner conductor diameter = 0.8mm for RG-58, frequency = 1000 Hz, length = 30,000 metres = 20 miles, and terminate the line with its own input impedance which is also Zo. Then terminate it with the conjugate of its own input impedance and keep your eyes on line loss in dBs. Also see what happens to line loss with shorter lengths.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

3535. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 14:22:12 UTC
From: richardharrison@webtv.net
Message-ID: <2567-3F423294-434@storefull-2315.public.lawson.webtv.net>
Source record: 110280

Dr. Slick wrote:
"Therefore, the reflected voltage can never be greater than the input voltage for a passive network, and the reflection coefficient can never be greater than 1 for such a case."

Terman, despite Reg`s disdain for experts, seems to agree with Dr. Slick. Here is Terman`s gist:
1. The reflected wave is identical to the incident wave except it travels toward the generator.
2. Ereflected / I reflected = -Zo. Just as Eforward / I forward = Zo
3. Line loss causes the reflected wave to decline as it travels toward the generator.
4. Phase of the reflected wave drops back as distance back from the load increases.
5. Volts at the load are the sum of the incident and reflected wave volts. Likewise for currents.
6. E/I at the load equals Zload.
7. The vector ratio Ereflected / E incident erquals rho, the reflection coefficient..
8. In a lossless line, rho is the same everywhere on the line.
9. The effect of a reactive load is merely to displace the SWR pattern on a transmission line.
There is no opportunity in the stated conditions on a transmission line for a reflected voltage to exceed the incident voltage or for the reflection coefficient to exceed one (1).

Best regards, Richard Harrison, KB5WZI

3536. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 14:31:31 UTC
From: kd1@sympatico.ca
Message-ID: <3F4234C3.9585DAAF@sympatico.ca>
Source record: 110279

Richard Harrison wrote:
>
> Keith wrote:
> "At the quarter wave points where voltage and current are always zero,
> there is no energy flowing. Period."
>
> Yes there is energy flowing, and it is flowing in both directions if it
> is flowing in one direction. Otherwise there would be no standing wave.

This view that there is energy flowing in both directions at the same
time
leads to some strange conclusions.

The directional wattmeter uses the following expressions to compute its
displayed value:
Vf = (V + IR)/2
Vr = (V - IR)/2
where V and I are the instantaneous voltage and current at the same
point
on the line and then computes power from:
Pf = average(Vf**2/R)
Pr = average(Vr**2/R)
Appropriate scaling (which we'll ignore for simplicity) is needed
depending on the characteristics of the voltage and current sensors.

Let's apply these expressions to some simple examples.

Connect a length of 50 Ohm transmission line to a 9 Volt battery and
wait
for the transient to die:
Vf = (9 + 0)/2 -> 4.5 V
Vr = (9 - 0)/2 -> 4.5 V
Pf = 0.405 Watt
Pr = 0.405 Watt
Disconnect the battery and the capacitance of the line remains charged
to
9 Volts. Are you really quite comfortable with the notion that this
line,
charged to 9 Volts, with 0 current everywhere has 0.405 Watts flowing
forward canceling at all points the 0.405 Watts flowing in reverse?

Others have stated that lamp cord has an impedance of about 100 Ohms.
Assume this to be correct.
With a table lamp plugged in but the lamp turned off:
Vf = (120 + 0)/2 -> 60 V
Vr = (120 - 0)/2 -> 60 V

Pf = 36 Watt
Pr = 36 Watt
Again, are you comfortable with this conclusion?

How about phone lines (phone on hook) at 600 Ohms and 48 Volts:
Vf = 24 V
Vr = 24 V
Pf = 0.96 W
Pr = 0.96 W
In a 400 pair cable there is 384 Watts flowing in the forward and reverse direction. From a hundred thousand line central office we get 960 Kilowatts forward and reverse, when the current is zero, everywhere. Comfort level?

With the forward and reverse power view, to completely understand the behaviour of the circuit, we need to know Z0 or we can not compute these forward and reverse powers which seem to be fundamental.

Consider a flashlight with the lamp off: the wire twists and turns and has a very non-constant Z0. While computationally tedious, it is possible to determine Pf and Pr at every point along the wire. Isn't it necessary to do this to obtain a complete understanding of what is happening in the circuit, if Pf and Pr are flowing? If not, why not? The necessity for doing this is the logical conclusion of the Pf and Pr approach.

Presented with a wire charged to high static voltage, what is Pf and Pr? Presented with a sphere charge to a high static voltage, what is the Pf and Pr?
Presented with a simple length of wire, how much power is flowing?

Similarly for a capacitor. The plates of a capacitor must have power reflecting in all directions even when it is just charged to a constant voltage (according to the Pf and Pr theory).

Given these bizarre results it would seem wise to limit the application of the watts indicated by a directional 'watt'meter to those things which are proper and not assume that it necessarily means that there is real power flowing.

...Keith

3537. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 15:29:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhtfou$aa2$1@titan.btinternet.com>
Source record: 110281

> How can you get a reflection coefficient greater than one
> into a passive network? I'd really like to know.
>
==========

Dear Dr Slick, it's very easy.

Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.

Load it with a real resistor of 10 ohms in series with a real inductance of
40 millihenrys.

The inductance has a reactance of 250 ohms at 1000 Hz.

If you agree with the following formula,

Magnitude of Reflection Coefficient of the load, ZL, relative to line
impedance

= (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,

and has an angle of -59.9 degrees.

The resulting standing waves may also be calculated.

Are you happy now ?

Reg, G4FGQ

3538. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 15:43:45 UTC
From: richardharrison@webtv.net
Message-ID: <1510-3F4245B1-481@storefull-2317.public.lawson.webtv.net>
Source record: 110283

Keith wrote:
"Connect a length of 50 Ohm transmission line to a 9 Volt battery and
wait for the transient to die."

The transient is the only part of your proposal for which the 50-ohm
surge impedance has meaning. That`s why it`s called the "surge"
impedance.

The 50 ohms is Zo and equals the sq.rt. of Z/Y, or in a perfect line
this is sq. rt. of L/C.

L and C require an alternatng current (changing, not static) to produce
reactance, so the d-c calculations are meaningless to Zo.

Best regards, Richard Hsarrison, KB5WZI

3539. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 15:43:54 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <_Ar0b.200667$Ho3.26805@sccrnsc03>
Source record: 110282

Richard I am very familiar with all you write.

But I have one question: if the 'transmission line' is very short so that the 'significant portion of a wavelength' criteria is not met, then the capacitive reactance of the line and any inductive reactance in the load and the effective Q of the circuit may all come into play. Is it possible for a resonant condition to exist? If so, does the reflection coefficient have any significance?

Deacon Dave, W1MCE

+ + +
Richard Harrison wrote:

> Dr. Slick wrote:
> "Therefore, the reflected voltage can never be greater than the input
> voltage for a passive network, and the reflection coefficient can never
> be greater than 1 for such a case."
>
> Terman, despite Reg`s disdain for experts, seems to agree with Dr.
> Slick. Here is Terman`s gist:
> 1. The reflected wave is identical to the incident wave except it
> travels toward the generator.
> 2. Ereflected / I reflected = -Zo. Just as Eforward / I forward = Zo
> 3. Line loss causes the reflected wave to decline as it travels toward
> the generator.
> 4. Phase of the reflected wave drops back as distance back from the load
> increases.
> 5. Volts at the load are the sum of the incident and reflected wave
> volts. Likewise for currents.
> 6. E/I at the load equals Zload.
> 7. The vector ratio Ereflected / E incident erquals rho, the reflection
> coefficient..
> 8. In a lossless line, rho is the same everywhere on the line.
> 9. The effect of a reactive load is merely to displace the SWR pattern
> on a transmission line.
> There is no opportunity in the stated conditions on a transmission line
> for a reflected voltage to exceed the incident voltage or for the
> reflection coefficient to exceed one (1).
>
> Best regards, Richard Harrison, KB5WZI
>

3540. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 16:00:06 UTC
From: richardharrison@webtv.net
Message-ID: <26766-3F425796-210@storefull-2318.public.lawson.webtv.net>
Source record: 110292

Keith wrote:
"Not an "of course" at all."

Terman and Bird Electronic Corporation say:

Usually, power delivered by the transmitter and to the load equals
Forward Power less Reflected Power.

Best regards, Richard Harrison, KB5WZI

3541. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 16:13:41 UTC
From: kd1@sympatico.ca
Message-ID: <3F424CB5.9A83C3AD@sympatico.ca>
Source record: 110286

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Do not be afraid to admit that you have changed the definition of P = V
> > x I and therefore do not accept the standard definition.
>
> Well, I was taking 'x' as a multiplication sign. Did you mean it as
> a cross product sign?

No, simple multiply.

> In any case, your Vinst is *NET* voltage and
> your Iinst is *NET* current. We know that the feedline Z0 forces
> Vfwd*Ifwd to be a constant value for a lossless line. We know that
> the feedline Z0 forces Vref*Iref to be a constant value for a lossless
> line. Vfwd+Vref is the *NET* voltage. Ifwd+Iref is the *NET* current.
> Of course, their product, in any form, is going to be *NET* power.

Not an 'of course' at all. In general in circuit analysis, one can
use superposition to evaluate voltages and currents, but it is quite
unusual for powers to sum properly at the same time. This works for
Vf, Vr, Pf and Pr in a transmission line because
Vf (= (Vinst + IinstR)/2)) and Vr (= (Vinst - IinstR)/2)) are
defined in terms of the same two variables but one is a sum and the
other is a difference.

> > When I learned Pinst = Vinst x Iinst there were no caveats about how
> > Pinst meant Pnet. Instantaneous energy is flowing or it is not. When
> > Pinst is 0 for all time, then there is no energy flowing.
>
> But RF energy cannot stand still so if it exists, it must necessarily
> flow. If there is no energy flowing, then there is no RF. If there is
> no RF, then your statements are irrelevant to this newsgroup. :-)

An intriguing thought, but transmission lines work perfectly fine with
pulses, step functions and DC. In particular, the expressions for Vf and
Vr work quite well at zero frequency, so an explanation which only works
for RF would seem to be incomplete.

Try thinking about how charge moves on a transmission line. These
solutions are not not constrained to just RF.

> > To satisfy your theory (and minimize double think), you have had to
> > change this to Pnet is zero to allow these cancelling powers to flow.
> > So be it.
>

> Your Vinst is *NET* voltage equal to Vfwd+Vref. Your Iinst is *NET*
> current equal to Ifwd+Iref. Of course, their product will be *NET*
> power. It cannot be anything else.

Again, generally not true. There is something quite specific about
the derivation of Vf and Vr which makes it so.

> > True, sort of.
>
> Ramo, Whinnery, and Van Duzer will be impressed that you "sort of"
> agree with them. :-)
>
> > It is not flowing all the way to the end of the
> > line and then back. There is not enough time for this to happen (on a
> > multi-wavelength line) since it changes direction every quarter cycle.
>
> Just as I suspected, you are confusing the carriers of the energy with
> the energy itself in the waves which moves at the speed of light. A
> quarter cycle of time is very, very large compared to the speed of light.

Well, I always thought the movement of energy was constrained to the
speed of light. If it changes direction every quarter cycle, then it
can not move more than 1/4 quarter wavelength or about half a meter
at 150 MHz.

> Since water molecules cannot travel at the speed of sound in the ocean,
> I assume you would argue that the energy in a tsunami wave cannot travel
> at 500 mph, right?

I would not argue that. I am not sure what I wrote to lead you to that
conclusion.

> > Not quite. Standing voltage and current waves (which are not waves in
> > the normal sense) can be observed on the line. They can be measured with
> > real voltage and current instruments; as can real energy flows with
> > a real (V x I) power meter (but not a 'Bird watt' meter which
> > is doing something quite different). It happens that if you assume the
> > existence of forward and reverse voltage and current waves, mathematical
> > functions can be derived that will produce the same distribution of
> > voltage and current as observed on the line. This is extraordinarily
> > convenient some analysis but does not mean that these assumed waves are
> > real.
>
> So please amaze me with a model that produces standing waves without actual
> forward and reflected waves (in a single source, single feedline, single load
> system).

Oh, the waves are there all right, if you choose to model it so. But,
they
are waves of voltage and current, not power.

As to models, the power folk model their lines as a voltage and current
which are out of phase. At 60 Hz the lines are not long enough to

observe the standing wave, so they have little interest in this
approach.

> > A mechanical analogue would be to look at a guy wire on a pole. You can
> > analyze the forces as two vectors at 90 degrees (or any other angle of
> > convenience!), but never make the mistake of assuming that there are
> > actually two guy wires present. Just because it is mathematically
> > convenient to assume the existence of two vectors does not mean they
> > exist.
> >
> >>Nobody is rejecting it. If the lossless stub is one second long, it takes
> >>two seconds of *POWER* to bring it to steady-state. If the stub contains
> >>no moving energy, where did all those joules go?
> >
> > This energy is indeed stored in the stub. None of it moves across zero
> > voltage or current boundaries.
>
> What exactly, keeps energy from crossing the boundary?

The same thing that stops the current and energy flow into a capacitor
when the capacitor has charged to the supply voltage.
The voltage on the capacitor and the supply are the same, no current
flows and no energy moves.

Try thinking about the line in terms of circuit theory and charge.

A transmission line with distributed capacitance and inductance is
somewhat more complex than a voltage source and a capacitor. The
distributed capacitance and inductance form resonant circuits which
transfer energy between capacitance and inductance. Just like a
circuit, if you short the line at any point where the voltage is
always zero, or open it at any point where the current is always
zero, nothing is changed. The voltage and current distributions
remain the same.

> Here is an example.
>
> source-------------50 ohm coax--------------+----1/4WL stub-----open
>
> What mechanism of physics keeps energy from crossing the '+' point? Note
> that there is no physical impedance discontinuity at point '+'.

The voltage is always 0 so from the most basic of circuit theory,
the power is zero, so the energy flow is 0. I have some difficulty
articulating what happens at a current maximum. But if you will permit
me to move the question back another quarter wavelength to a voltage
maximum and current minimum, the answer is easy. The voltage on both
sides of the current minimum are always the same so that no current
flows, hence no energy flows.

> This is what I (and Ayn Rand) call "primacy of consciousness" type thinking.
> If you believe it strongly enough, your math model will dictate reality.

> Something about being able to move mountains with the faith of a grain of
> mustard seed. Something about being able to change the SWR by changing the
> normalization of a Smith Chart on a sheet of paper. OTOH, I believe in
> "primacy of existence", where reality dictates my math models. They may
> be wrong but are as close to reality as I can get.
>
> All you have to do to convince me that you are right is explain exactly
> how standing waves can be sustained without a forward wave and a reflected
> wave (in a system with a single source, single feedline, and single load).

Though an intriguing question, this is not what I am attempting to convince anyone of. Rather I disagree with the view that in an open or shorted ideal line, energy flows to the end, is reflected back, flows back to the start and is reflected again. Repeat. To be even a bit stronger, ENERGY does not cross any point where the voltage or current is always 0. This is so that the expression P = V x I can remain true.

As to your question on standing waves, when a resonant circuit is exited with an impulse function, a sinusoidal voltage and current occur in the circuit. It does not seem much of a stretch to find a sinusoidal spatial distribution of voltage and current in circuit constructed of distributed capacitance and inductance (i.e. a transmission line).

...Keith

3542. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 16:20:42 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308190820.545622d2@posting.google.com>
Source record: 110284

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308181900.7bc44cbc@posting.google.com>...
>
> And your example of the product of RC being in seconds actually
> makes sense! After all, it is an RC time constant! The number of
> seconds it takes to get to 90% charge or discharge of a series RC
> circuit.
>

Opps! Actually, for one RC time constant, it's about 36.79% of the
initial surge current when charging, or 63.21% of the final charged
voltage at t=infinity (it theoretically never reaches a full charge,
as you obviously know).

The point is that the units of R*C lead to units of seconds, which
is exactly what it should be. There is order to the universe!
Sometimes...

Slick

3543. Re: Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 16:28:45 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308190828.6790faae@posting.google.com>
Source record: 110285

I'm sorry, Reg, but that is not a correct answer for the question as
it's stated. I hope others will jump in. Actually, had you gotten
the right answer, I'd have scolded you for posting it so quickly and
not letting some of the more novice folk have a try at it.

Cheers,
Tom

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhtb8d$2tv$1@hercules.btinternet.com>...
> "Tom Bruhns" wrote
> > Consider a system (linear, time-invariant, steady-state excitation and
> > all that jazz) in which a source delivers 1 watt to a load composed of
> > a uniform transmission line terminated in a load. Further, this line
> > has some loss and the frequency is low enough that its characteristic
> > impedance is noticably reactive, just as Reg has pointed out. Call it
> > Ro-jXo. What should the impedance of the load be to maximize power
> > dissipated in the load?
>
> ================================
>
> The answer is perfectly obvious. Everybody who didn't see it immediately
> should kick themselves - hard!
>
> For max power into the load, make the load impedance equal to the CONJUGATE
> of the impedance looking back into the line. There will be big standing
> waves at the load end of the line.
>
> For exact load value it is necessary to know line length, propagation
> characteristics and the internal impedance of the source.
>
> But when line attenuation is more than a few dB the impedance looking back
> into the line is Zo and maximum power is obtained with a CONJUGATE MATCH as
> always.
>
> If the line is terminated with its own impedance, ie., Zl = Zo, there will
> be NO standing waves and line loss will increase.
>
> To demonstrate the foregoing, download program COAXPAIR from website below,
> enter nominal HF Zo = 50 ohms, inner conductor diameter = 0.8mm for RG-58,
> frequency = 1000 Hz, length = 30,000 metres = 20 miles, and terminate the
> line with its own input impedance which is also Zo. Then terminate it with
> the conjugate of its own input impedance and keep your eyes on line loss in
> dBs. Also see what happens to line loss with shorter lengths.
> ---

> ========================
> Regards from Reg, G4FGQ
> For Free Radio Design Software
> go to http://www.g4fgq.com
> ========================

3544. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 16:43:39 UTC
From: richardharrison@webtv.net
Message-ID: <26766-3F4253BB-209@storefull-2318.public.lawson.webtv.net>
Source record: 110291

Deacon Dave wrote:
"Is it possible for a resonant condition to exist " (with a short cable)?

If the cable is too short to enforce Zo, the source for Zload is not necessarily a resistance and the load for the source can be resonant.

A short-circuited transmission line, shorter than 1/4-wavelength, is an inductive reactance. An open-circuited transmission line, shorter than 1/4-wavelength, is a capacitive reactance.

A transmission line is not required for mismatch between source and load. If a source can only supply a certain voltage to current ratio, and it`s different from the immutable Zload, you have a mismatch and a surplus of volts or amps which are rejected by the load.

The simple analysis of a series-resonant situation involving line inductance and a load capacitance is that volts across either is (I)(Z). The Z`s are about equal at resonanvce.

Trivia: 1/8-wavelength of line has a reactance which is equal to Zo.

Best regards, Richard Harrison, KB5WZI

3545. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 16:44:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kqf4kv4cugipcde39e2d5n84c4a6bd3uj9@4ax.com>
Source record: 110287

On Tue, 19 Aug 2003 06:07:19 -0400, kd1@sympatico.ca wrote:
>
>How do you know when the reduced units of one computation mean the
>same thing as another?

They are ALWAYS fungible. You can certainly munge up operations to prove otherwise, and it is easy to do with some really long chain of computations.

I would suggest you investigate any of the several really good Mathematics programs, one being Mathcad which offers a huge repository of such Units tools that it uses to the enormous and enthusiastic response by engineers and scientists. There greatest asset is in allowing, you, the user, to enter your measurement in whatever Units your profession is comfortable with, and marry them into a novel situation at the interface to another discipline. How much horse power generator is needed to supply electrical power that is required to move a speaker cone how many inches to compress air to what sound pressure level for it to be just barely discernable to the average listener? That standard could be described as the force necessary to move the eardrum the same distance as the diameter of an Hydrogen Atom.

>
>An example:
>The reduced units of modulus of elasticity (in/in/psi -> psi) is
>the same as the units for stress (psi) and yet modulus of elasticity
>is clearly not stress. And in this case, the unreduced units are
>much more descriptive than the reduced units. Reducing discards
>information.

The Elasticity Modulus is described in kg/mmï¿½ which is not quite MKS, but performing the necessary operation to make it so does not remove any information whatever. If we stick with electronics and discuss the stress mechanics of piezos (crystals), then stress can be described in terms of
(volts/meter) / (newtons/meterï¿½)
>
>On the other hand, Torque (Newton*metres) when multiplied by
>Radians (metre/metre) does give Energy (N*m*m/m -> N*m), but only
>after reduction.

This is negative evidence? It is more a clouded argument.

> And for sure, Torque (N*m) is not the same as
>Energy (N*m).

You are confusing Work and Rotational Statics as being different.
Can you distinguish between Kinetic Energy and Potential Energy
described in mechanical units? If so, both are used to describe the
complete Work equation:
(KE2 - KE1) + (PE2 - PE1) = 0
>
>So sometimes it is appropriate to say the reduced results are the
>same and some times it is not. Is there a way to know when it is
>legal?

Strictly speaking from the point of legality, it is demanded of
Professional Engineers by the National Institutes of Science and
Technology (what was called the National Bureau of Standards or NBS
years ago).

This means that ANY P.E. that describes a physical relation that does
not conform to these scientific concepts, and damage results to that
Professional Engineer's customer, then that P.E. is liable in a court
of law. This form of legality is the whole point of being P.E.s and
the government making the demand that P.E.s be part of describing
engineering codes and performing design review.

Anyone here who has put up a tower has had to jump through this hoop.
One of their principle concerns is found in the CM or Center of
Moment. The employment of Units transformation and reduction is part
and parcel to their activity (How tall? Length. How heavy? Mass and
the constant of Gravity).

The ONLY reason the city, or county insists on this report is to have
someone take the insurance hit if there is an error in meeting code.
Was your tower too tall for the weight of that long lever arm (your
antenna boom and elements) that also created a torque? Did it snap
with wind load? Did the guys snap through poor tensioning? Every one
of these uses Units that eventually boil down to one of the
tower/beam/guy specifications expressed in identical Units. There is
no other way for anyone to put their name to a report qualifying your
tower otherwise - why would they want to jack up their malpractice
payments? And it would be their insurance, not the city's if your
tower fell on a citizen and their heirs sued because of the city's
permission to you to erect it. This is called negligence and is why
your homeowner's insurance would walk away from you for a tower
collapse where the tower was not inspected to code.

If the P.E. met the standards of transforming between various systems
and observed the Physical Constants defined by NIST, then the P.E. is
NOT liable. If the P.E. is not liable, neither is the city/county.
If the P.E. and government are not liable, you have a problem.

>
>What rules have you used to conclude that reducing V/m/A/m to V/A
>is appropriate?
>
>...Keith

Hi Keith,

You probably have no concern for the monolog about P.E.s or you put it behind you long ago. Or so you and others might presume. That's fine and this divergence off into mechanics may help some see the relations but to answer your last question and keep it within the context of the subject line, we should look at another reference that is less remote than NIST and closer to antennas:
"Fields and Waves in Communication Electronics," Ramo, et al.

From page 3 (yes, pretty up front):

"Various systems of units have been used, but hat to be used in this text is the International System (SI for the equivalent in French) introduced by Giorgi in 1901. This is the meter-kilogram-second (mks) system, but the great advantage is that electric quantities are in the units actually measured: coulombs, volts, amperes, etc."

This reference proceeds to describe those Physical Constants and their relations that define Permittivity that I have already fully revealed in a recent posting. If we were to proceed to page 71:

"The quantity known as the magnetic field vector or magnetic field intensity is denoted H [sound familiar folks?- rwc] and is related to the vector B define by the force law (2) through a constant of the medium known as the permeability, ï¿½:
B = ï¿½H
...
"In SI units, force is in newtons (N), Current is in amperes (A) and magnetic flux density B is in tesla (T), which is weber per meter squared or volt second per meter squared and is 10^4 times the common cgs unit, gauss. Magnetic field H is in amperes per meter and ï¿½ is in henrys per meter. ...
The value for ï¿½ for free space is
ï¿½0 = 4 ï¿½ pi ï¿½ 10^-7 ï¿½ H/m"

So, there you have it. Absolutely identical to my other posts. The RF engineering community's usage of free space Z is in full compliance with the standards established and maintained by NIST. Both these sources and standards are employed by commercial engineers and Professional Engineers alike. It makes no sense to do otherwise unless you want to start your own system of measurement that allows a CFA to be 110% efficient. We get many efficiency claims that can ONLY be judged through these associations described.

The chain of relationships proves that the "ohms" described by the Z of free space are identical to the "ohms" used for ANY electrical measurement, among which are the resistance determination of an antenna (for any feed), or the resistance presented by a carbon composition resistor.

73's
Richard Clark, KB7QHC

3546. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:06:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <h1m4kvoqr7te2rovthst10jn366q2qtt2c@4ax.com>
Source record: 110288

On Tue, 19 Aug 2003 15:43:54 GMT, Dave Shrader
<david.shrader@comcast.net> wrote:

>Richard I am very familiar with all you write.
>
>But I have one question: if the 'transmission line' is very short so
>that the 'significant portion of a wavelength' criteria is not met, then
>the capacitive reactance of the line and any inductive reactance in the
>load and the effective Q of the circuit may all come into play. Is it
>possible for a resonant condition to exist? If so, does the reflection
>coefficient have any significance?
>
>Deacon Dave, W1MCE
>

Hi Dave,

Depends on two things. The degree of resolution you demand and the
possibility of end effects (would it be easier to go around instead of
through?).

When I was at the Metrologist Bench, I would be asked "how accurate
can you measure this?" My response was "How much can you afford?"

73's
Richard Clark, KB7QHC

3547. Re: Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:10:34 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhtlma$l1a$1@titan.btinternet.com>
Source record: 110289

Tom, I do hope you will tell us what the correct answer is.

Perhaps we shall then be able to deduce what question you intended to ask
rather than the ambiguous mix-up you actually asked.

Reg.

3548. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:13:27 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308190913.59848aa2@posting.google.com>
Source record: 110290

kd1@sympatico.ca wrote in message news:<3F41F6D7.B1931963@sympatico.ca>...
> "Dr. Slick" wrote:
> >
> > Ohms are still always Ohms, regardless of what you are measuring.
> > And it's very interesting that the E and H fields have units of
> > Volts/meter and Ampere(turn)/meter, which when you divide one by the
> > other, you get basically Volts/ampere, just like you would in a
> > transmission line.
>
> How do you know when the reduced units of one computation mean the
> same thing as another?
>
> An example:
> The reduced units of modulus of elasticity (in/in/psi -> psi) is
> the same as the units for stress (psi) and yet modulus of elasticity
> is clearly not stress. And in this case, the unreduced units are
> much more descriptive than the reduced units. Reducing discards
> information.
>

Not really. Look at this:

http://hyperphysics.phy-astr.gsu.edu/hbase/permot3.html

If you notice, the strain is = delta L/ original L, so the strain
is dimensionless. So Young's modulus actually seems to represent the
N/m**2 (PSI) that is required to elongate something to twice it's
original length: delta L = original L, so that the denominator is 1.

interesting that you bring this up.

> On the other hand, Torque (Newton*metres) when multiplied by
> Radians (metre/metre) does give Energy (N*m*m/m -> N*m), but only
> after reduction. And for sure, Torque (N*m) is not the same as
> Energy (N*m).
>

Hunh?? how did you get radians = m/m?

Look here:

http://www.sinclair.net/~ddavis/170_ps10.html

I admit that this page reminded me that radians are
dimensionless.

So the torque times radians just gives you the work done, which
is in the same units as torque by itself. it's a bit confusing, but
Rotational units are used differently from linear ones (you have the
moment arm), so linear units are force is Newtons or lbs, and work is
in Newton*meters or ft*lbs.

I'm not totally sure, but the reason for this discrepancy seems
to be related to the fact that upon each rotation, you end up at the
same point, so in a certain sense, no work is done. But the crux is
that angles are dimensionless:

http://mathforum.org/library/drmath/view/54181.html

But in either case, rotational or cartesian, the Newton is still
a Newton, and so are the meters.

> So sometimes it is appropriate to say the reduced results are the
> same and some times it is not. Is there a way to know when it is
> legal?
>
> What rules have you used to conclude that reducing V/m/A/m to V/A
> is appropriate?
>
> ...Keith

Basic algebra and cancellation of units. When have you found it
not to be appropriate? I'll admit that it can be a bit confusing
going from cartesian to rotational, and you have to understand the
context, but the UNITS ARE ALWAYS THE SAME. Isn't this the crux of
science and math? That we have certain standards of measurement, so
when we say it's a meter, it's a meter? God, i hope so.

Slick

3549. Re: HB9CV doesn't tune up

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:19:02 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <a_s0b.200065$o%2.92343@sccrnsc02>
Source record: 110293

Gary -

Look at these web sites.

L.B. Cebik, W4RNL basics on the HB9CV antenna.
The HB9CV version of the 2-element phased array appeared in 1961. In Europe, some writers refer to almost any 2-element horizontal phased array as an HB9CV, while the English-speaking world tends to refer to the ZL- Special to mark the genre of antenna. The HB9CV version of the antenna and many variants are widely used in Europe, with Christmas tree stacks for 20- 15-10 meters. Users swear by them, claiming near to, and sometimes better than, 3-element Yagi performance.
http://www.cebik.com/hb.html

There are a number of "copies" and homemade versions
of this antenna on the market
http://www.page.sannet.ne.jp/ja1hwo/ap03/64elhb9cv_e.htm

http://www.alfa-tango.com/ant/hb9.php4

Make sure that the former owner did not "modify" this antenna
http://davidkearns.co.uk/G8TTI/HB9CVdetails.htm

http://www.wimo.de/verteiler-e.htm?s37a_e.htm

This is the 28 MHz version
http://14at259.chez.tiscali.fr/hb9cva1.htm

73 de Greg
w9gb
--
DO NOT use Reply.
Only reply through ARRL forwarding service to W9GB

"Gary Morton" <gary@alma.demon.co.uk> wrote in message
news:rgd0b.918$tv1.8352796@news-text.cableinet.net...
> At the recent FRARS radio rally I bough a cheap HB9CV antenna for 6m (there
> were no 3 element yagis on sale). When I got it home I noticed that a hole had
> worn in the plastic and that some bolts and spacers (for the gamma match
> elements - if that is the right description) had fallen out. My only concern
> was for the spacers to hold the "thin rods" away from the main elements. The
> supplier wasn't particularly helpful. I have a suspicion that the spacing may

> be critical, but the supplier didn't seem knowledgeable.
>
[SNIP]
>
> regards...
>
> --Gary (M1GRY)
>

3550. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:19:46 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308190919.75c67313@posting.google.com>
Source record: 110294

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<BSOdnRc07IJ9PdyiXTWJhA@comcast.com>...
> Why don't you try it? It is easy enough to add impedance between the
> transmitter and SWR meter. Keep the power low, but exactly the same for the
> two cases. In fact, all you would have to do is replace the 50 ohm line
> between the transmitter and meter with 1/4 WL of 75 Ohm line.
>

You mean change the coax from point 1-2? that wouldn't be the same
as changing the PAs output impedance and the impedance of the SWR
meter1.

Slick

3551. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:33:57 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308190933.6b6da0f3@posting.google.com>
Source record: 110295

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<w+bWAtT5GgQ$EAxh@ifwtech.co.uk>...
>
> Now let's simplify it even further:
> 1. PA
> 2. Either SWR meter 1 or SWR meter 2.
> 3. 50 ohm load.
>

You would then have either:

PA--+SWR meter1+50 ohm dummy load
(same Z as PA)

1 2

In which case, this would be equivalent to re-normalizing the
Smith, and as you change the Z of both the PA and SWR meter, you will
absolutely measure a different SWR (you will measure the reflected
power at point 2), going into 50 Ohms believe it or not. Please get
MIMP, it's a free program from Motorola.

Or:

PA--+SWR meter1+50 ohm dummy load
(50 Ohm meter)

1 2

In which case, you would NOT measure the reflected power at point 1
(from the discontinuity from the PA to 50 ohms, because this is before
the meter.
This is the case you guys are talking about, WHICH I TOTALLY AGREE
WITH, as the source Z shouldn't affect the SWR meter in this case.

The point is that it depends on where you measure it!

>
> As Pozar - and countless others - correctly state, rho is a function of
> both the Zl that you're measuring, and the system reference impedance
> Zo. You cannot either measure or calculate rho without first assuming a
> value for Zo; not ever.
>
> Since you have to choose a value of Zo *before* you can calibrate the
> rho-meter, it's not surprising that two differently-calibrated meters
> read differently when connected to the same physical load impedance.
> It's also not surprising that "re-normalizing" the Zo, either on the

> Smith chart or in a computer program, will predict exactly what *both*
> meters should read. You only need to know Zl and the two assumed values
> of Zo for which the respective meters were calibrated.
>

The point is: Zo doesn't have to be 50 ohms necessarily.

> The same would be true even if the terminating impedance Zl was not 50
> ohms as assumed above. The measured values would alter, but the ability
> to predict the readings of both meters would not.
>
> In that respect, you've only been stating the obvious all the time.
>

And i've been told i was wrong from the start! But this is typical
of a NG, isn't it.

> The other part, the apparent belief that a rho- or "SWR" meter will
> change its readings according to the actual, physical source impedance
> from which it's being fed, remains simply incorrect. The meter is only
> affected by the impedance it sees at the downstream (output) side.
>

agreed, but if the meter is the same Z as the PA, you will indeed
measure the discontinuity going to 50 Ohms.

Slick

3552. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:39:31 UTC
From: kd1@sympatico.ca
Message-ID: <3F4260D3.D68D2D00@sympatico.ca>
Source record: 110298

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > In the shorted or open transmission line (from Magid, above), the
> > analogue is two clumps of charge rushing towards each other and meeting
> > at a voltage maximum (current zero). No charge crosses this point
> > (obvious because the current is zero), but the charge coming from each
> > direction builds to a voltage maximum and bounces away again (since
> > like charge repels).
>
> Unfortunately, the analogy is not a good one. In a transmission line,
> there must exist a discontinuity to cause a reversal of momentum of
> the waves. No such discontinuity exists so there is nothing to reverse
> the momentum of the forward and reflected waves.

But then I was not talking waves, but charge. The waves are a
manifestation of the changes in the charge distribution.

> > Not possible since NO energy crosses the zero voltage and zero current
> > points (unless you want to reject Pinst = Vist x Iinst).
>
> Ramo, Whinnery, and Van Duzer disagree. They say that the power
> reflection coefficient is equal to the reflected Poynting vector
> divided by the forward Poynting vector which in this case would
> be unity.

Perhaps. Or they misspoke. Or they have been misinterpreted. Or perhaps
they are wrong.

> > The difficulty I encountered, while trying to understand, is that
> > simultaneously holding the views that:
> > 1) ghosting is caused by reflected energy flowing back along the line;
> > and 2) Pinst = Vinst x Iinst required too much double think.
>
> Life is tough all over. :-) What I am saying doesn't require double
> think. :-)
>
> > Although it seems unrelated, it is worthwhile to consider how to send
> > information along a line without sending energy in the same direction.
>
> Information transfer doesn't require energy?

An intriguing result, isn't it? But clearly energy does not need to flow
in the same direction as the information.

> Methinks you are confusing
> the carriers of the wave with the waves themselves. Zero carriers may
> indeed cross the zero power point, but that does not prevent energy
> from crossing the boundary. It just means that the energy crossing the
> boundary must be equal in both directions.
>
> One point. The power is not Vavg * Iavg.

Correct. I hope I have not given any other impression. For the most
part in my discussions I mean instantaneous power, since conversion to
average loses too much information to enable understanding.

> The power is Vavg*Iave*cos(theta).

This, of course, depends on the waveform and certainly applies to
sinusoids. More complete is to integrate Pinst = Vinst * Iinst and
divide by the time (often chosen, for convenience, to be one cycle).

But for the most part, greater understanding will arise from sticking
with instantaneous energy flow.

> All up and down a shorted lossless transmission line, theta is equal to
> 90 degrees. Around a voltage zero point, on one side the voltage is equal
> to 0.00000001 volts and is 90 degrees out of phase with the current, i.e.
> zero power. On the other side of the voltage zero point, the voltage is
> equal to -0.00000001 volts and is 90 degrees out of phase with the current.
> There are an infinite number of points where the voltage is 90 degrees out
> of phase with the current. That's why the average power is always zero, not
> because the average voltage is zero, but because the voltage is *ALWAYS* 90
> degrees out of phase with the current in a lossless shorted feedline.

But at certain points (1/2 wavelength apart), the voltage IS always 0
so the energy flow IS always 0. Unless you are prepared to discard
Pinst = Vinst * Iinst.

At other points the energy flows forward (when V and I have the same
sign)
for part of the cycle and flows backwards (when V and I have different
sign)
for other parts of the cycle.

> > When the source is not matched, it takes several round trips for the
> > line to settle and ghosting is what you see.
>
> Put an amplifier between the TV set and the feedline. Let the amplifier
> have as high an impedance as possible (insulated gate FET). That will
> cause reflections. Those reflections will still be there during steady-
> state and observing the ghosting will prove that, during steady-state,
> the ghosts have made one or more round trips back to the source where
> they are re-reflected (assuming a mismatched source or a Z0-match
> provided by a network).

Well I suppose I don't mind so much if it is ghosts making the round
trip as long as they don't contain energy. It is certainly true that

the changes in the energy distribution make some round trips. But that is not the same as saying the energy makes the trip.

...Keith

3553. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:41:06 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308190941.5bd48bd6@posting.google.com>
Source record: 110296

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<hDqdnct-JaxmA9yiU-KYvg@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308181844.79528c1e@posting.google.com...
> > tdonaly@aol.com (Tdonaly) wrote in message
> news:<20030818164814.06584.00000162@mb-m28.aol.com>...
> > > Zo doesn't have to be the coax impedance. It can be any impedance
> > > you want. What about interstage-matching networks between FETs? Do
> > > you think there are no reflections there? Should you attempt to match
> > > impedances there? I would think so.
> >
> > You transform the input impedance of the driven stage to the optimum load of
> > the driving stage. Whether that results in a conjugate match is completely
> > immaterial. Trust me, I have done it .
> >

Oh really? Did you use MIMP? or ADS? How did you design your
interstage matching network? what did you start off with? How do you
know a conjugate match didn't matter? What transistors did you use?
Can you show us the data sheets?

Can you show us your design notes please?

> As for the Zo thing, you are trying to misapply the formula.
>
> BTW, the one place where you would think conjugate matching should always
> apply, antenna to receiver input, does not (always). Lowest noise figure
> often occurs at SWRs around 1.5
>
> Tam/WB2TT

Nope. Zo can be anything you want, especially interstage where
you usually don't have/need a 50 ohm transmission line.

Who told you about the lowest NF at a 1.5 SWR? Can you give us a
link?

Why would reflected power at the receive end benefit NF?

Slick

3554. Re: Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 17:43:39 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhtnkboho1@titan.btinternet.com>
Source record: 110297

Maximum power is dissipated in the load when the length of the line is 0 metres.

Am I right, Helmut ?

3555. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:01:40 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308191001.315c6008@posting.google.com>
Source record: 110299

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f419836_6@corp.newsgroups.com>...
>
> > [s11]=rho, rho being just the magnitude of the s11.
>
> I just told you that is not always true.
>
> s11 is the reflection coefficient when a2=0
>
> |rho| is the reflection coefficient when a2=a2
>
> In a Z0-matched system with reflections, they are NOT equal.

You're right, but we are talking about a one-port network, the
antenna and transmission line.

Slick

3556. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:10:38 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308191010.40129a44@posting.google.com>
Source record: 110300

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<2567-3F423294-434@storefull-2315.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "Therefore, the reflected voltage can never be greater than the input
> voltage for a passive network, and the reflection coefficient can never
> be greater than 1 for such a case."
>
> Terman, despite Reg`s disdain for experts, seems to agree with Dr.
> Slick. Here is Terman`s gist:
> 1. The reflected wave is identical to the incident wave except it
> travels toward the generator.
> 2. Ereflected / I reflected = -Zo. Just as Eforward / I forward = Zo

Thank you Richard! You and Richard Clark should be named twin
pillars of reason in a sea of irrationality spurred by the Lust of
Always Being Right.

This is a very important point, that the reflected voltage will
be received by the same impedance that launched it to begin with.

> 3. Line loss causes the reflected wave to decline as it travels toward
> the generator.
> 4. Phase of the reflected wave drops back as distance back from the load
> increases.
> 5. Volts at the load are the sum of the incident and reflected wave
> volts. Likewise for currents.
> 6. E/I at the load equals Zload.
> 7. The vector ratio Ereflected / E incident erquals rho, the reflection
> coefficient..
> 8. In a lossless line, rho is the same everywhere on the line.
> 9. The effect of a reactive load is merely to displace the SWR pattern
> on a transmission line.
> There is no opportunity in the stated conditions on a transmission line
> for a reflected voltage to exceed the incident voltage or for the
> reflection coefficient to exceed one (1).
>
> Best regards, Richard Harrison, KB5WZI

It's really an elegant and simple equation:

[s11]**2 + [s21]**2 = 1

For a lossless passive two port network, where the brackets
indicate magnitude only. If the sum of the squares is less than one,
the network has losses.

Slick

3557. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:12:55 UTC
From: richardharrison@webtv.net
Message-ID: <19439-3F4268A7-199@storefull-2314.public.lawson.webtv.net>
Source record: 110304

Cecil, W5DXP wrote:
"Triactuatedmulticomplicator" or TAMC for short."

I have a suggested update:
"Triactuatedmultiuncomplicator", or TAMU for short.

Best regards, Richard Harrison, KB5WZI

3558. Re: Established knowledge (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:13:13 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308191013.169f242d@posting.google.com>
Source record: 110301

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<wbRGpTAT5hQ$EADC@ifwtech.co.uk>...
...
> It's because we want external, physical, observable, measurable
> reality to prevail.

Amen, Brother Ian. Well, the reality WILL prevail. Some may disagree with it, but it's there for them to see if they look with an open mind. I know for certain that Roy is motivated to post here at least in part to help insure that the newcomers at least have a realistic view of reality to pick from, among those presented. I suppose some of the rest of us have the same motivation. Richard Feynman's (ghostwritten) book, "The Pleasure of Finding Things Out," expresses the concept of opening one's self up to learning through thinking and observing very nicely, I think. I'm always happy to learn that I've been WRONG about something, because after I make the proper correction, other pieces of the puzzle fit together better. It's like being bothered by a piece of a jigsaw puzzle which doesn't quite fit, and then finding the right one: it helps bring order to my world. And when pieces fit all very nicely together, you are much more certain that they are "right," at least at the level you're observing, even when there is possibly an even more unifying viewpoint that could be taken.

Cheers,
Tom

3559. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:25:15 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308191025.7527a23b@posting.google.com>
Source record: 110302

Everything's fine down to point 8, but it's for a line with loss, and
therefore with a characteristic impedance which is reactive, that you
get magnitude of rho greater than unity. You have all the info you
need to show that to yourself with the first few points and additional
fact that load current equals the sum of Ifwd and Irefl at the load.
Just work through the simple algebra to verify the well-known equation
for Vr/Vf, and then plug in Zo = 50-j5 and Zl = 1+j100 and evaluate
the magnitude of Vr/Vf at the load.

Cheers,
Tom

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<2567-3F423294-434@storefull-2315.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "Therefore, the reflected voltage can never be greater than the input
> voltage for a passive network, and the reflection coefficient can never
> be greater than 1 for such a case."
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> Terman, despite Reg`s disdain for experts, seems to agree with Dr.
> Slick. Here is Terman`s gist:
> 1. The reflected wave is identical to the incident wave except it
> travels toward the generator.
> 2. Ereflected / I reflected = -Zo. Just as Eforward / I forward = Zo
> 3. Line loss causes the reflected wave to decline as it travels toward
> the generator.
> 4. Phase of the reflected wave drops back as distance back from the load
> increases.
> 5. Volts at the load are the sum of the incident and reflected wave
> volts. Likewise for currents.
> 6. E/I at the load equals Zload.
> 7. The vector ratio Ereflected / E incident erquals rho, the reflection
> coefficient..
> 8. In a lossless line, rho is the same everywhere on the line.
> 9. The effect of a reactive load is merely to displace the SWR pattern
> on a transmission line.
> There is no opportunity in the stated conditions on a transmission line
> for a reflected voltage to exceed the incident voltage or for the
> reflection coefficient to exceed one (1).
>
> Best regards, Richard Harrison, KB5WZI

3560. Re: RC antenna in confined space

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:26:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b0q4kv880ufqdqpv30f4gjgjcfk1mvg1p3@4ax.com>
Source record: 110303

On 18 Aug 2003 03:47:53 -0700, 17538@student.hhs.se (Bjï¿½rn) wrote:

>In a remote control project, I have a small FM 433.92 MHz sender
>module which according to its specifications requires a "30-35 cm whip
>antenna for 200 meter range in open air". However, I'd like to put the
>antenna INSIDE a plastic box, containing some electronics, which is
>only 5 times 10 times 20 cm, where 5 cm is the height.
>
>I wonder how should I proceed to maximize the range of the
>transmission (of digital signals from the box):

Generally, the advice offered is your best solution.

>
>- Should I squeeze in an antenna horisontally in the box?
>or should I utilize the vertical space available?

You really don't have a choice, you have a need. What is the
polarization of the receive antenna? The two should be the same. If
they are not, your range will plummet to a few meters.

>
>- Should the antenna be as long as possible, or a harmonic division of
>the ideal "30-35 cm"?

Close is enough. If you were off by 20% and it didn't work, then you
have far more problems than the length of the antenna.

>
>- Also, what material should the antenna be made of? And what shape
>(thin/thick, tube/square, solid/hollow)?

thick (thin is ok), tube or square, hollow (solid is ok). Use a
conductor, copper is the easiest to come by, but if you are thinking
metal tape, try it, many successful designs work with it just fine.

>
>- Can I use a loop antenna?

Sure, but it is a lossy loop if it is wrapped around your electronics.
Even with this said, it may not matter anyway, or your problems are
worse than the loss.

>
>Basically, I have no restrictions on the recieving antenna, other than
>distance. How could I design/position it in order to maximize the
>working range from the transmitter?

As I pointed out, they both need be oriented the same way: vertical
for vertical, horizontal for horizontal.

>
>(I hope this question is not malplaced in this forum. Any thought on
>any point above is most welcome!)

Hi Bjï¿½rn,

You are in the right place. It's just others' attentions are fixed to
counting the number of angels dancing on the head of a pin. :-)

I would point out that your original requirement stated you needed a
whip of wire such-and-such long. This presumed that the equipment it
is connected to provides a stable ground reference for it to operate.
Ground for you can mean many things, but for handheld devices (which
have no connection to earth), this ground is simply the bulk of
electronics in the package. This is what makes wrapping an antenna
around them so risky. Many designers do this though, and it works;
however they only want 20 foot range (across a room) and are happy to
sacrifice the remaining 180 feet to achieve it with the antenna
hidden.

If this is point-to-point connection (neither the receiver or
transmitter move), then maximize your receive antenna by using what is
called a yagi style design. This will recover the transmitter's loss
of such hidden antennas and return you your 200 foot range.

73's
Richard Clark, KB7QHC

3561. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:35:55 UTC
From: kd1@sympatico.ca
Message-ID: <3F426E0B.32EA1460@sympatico.ca>
Source record: 110305

"Dr. Slick" wrote:
>
> kd1@sympatico.ca wrote in message news:<3F41F6D7.B1931963@sympatico.ca>...
> > "Dr. Slick" wrote:
> > >
> > > Ohms are still always Ohms, regardless of what you are measuring.
> > > And it's very interesting that the E and H fields have units of
> > > Volts/meter and Ampere(turn)/meter, which when you divide one by the
> > > other, you get basically Volts/ampere, just like you would in a
> > > transmission line.
> > >
> > How do you know when the reduced units of one computation mean the
> > same thing as another?
> > >
> > An example:
> > The reduced units of modulus of elasticity (in/in/psi -> psi) is
> > the same as the units for stress (psi) and yet modulus of elasticity
> > is clearly not stress. And in this case, the unreduced units are
> > much more descriptive than the reduced units. Reducing discards
> > information.
> > >
>
> Not really. Look at this:
>
> http://hyperphysics.phy-astr.gsu.edu/hbase/permot3.html
>
> If you notice, the strain is = delta L/ original L, so the strain
> is dimensionless.

Yes, and no. It was length per length, not, for example, volt per volt
or
pound per pound or ...

So dimensionless quantities are not all the same, even though they are
all dimensionless.

> So Young's modulus actually seems to represent the
> N/m**2 (PSI) that is required to elongate something to twice it's
> original length: delta L = original L, so that the denominator is 1.
>
> interesting that you bring this up.
>
>
> > On the other hand, Torque (Newton*metres) when multiplied by
> > Radians (metre/metre) does give Energy (N*m*m/m -> N*m), but only

> > after reduction. And for sure, Torque (N*m) is not the same as
> > Energy (N*m).
> >
>
> Hunh?? how did you get radians = m/m?

Length of arc divided by radius in MKS units. How quickly we forget when
we get in the habit of leaving out all the units.

After multiplying Torque by Radians, you have computed the length
along the arc through which the force has acted -> energy, of course.

> Look here:
>
> http://www.sinclair.net/~ddavis/170_ps10.html
>
> I admit that this page reminded me that radians are
> dimensionless.
>
> So the torque times radians just gives you the work done, which
> is in the same units as torque by itself. it's a bit confusing, but
> Rotational units are used differently from linear ones (you have the
> moment arm), so linear units are force is Newtons or lbs, and work is
> in Newton*meters or ft*lbs.
>
> I'm not totally sure, but the reason for this discrepancy seems
> to be related to the fact that upon each rotation, you end up at the
> same point, so in a certain sense, no work is done.

Actually, you've done 2*pi*radius*force work. Moving one circumference
times the force.

> But the crux is
> that angles are dimensionless:
>
> http://mathforum.org/library/drmath/view/54181.html
>
> But in either case, rotational or cartesian, the Newton is still
> a Newton, and so are the meters.
>
>
> > So sometimes it is appropriate to say the reduced results are the
> > same and some times it is not. Is there a way to know when it is
> > legal?
> >
> > What rules have you used to conclude that reducing V/m/A/m to V/A
> > is appropriate?
> >
> > ...Keith
>
> Basic algebra and cancellation of units. When have you found it
> not to be appropriate?

It is not appropriate to consider Torque and Work to be the same, though they have the same units.

It is not appropriate to consider modulus of elasticity and pressure to be the same, though they have the same units after simplification.

But after multiplying Torque times Radians it is necessary to simplify to discover that Work is the result.

I conclude that simplification is sometimes necessary and appropriate but other times it is not. I am having difficulty knowing how to know when it is appropriate.

This brings us back to the Ohms of free space and the Ohms of a resistor.

While I don't know whether they are the same or not (and opinion seems divided), it is clear that arguing that they are the same because the units (after simplification) are the same is quite falacious. On the other hand if the units were different, it would be clear that they are not the same.

...Keith

3562. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 18:45:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4271d4_1@corp.newsgroups.com>
Source record: 110306

kd1@sympatico.ca wrote:
> W5DXP wrote:
>
>>kd1@sympatico.ca wrote:
>>>Do not be afraid to admit that you have changed the definition of P = V
>>>x I and therefore do not accept the standard definition.
>>
>>Well, I was taking 'x' as a multiplication sign. Did you mean it as
>>a cross product sign?
>
> No, simple multiply.

Well, then your equation is wrong. It should contain phase. The
power is V*I*cos(theta) which is known to be *AVERAGE* power since
V and I are RMS values. When the total voltage is zero and the total
current is 2*I, the phase angle is still 90 degrees for a lossless
stub.

> In general in circuit analysis, one can
> use superposition to evaluate voltages and currents, but it is quite
> unusual for powers to sum properly at the same time.

They sum perfectly if interference term is taken into account. The
equation becomes something like, e.g.

P1 + P2 + constructive interference = total forward power

P3 + P4 - destructive interference = total reflected power.

This is all explained in _Optics_, by Hecht.

> Oh, the waves are there all right, if you choose to model it so. But,
> they are waves of voltage and current, not power.

How do those waves ever come into existence without a power
source? During the first two seconds when a 100w transmitter is
driving a one second long lossless line, it shoves 200 joules
into the line. What happens to that 200 joules?

> A transmission line with distributed capacitance and inductance is
> somewhat more complex than a voltage source and a capacitor. The
> distributed capacitance and inductance form resonant circuits which
> transfer energy between capacitance and inductance. Just like a
> circuit, if you short the line at any point where the voltage is
> always zero, or open it at any point where the current is always
> zero, nothing is changed.

Of course, something is changed dramatically. You have introduced an extreme impedance discontinuity where there was none before. How you can assert that nothing is changed when something has changed as much as it possibly can change is pretty strange. You have gone from 100% transmission of waves to 100% reflection of waves.

>>Here is an example.
>>
>>source-------------50 ohm coax--------------+----1/4WL stub-----open
>>
>>What mechanism of physics keeps energy from crossing the '+' point? Note
>>that there is no physical impedance discontinuity at point '+'.
>
> The voltage is always 0 so from the most basic of circuit theory,
> the power is zero, so the energy flow is 0. I have some difficulty
> articulating what happens at a current maximum. But if you will permit
> me to move the question back another quarter wavelength to a voltage
> maximum and current minimum, the answer is easy. The voltage on both
> sides of the current minimum are always the same so that no current
> flows, hence no energy flows.

Exactly what mechanism of physics allows a non-changing characteristic impedance to cause reflections? There is no impedance discontinuity. Therefore, there are no reflections. What you need to realize is that no *NET* energy flows but the forward wave has absolutely nothing to interfere with its flow. The reflected wave has absolutely nothing to interfere with its flow. The total voltage and total current is *caused* by the waves. Therefore, the ratio of the total voltage to total current cannot affect their own cause. One more example of confusing cause and effect. All this is obvious when observing ghosting during a TV experiment.

> Rather I disagree with the view that in an open
> or shorted ideal line, energy flows to the end, is reflected back,
> flows back to the start and is reflected again. Repeat. To be even a
> bit stronger, ENERGY does not cross any point where the voltage or
> current is always 0. This is so that the expression P = V x I can
> remain true.

You are again confusing the energy carriers with the wave energy. They are not the same thing. The energy carriers don't cross the boundary (except for random occurrences). But there is no physics mechanism to stop the wave energy from crossing the boundary in both directions. There is nothing there that can reverse the momentum of the waves.

The easiest way to view your mistake is by putting a directional wattmeter half way down a stub. Guess what you will read? We had this discussion on this newsgroup a few months ago. No one could prove that the mouth of the stub has any effect at all on the forward wave and the reflected wave.

> As to your question on standing waves, when a resonant circuit is exited
> with an impulse function, a sinusoidal voltage and current occur in the
> circuit. It does not seem much of a stretch to find a sinusoidal spatial
> distribution of voltage and current in circuit constructed of

> distributed capacitance and inductance (i.e. a transmission line).

The stretch is finding a physics mechanism that will create and sustain
standing waves without a forward wave and a reflected wave. Please describe
in detail how it is done. You need a physics mechanism capable of reversing
the momentum of waves in a constant Z0 environment. Good luck on that one.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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3563. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 19:11:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4277e3_1@corp.newsgroups.com>
Source record: 110307

kd1@sympatico.ca wrote:

> W5DXP wrote:
>>Unfortunately, the analogy is not a good one. In a transmission line,
>>there must exist a discontinuity to cause a reversal of momentum of
>>the waves. No such discontinuity exists so there is nothing to reverse
>>the momentum of the forward and reflected waves.
>
> But then I was not talking waves, but charge. The waves are a
> manifestation of the changes in the charge distribution.

Yes, I know that. When are you going to stop confusing the charge carriers with the waves? :-) The charges have exactly as much to do with the waves as water molecules have to do with water waves. Water molecules don't cross certain boundaries but that doesn't keep tsunamis from wiping out an island.

> Correct. I hope I have not given any other impression. For the most
> part in my discussions I mean instantaneous power, since conversion to
> average loses too much information to enable understanding.

Instantaneous power is essentially useless to this discussion according to Hecht in _Optics_. Here's a quote: "Since the power arriving cannot be measured instantaneously, the detector must integrate the energy flux over some finite time." Irradiance is *average* power.

> But for the most part, greater understanding will arise from sticking
> with instantaneous energy flow.

I hope, for your mental health, that you don't really believe that. :-) If it doesn't work in optics, there is no reason to believe that it will work for other photonic waves, including RF.

> But at certain points (1/2 wavelength apart), the voltage IS always 0
> so the energy flow IS always 0. Unless you are prepared to discard
> Pinst = Vinst * Iinst.

The *NET* energy flow is zero. The component energy flow encounters absolutely nothing that can change its momentum. There are NO impedance discontinuities to cause reflections. It would take a Transmission Line God to do that.

> Well I suppose I don't mind so much if it is ghosts making the round
> trip as long as they don't contain energy. It is certainly true that
> the changes in the energy distribution make some round trips. But that
> is not the same as saying the energy makes the trip.

I had hoped metaphysics wouldn't enter into this discussion. Wave modulation without energy is certainly in the realm of the supernatural. The reflection model is perfectly consistent. All other models seem to contain contradictions. The wave reflection model was fully understood in the 1950's and, at HF, has not been proven wrong. Why discard it?
--
73, Cecil http://www.qsl.net/w5dxp

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3564. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 19:14:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42788a_1@corp.newsgroups.com>
Source record: 110308

Dr. Slick wrote:
> You're right, but we are talking about a one-port network, the
> antenna and transmission line.

Hmmmmmm, I could have sworn that you were talking about the
source impedance. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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3565. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 19:19:45 UTC
From: richardharrison@webtv.net
Message-ID: <15165-3F427851-437@storefull-2312.public.lawson.webtv.net>
Source record: 110311

Richard Clark wrote:
"So how do the "ohms" of free space differ from the "ohms" of a quarter wave monopole`s radiation resistance?"

Terman says something like: the radiation resistance has a value that accepts the same power as the antenna takes when the equivalent resistor is placed in series with the antenna."

Roy Lewallen has already said that the resistance of free-space is the ratio of the E-field to the H-field. Fields relate to the forces they exert. No amps in empty space which has no electrons. Only when a conductor is inserted is there a path for electrons to travel in.

Evidence that antenna impedance does not define radiation is the identical radiation produced by antennas which are very different.

The folded monopole and the quarter-wave vertical are quite different. The monopole is a small squashed loop. The quarter-wave vertical is a single rod. Feed point resistance is 150 ohms for a typical folded unipole and it is 28 ohms for the typical quarter-wave vertical. A look at Arnold Bailey`s catalog shows identical radiation patterns and gain for both antennas.

Best regards, Richard Harrison, KB5WZI

3566. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 19:20:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4279e7$1_1@corp.newsgroups.com>
Source record: 110309

kd1@sympatico.ca wrote:
> Let's apply these expressions to some simple examples.
>
> Connect a length of 50 Ohm transmission line to a 9 Volt battery and
> wait for the transient to die:

Why do you need to obfuscate the discussion by resorting to DC? Why can't you explain things using RF? One previous poster refused to discuss a single source system for some reason. Since reactance disappears during DC steady-state, the relevance of a DC example is certainly questionable. Hint: The Z0 of a piece of coax at DC is NOT 50 ohms.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3567. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 19:29:05 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f427be4$1_1@corp.newsgroups.com>
Source record: 110310

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "Triactuatedmulticomplicator" or TAMC for short."
>
> I have a suggested update:
> "Triactuatedmultiuncomplicator", or TAMU for short.

Richard, when I was there in the 50's, it was TAMC.
My '59 graduation ring says "A&M College of Texas".
Trivia note: At that time, Texas University was a
branch of the Texas A&M system. Gig 'Um!
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3568. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 20:08:04 UTC
From: richardharrison@webtv.net
Message-ID: <2567-3F4283A4-479@storefull-2315.public.lawson.webtv.net>
Source record: 110312

Reading Keith`s posting, somebody wrote:
"The power is Vavg"Iavg"cos(theta)"

This is mistaken. The average value of a sine wave is 0.637 times the peak value. We use 0.707 toimes the peak value of a sine wave, the rms value, which is the effective value, that is, it is as effective as d-c in making power calculations.

The average power must be the same as d-c. This is peak volts times peak amps divided by two, or 1/2 the peak power. 0,707 x 0.707 = 0.5, so we use rms, not avg. volts and amps to calculate average power, which is the same in capability when producing light and heat from resistive devices.

Best regards, Richard Harrison, KB5WZI

3569. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 20:41:10 UTC
From: kd1@sympatico.ca
Message-ID: <3F428B66.B7ACC0ED@sympatico.ca>
Source record: 110313

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > W5DXP wrote:
> > >
> >>kd1@sympatico.ca wrote:
> Well, then your equation is wrong. It should contain phase. The
> power is V*I*cos(theta) which is known to be *AVERAGE* power since
> V and I are RMS values. When the total voltage is zero and the total
> current is 2*I, the phase angle is still 90 degrees for a lossless
> stub.

I see your confusion and apologize for not being completely clear.
When I say P = V * I, P, V and I are instantaneous values, the only
ones worth exploring if an understanding is desired.

> > In general in circuit analysis, one can
> > use superposition to evaluate voltages and currents, but it is quite
> > unusual for powers to sum properly at the same time.
>
> They sum perfectly if interference term is taken into account. The
> equation becomes something like, e.g.

Well, if you do a bit of fudging you can always make it work. But
I do not observe these fudge terms in the expressions related to
forward and reverse power in transmission lines.

> P1 + P2 + constructive interference = total forward power
>
> P3 + P4 - destructive interference = total reflected power.
>
> This is all explained in _Optics_, by Hecht.

Of circuit theory I have a reasonable grasp, optics I leave to others.
It seems to me it should be possible to analyze these linear time
invariant circuits without having to resort to optics.

> > Oh, the waves are there all right, if you choose to model it so. But,
> > they are waves of voltage and current, not power.
>
> How do those waves ever come into existence without a power
> source? During the first two seconds when a 100w transmitter is
> driving a one second long lossless line, it shoves 200 joules
> into the line. What happens to that 200 joules?

As mentioned previously: stored in the line and moving back and
forth between quarter wave boundaries.

> > A transmission line with distributed capacitance and inductance is
> > somewhat more complex than a voltage source and a capacitor. The
> > distributed capacitance and inductance form resonant circuits which
> > transfer energy between capacitance and inductance. Just like a
> > circuit, if you short the line at any point where the voltage is
> > always zero, or open it at any point where the current is always
> > zero, nothing is changed.
>
> Of course, something is changed dramatically.

Back in basic circuit theory, some years ago, it was permitted to
short points of equal voltage and open conductors with no current.
Has this changed in the intervening years?

> You have introduced an
> extreme impedance discontinuity where there was none before. How you
> can assert that nothing is changed when something has changed as much
> as it possibly can change is pretty strange.

Because the observed voltages and currents are the same. The circuit
has been replaced by one which is indistinguishable from the first.

> You have gone from 100%
> transmission of waves to 100% reflection of waves.

An intriguing assertion, but one which can not be demonstrated through
any observations made on the circuit.

> >>Here is an example.
> >>
> >>source-------------50 ohm coax--------------+----1/4WL stub-----open
> >>
> >>What mechanism of physics keeps energy from crossing the '+' point? Note
> >>that there is no physical impedance discontinuity at point '+'.
> >
> > The voltage is always 0 so from the most basic of circuit theory,
> > the power is zero, so the energy flow is 0. I have some difficulty
> > articulating what happens at a current maximum. But if you will permit
> > me to move the question back another quarter wavelength to a voltage
> > maximum and current minimum, the answer is easy. The voltage on both
> > sides of the current minimum are always the same so that no current
> > flows, hence no energy flows.
>
> Exactly what mechanism of physics allows a non-changing characteristic
> impedance to cause reflections? There is no impedance discontinuity.
> Therefore, there are no reflections.

I am not sure why you are looking so hard for reflections. I am not
attempting to claim that there are any. I simply claim that no energy
can cross the boundaries because the current or voltage is always 0.
Basic electriciy. This says nothing about the presence or absence of

reflections or whether there is a mechanism to prevent the energy
crossing the boundary or it just happens through the dynamics of the
distributed capacitance and inductance.

> What you need to realize is that
> no *NET* energy flows but the forward wave has absolutely nothing to
> interfere with its flow. The reflected wave has absolutely nothing to
> interfere with its flow. The total voltage and total current is *caused*
> by the waves. Therefore, the ratio of the total voltage to total current
> cannot affect their own cause. One more example of confusing cause and
> effect. All this is obvious when observing ghosting during a TV experiment.
>
> > Rather I disagree with the view that in an open
> > or shorted ideal line, energy flows to the end, is reflected back,
> > flows back to the start and is reflected again. Repeat. To be even a
> > bit stronger, ENERGY does not cross any point where the voltage or
> > current is always 0. This is so that the expression P = V x I can
> > remain true.
>
> You are again confusing the energy carriers with the wave energy. They
> are not the same thing. The energy carriers don't cross the boundary
> (except for random occurrences). But there is no physics mechanism to stop
> the wave energy from crossing the boundary in both directions. There is
> nothing there that can reverse the momentum of the waves.
>
> The easiest way to view your mistake is by putting a directional wattmeter
> half way down a stub. Guess what you will read?

Oh, I fully understand what a 'directional watt' meter will indicate.

May I suggest that you perform the same experiment with a real
instantaneous
watt meter: one that computes P from V * I. Observe the time variation
of
the real energy flow. When does it flow forward, when does it flow back.
Integrate to obtain the average. Repeat at the quarter and halfwave
points.
Repeat for a line terminated in other than Z0 but not open or short.

Rationalize the observations from the real watt meter with those from
the 'directional watt' meter.

It is also instructive to perform the above experiment with an
instantaneous 'directional watt' meter. That is, what are the
observations
before averaging has been performed and how do they vary with time.

> We had this discussion on
> this newsgroup a few months ago. No one could prove that the mouth of the
> stub has any effect at all on the forward wave and the reflected wave.

I'm sorry, I do not grasp what you are attempting to say here.

...Keith

3570. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 20:42:40 UTC
From: richardharrison@webtv.net
Message-ID: <26767-3F428BC0-67@storefull-2318.public.lawson.webtv.net>
Source record: 110317

Keith wrote:
"While I don`t know whether they are the same or not (and opinion seems divided), it is clear that arguing that they are the same because the units (after simplification) are the same is quite falacious."

Fields and the volts and amps they can produce are locked together. An example is the 1-meter wire best placed to be swept by a radio wave of 1-millivolt per meter will have 1-millivolt induced in the wire.

The field is not identical to a voltage because it requires no conductor to exist, but it has the same value and follows many of the same rules.

Best regards, Richard Harrison, KB5WZI

3571. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:04:50 UTC
From: kd1@sympatico.ca
Message-ID: <3F4290F2.32031BE3@sympatico.ca>
Source record: 110316

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Let's apply these expressions to some simple examples.
> >
> > Connect a length of 50 Ohm transmission line to a 9 Volt battery and
> > wait for the transient to die:
>
> Why do you need to obfuscate the discussion by resorting to DC?

Mostly because a sensible answer should be able to explain from
DC to RF. If it only works at RF but collapses with the much
simply DC, then the answer seems suspect.

Why is there so much protestation about having the answer explain
DC behaviour as well?

> Why can't you explain things using RF?

I like my answers to explain the more complex (RF) as well as the
simpler (DC). As well, applying the answer to the simpler system
sometimes points out absurdities in the answer.

> One previous poster refused to discuss a single source system
> for some reason.

I fully agree. If the explanation works for the more complex system,
it should also work for the simpler.

> Since reactance disappears during DC steady-state, the relevance
> of a DC example is certainly questionable.

Perhaps, but we are dealing with simple circuit theory here using
ideal components. All seems to work.

> Hint: The Z0 of a piece of coax at DC is NOT 50 ohms.

I've seen nothing in the derivations for ideal transmission lines that
indicate frequency dependence. Care to elaborate?

In any case, if you wish to stay away from DC, we could just use an
arbitrarily low AC signal. How about 10**-100 Hertz? Indistinguishable
from DC for any engineering purpose? Or should we go lower? Just pick
the number.

...Keith

3572. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:07:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk54d923fiku43@corp.supernews.com>
Source record: 110314

You've still lost me. If the line loss is negligible when matched, even a high SWR won't increase loss appreciably. That is, in fact, why people use open wire line when the SWR is high. So I don't believe your 3 dB figure is correct. Where did it come from? How was it calculated?

Roy Lewallen, W7EL

Dave Shrader wrote:
> I should have been more specific. The line loss, in a 500 ohm open wire
> tuned feeder system, IF MATCHED, can be assumed to be negligible. The
> presence of the additional losses caused by the amplitudes of the
> reflected components at a VSWR of 10:1 will be about 3 dB.
>
> Is 3 dB negligible? It's approximately 1/2 S unit. Whether or not 3 dB
> is negligible depends on the individual station. I get one judgment if I
> consider QRP and a different judgment if I consider QRO. For me, 3 dB on
> 75/40 is acceptable due to a single antenna limitation and 1 KW output.
>
> Roy, thanks for challenging my 'loose language'.

3573. First Published on the Web

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:08:26 UTC
From: pez <pez7sv@hotmail.com>
Message-ID: <bhu3kd$jj0$1@nic.grnet.gr>
Source record: 110315

First Published on the Web
-
1.
"A Study of a Monopole Antenna with Counterpoise"
http://antennas.ee.duth.gr/diplomatheses/enu/kc/index.htm
-
2.
"Standard Antenna Arrays"
http://antennas.ee.duth.gr/mastertheses/enu/k8k/index.htm
-
Your Comments Are Welcomed.
-
TheDAG

3574. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:16:11 UTC
From: kd1@sympatico.ca
Message-ID: <3F42939B.18A36902@sympatico.ca>
Source record: 110219

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
>
> > W5DXP wrote:
> >>Unfortunately, the analogy is not a good one. In a transmission line,
> >>there must exist a discontinuity to cause a reversal of momentum of
> >>the waves. No such discontinuity exists so there is nothing to reverse
> >>the momentum of the forward and reflected waves.
> >
> > But then I was not talking waves, but charge. The waves are a
> > manifestation of the changes in the charge distribution.
>
> Yes, I know that. When are you going to stop confusing the charge
> carriers with the waves? :-) The charges have exactly as much to do
> with the waves as water molecules have to do with water waves. Water
> molecules don't cross certain boundaries but that doesn't keep tsunamis
> from wiping out an island.

Well, charge does seem to be key. Current is charge per time. Power
is voltage times current. I fail to understand the opposition to
using charge in the discussion. It is a basic element of circuit
theory.

> > Correct. I hope I have not given any other impression. For the most
> > part in my discussions I mean instantaneous power, since conversion to
> > average loses too much information to enable understanding.
>
> Instantaneous power is essentially useless to this discussion
> according to Hecht in _Optics_. Here's a quote: "Since the power
> arriving cannot be measured instantaneously, the detector must
> integrate the energy flux over some finite time." Irradiance is
> *average* power.

This may be a challenge in optics but it is not at the lower AC
frequencies especially in a circuit. My power supplier does it all
the time. And sends me a bill to prove it.

> > But for the most part, greater understanding will arise from sticking
> > with instantaneous energy flow.
>
> I hope, for your mental health, that you don't really believe that. :-)
> If it doesn't work in optics, there is no reason to believe that it
> will work for other photonic waves, including RF.

Actually, I suspect that optics has more to learn from RF than vice
versa
since, with RF, one has the luxury of measuring both voltage and current
(and simultaneously at lower frequencies). Optics seems constrained to
pure average power measurements.

> > But at certain points (1/2 wavelength apart), the voltage IS always 0
> > so the energy flow IS always 0. Unless you are prepared to discard
> > Pinst = Vinst * Iinst.
>
> The *NET* energy flow is zero. The component energy flow encounters absolutely
> nothing that can change its momentum. There are NO impedance discontinuities
> to cause reflections. It would take a Transmission Line God to do that.

It appears that you are prepared to ignore Pinst = Vinst * Iinst. Could
you expand on when Pinst IS equal to Vinst * Iinst and when it isn't?

Simply convince me that Pinst is not always equal to Vinst * Iinst and
my difficultes will disappear.

...Keith

3575. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:21:51 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk557csgabrd9d@corp.supernews.com>
Source record: 110318

p(t) = v(t) * i(t). Period. No phase, no vectors, no cross products.

You can't calculate instantaneous power from phasor quantities, because
phasors assume a frequency that's the same for all quantities, and the
frequency of the power wave is twice that of the voltage and current waves.

Of course, a lot of people mean "average power" when they say "power",
so you have to be very careful when reading anything written by those folks.

Roy Lewallen, W7EL

W5DXP wrote:
> kd1@sympatico.ca wrote:
>
>> W5DXP wrote:
>>
>>> kd1@sympatico.ca wrote:
>>>
>>>> Do not be afraid to admit that you have changed the definition of P = V
>>>> x I and therefore do not accept the standard definition.
>>>
>>>
>>> Well, I was taking 'x' as a multiplication sign. Did you mean it as
>>> a cross product sign?
>>
>>
>> No, simple multiply.
>
>
> Well, then your equation is wrong. It should contain phase. The
> power is V*I*cos(theta) which is known to be *AVERAGE* power since
> V and I are RMS values. When the total voltage is zero and the total
> current is 2*I, the phase angle is still 90 degrees for a lossless
> stub.
> . . .

3576. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:32:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk55rob95kn662@corp.supernews.com>
Source record: 110220

W5DXP wrote:
> kd1@sympatico.ca wrote:
>
>> Let's apply these expressions to some simple examples.
>>
>> Connect a length of 50 Ohm transmission line to a 9 Volt battery and
>> wait for the transient to die:
>
>
> Why do you need to obfuscate the discussion by resorting to DC? Why
> can't you explain things using RF? One previous poster refused to
> discuss a single source system for some reason. Since reactance
> disappears during DC steady-state, the relevance of a DC example is
> certainly questionable. Hint: The Z0 of a piece of coax at DC is
> NOT 50 ohms.
>. . .

It is for the time it takes for the transient to die. Y'see, when you connect a battery to a transmission line, you don't have DC. You only have DC after you wait around forever or, for practical purposes, until everything settles to its final value within some small error bound.

It's also wise to remember that, likewise, when you connect a source to a line, you're not dealing with a single frequency. The system settles down to a single frequency only after all transients have died out. That's why a time domain analysis is necessary, or at least highly preferable, to analyze transient conditions.

But I do agree that, although it's instructive and can help understanding of transmission line phenomena, we have to be careful when extrapolating pulse or step results to sine wave situations -- especially steady state.

Roy Lewallen, W7EL

3577. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:35:37 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5618aetnph9d@corp.supernews.com>
Source record: 110221

I agree that the quoted statement is incorrect, and should say rms instead of avg. And, strictly speaking, should say average power instead of just power. But the average value of a sine wave, assuming no DC offset, is zero, not 0.637 times the peak value.

Roy Lewallen, W7EL

Richard Harrison wrote:
> Reading Keith`s posting, somebody wrote:
> "The power is Vavg"Iavg"cos(theta)"
>
> This is mistaken. The average value of a sine wave is 0.637 times the
> peak value. We use 0.707 toimes the peak value of a sine wave, the rms
> value, which is the effective value, that is, it is as effective as d-c
> in making power calculations.
>
> The average power must be the same as d-c. This is peak volts times peak
> amps divided by two, or 1/2 the peak power. 0,707 x 0.707 = 0.5, so we
> use rms, not avg. volts and amps to calculate average power, which is
> the same in capability when producing light and heat from resistive
> devices.
>
> Best regards, Richard Harrison, KB5WZI
>

3578. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:36:12 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F42984C.B4D34CBE@uci.edu>
Source record: 110228

kd1@sympatico.ca wrote:
> On the other hand, Torque (Newton*metres) when multiplied by
> Radians (metre/metre) does give Energy (N*m*m/m -> N*m), but only
> after reduction. And for sure, Torque (N*m) is not the same as
> Energy (N*m).

Torque is the same as work. Work is energy conversion.

> So sometimes it is appropriate to say the reduced results are the
> same and some times it is not. Is there a way to know when it is
> legal?

Yes. Sorta like knowing when it's legal to carry the one. ;-)

> What rules have you used to conclude that reducing V/m/A/m to V/A
> is appropriate?

Meters cancel meters.

I recently saw somewhere on the web where a given light intensity was converted to the equivalent free space voltage and current. I think it was a response to Dr. Slicks inquiry over on sci.physics.electromag.

....yes, here it is.

http://www.flashrock.com/upload/photong/photong.html

73 de ac6xg

3579. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:42:17 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <Awb6DtO5mpQ$EAnR@ifwtech.co.uk>
Source record: 110231

Dr. Slick wrote:
>"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
>news:<w+bWAtT5GgQ$EAxh@ifwtech.co.uk>...
>>
>> Now let's simplify it even further:
>> 1. PA
>> 2. Either SWR meter 1 or SWR meter 2.
>> 3. 50 ohm load.
>>
>
>
> You would then have either:
>
> PA--+SWR meter1+50 ohm dummy load
> (same Z as PA)
>
> 1 2
>
>
> In which case, this would be equivalent to re-normalizing the
>Smith, and as you change the Z of both the PA and SWR meter,

When you talk about "the Z of the PA", you mean the output impedance.
When you talk about "the Z of the SWR meter", you mean the system
reference impedance Zo for which the meter is calibrated. These are two
completely different physical quantities. It is totally unrealistic to
talk about varying those two quantities together, keeping them
numerically equal like they were on some kind of twin-gang pot.

However, it's not completely beyond the reach of imagination, so let's
imagine for the sake of argument that somehow you could do it...

>you will
>absolutely measure a different SWR (you will measure the reflected
>power at point 2), going into 50 Ohms believe it or not.

Yes, you will indeed see varying values of |rho|/SWR on the meter - but
the point you're missing is this: although your imaginary experiment
involves varying two different values called "Z" at the same time, only
one of them is having any effect!

The changes you see on the meter are *entirely* due to what you're doing
to the meter itself - changing the Zo for which the meter is calibrated.
Changing the output Z of the PA is having *no* effect on the values of
|rho|. It never does.

You can easily demonstrate this in Real Life (tm) by doing what hams do every day - adjust the transmitter, which will change its output Z and its output power; but don't tinker with the calibration Zo of the meter (which is normally factory-adjusted for life). What you will find is that the "forward" and "reflected" readings change, but their ratio |rho| does not (within the limits of accuracy of the meter).

This is effectively the same experiment that I suggested this morning.

>Please get
>MIMP, it's a free program from Motorola.

Look, I've *written* programs like that, so I know exactly what's going on under the hood. What we're witnessing here is a demonstration that such programs can only give answers, not basic understanding. You have created some construct that seems to explain the program output for you; but it will not survive real-life experiments.

>
>
> Or:
>
> PA--+SWR meter1+50 ohm dummy load
> (50 Ohm meter)
>
> 1 2
>
>
> In which case, you would NOT measure the reflected power at point 1
>(from the discontinuity from the PA to 50 ohms, because this is before
>the meter.
> This is the case you guys are talking about, WHICH I TOTALLY AGREE
>WITH, as the source Z shouldn't affect the SWR meter in this case.
>

No, the source Z will not affect the |rho|/SWR reading in *any* case.

Go try it - not on the computer, but on the bench.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3580. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 21:47:58 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk56ocpuejfg90@corp.supernews.com>
Source record: 110222

I find this most interesting. As a P.E. licensed by the state of Oregon (since 1981), I'm aware that I'm subject to state laws governing the code of conduct of Professional Engineers, and all other applicable state laws. I didn't realize that I had legal obligations to NIST, or that any other federal agency has requirements for P.E.s of all states. Would you please provide some reference where I can further research this obligation and the rules it has imposed that I'm legally required to comply with?

Roy Lewallen, W7EL, P.E.

Richard Clark wrote:
> . . .
> Strictly speaking from the point of legality, it is demanded of
> Professional Engineers by the National Institutes of Science and
> Technology (what was called the National Bureau of Standards or NBS
> years ago).
>
> This means that ANY P.E. that describes a physical relation that does
> not conform to these scientific concepts, and damage results to that
> Professional Engineer's customer, then that P.E. is liable in a court
> of law. This form of legality is the whole point of being P.E.s and
> the government making the demand that P.E.s be part of describing
> engineering codes and performing design review.

> . . .

3581. Re: HB9CV doesn't tune up

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:02:26 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <S7x0b.1701$h_2.15819834@news-text.cableinet.net>
Source record: 110223

G.Beat wrote:
> Gary -
>
> Look at these web sites.
>
> L.B. Cebik, W4RNL basics on the HB9CV antenna.
> The HB9CV version of the 2-element phased array appeared in 1961. In Europe,
> some writers refer to almost any 2-element horizontal phased array as an
> HB9CV, while the English-speaking world tends to refer to the ZL- Special to
> mark the genre of antenna. The HB9CV version of the antenna and many
> variants are widely used in Europe, with Christmas tree stacks for 20- 15-10
> meters. Users swear by them, claiming near to, and sometimes better than,
> 3-element Yagi performance.
> http://www.cebik.com/hb.html
>
>
> 73 de Greg
> w9gb

Greg,

thanks for the pointers. I have already used Google to do searches for information on this antenna, but some of your pages were new to me. I see that there is some software to design a HB9CV. This may be helpful in checking the antenna which I bought.

regards...

--Gary

3582. Re: HB9CV doesn't tune up

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:03:46 UTC
From: Gary Morton <gary@alma.demon.co.uk>
Message-ID: <69x0b.1703$h_2.15819834@news-text.cableinet.net>
Source record: 110224

Helgina Koosmaen wrote:

...original message snipped....
>
> As at all radio rallies - its a case of "Caveat Emptor" - Let the Buyer
> Beware.

I don't disagree, particularly since I am still a beginner as far as antenna theory and practice goes.

Can you answer any of my specific questions?

regards...

--Gary

3583. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:10:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42a1d6_7@corp.newsgroups.com>
Source record: 110225

kd1@sympatico.ca wrote:
> I see your confusion and apologize for not being completely clear.
> When I say P = V * I, P, V and I are instantaneous values, the only
> ones worth exploring if an understanding is desired.

Instantaneous power is useless if an understanding is desired.
I agree with Hecht and all my other references. Kraus, Jasik,
Balanis, Hecht, Ramo & Whinnery all agree that dealing with
instantaneous power is a waste of time. Instantaneous power
is essentially meaningless since the definition of power
requires a length of time. There is simply no such thing as
instantaneous power. Power is always the energy passing a
point during a slot of time. Zero energy passes a point in
dt of time as delta-t approaches zero, by definition.

> Well, if you do a bit of fudging you can always make it work. But
> I do not observe these fudge terms in the expressions related to
> forward and reverse power in transmission lines.

Then you haven't read Dr. Best's QEX article. The interference is
there and takes the form of 2*Sqrt(P1)*Sqrt(P2) for 100% constructive
interference.

> Of circuit theory I have a reasonable grasp, optics I leave to others.

Too bad. The field of optics has already solved the problems with which
you are wrestling. Take a look at this web page to figure out how Z0-
matching works.

http://www.mellesgriot.com/products/optics/oc_2_1.htm

> As mentioned previously: stored in the line and moving back and
> forth between quarter wave boundaries.

Mentioned, but not explained. How does the energy's momentum change
direction in a constant Z0 environment? What causes the back and
forth movement?

> Back in basic circuit theory, some years ago, it was permitted to
> short points of equal voltage and open conductors with no current.
> Has this changed in the intervening years?

Ahhhh, I see your confusion. Circuit theory and transmission line
theory are not the same thing. Many have tried to mix the two
models and fallen on their faces. Transmission line theory is
simply more complicated than basic circuit theory. If you don't
believe it, replace a transmission line with ghosting with an

equivalent circuit - the ghosting disappears. Are they really
equivalent?

> Because the observed voltages and currents are the same. The circuit
> has been replaced by one which is indistinguishable from the first.

BS! I can certainly distinguish between a short and a non-shorted
transmission line. Please try again.

>>You have gone from 100%
>>transmission of waves to 100% reflection of waves.
>
> An intriguing assertion, but one which can not be demonstrated through
> any observations made on the circuit.

Of course it can by observing ghosting in a TV signal. With the line
shorted, there is no ghosting. With the line not shorted, there is
ghosting. Why is that so difficult to understand?

> I am not sure why you are looking so hard for reflections. I am not
> attempting to claim that there are any. I simply claim that no energy
> can cross the boundaries because the current or voltage is always 0.

In the real world, if no RF energy crosses a boundary, then that energy
is reflected since it cannot stand still. Of course, the supernatural
world is an entirely different matter.

> Basic electriciy. This says nothing about the presence or absence of
> reflections or whether there is a mechanism to prevent the energy
> crossing the boundary or it just happens through the dynamics of the
> distributed capacitance and inductance.

Unfortunately, this is beyond the ability of basic electricity to
handle. It takes the wave reflection model (or quantum physics) to
handle it. Einstein said a model should be as simple as possible,
but not too simple. Once again, you seem to be trying to force
reality to obey your model instead of vice versa.

> Oh, I fully understand what a 'directional watt' meter will indicate.

Then why are you so confused? :-)

> May I suggest that you perform the same experiment with a real
> instantaneous watt meter:

This is obviously a diversionary tactic. Instantaneous power is
essentially meaningless according to all my references and I
have a bunch of them. Would you care to provide a reference that
seriously deals with instantaneous power in transmission lines?

> I'm sorry, I do not grasp what you are attempting to say here.

That's more than obvious.
--
73, Cecil http://www.qsl.net/w5dxp

"One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike ..." Albert Einstein

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3584. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:14:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42a2a5_7@corp.newsgroups.com>
Source record: 110226

kd1@sympatico.ca wrote:

> W5DXP wrote:
>>Why do you need to obfuscate the discussion by resorting to DC?
>
> Mostly because a sensible answer should be able to explain from
> DC to RF. If it only works at RF but collapses with the much
> simply DC, then the answer seems suspect.

Does the fact that reactance disappears at DC make AC answers suspect?

>>Hint: The Z0 of a piece of coax at DC is NOT 50 ohms.
>
> I've seen nothing in the derivations for ideal transmission lines that
> indicate frequency dependence. Care to elaborate?

You have got to be kidding. At DC, a piece of coax is just two wires.
--
73, Cecil http://www.qsl.net/w5dxp

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3585. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:23:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42a4db_7@corp.newsgroups.com>
Source record: 110227

kd1@sympatico.ca wrote:
> Well, charge does seem to be key.

Sorry, charge is not the key. The charges are simply the medium that
makes the waves possible.

> Actually, I suspect that optics has more to learn from RF than vice
> versa ...

You have got to be kidding. Optics is at the leading edge. RF is at
the trailing edge. Things that are common knowledge in optics are
dismissed by this newsgroup (including you?).

> It appears that you are prepared to ignore Pinst = Vinst * Iinst.

I will go with all my references - instantaneous power is essentially
useless for any kind of serious analysis. Average power is the only thing
that matters at RF and optical frequencies. Please provide a transmission
line reference that extols the virtues of instantaneous RF power.
--
73, Cecil http://www.qsl.net/w5dxp

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3586. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:30:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42a66e$1_7@corp.newsgroups.com>
Source record: 110229

Roy Lewallen wrote:
> p(t) = v(t) * i(t). Period. No phase, no vectors, no cross products.

Millions of power engineers have been taught that V*I*cos(theta) is power.
Are you disagreeing with that teaching? p(t) = v(t) * i(t) is virtually
worthless to a power engineer since a generator is a giant heat sink.

Most of my references say that instantaneous power is virtually meaningless
for RF and optics work. Can you provide a reference that extols the virtues
of instantaneous power applied to RF? Can you list any benefit for considering
instantaneous RF power?
--
73, Cecil http://www.qsl.net/w5dxp

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3587. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:33:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42a708_7@corp.newsgroups.com>
Source record: 110230

Roy Lewallen wrote:

> W5DXP wrote:
>
>> kd1@sympatico.ca wrote:
>>> Connect a length of 50 Ohm transmission line to a 9 Volt battery and
>>> wait for the transient to die:
>>
>> Hint: The Z0 of a piece of coax at DC is NOT 50 ohms.
>
> It is for the time it takes for the transient to die.

Did you not see where he said "wait for the transient to die"?
--
73, Cecil http://www.qsl.net/w5dxp

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3588. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 22:58:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5art3bf1vt84@corp.supernews.com>
Source record: 110232

W5DXP wrote:
>
> Instantaneous power is useless if an understanding is desired.

A number of texts, in presenting analyses that enhance understanding, use both instantaneous power and the instantaneous value of the Poynting vector as part of the explanation. Perhaps you mean that it adds unwelcome complexity to your simplified analysis?

> I agree with Hecht and all my other references. Kraus, Jasik,
> Balanis, Hecht, Ramo & Whinnery all agree that dealing with
> instantaneous power is a waste of time. Instantaneous power
> is essentially meaningless since the definition of power
> requires a length of time. There is simply no such thing as
> instantaneous power.

Instantaneous power is defined in the first half dozen books I pulled from my bookshelf. They were:

Physics: Weidner & Sells
Circuit analysis: Pearson & Maler
Network analysis: Van Valkenburg ("Power, instantaneous" is even indexed)
Electromagnetics: Johnk, Holt, Kraus

You certainly have a lot to straighten us out on in your forthcoming paper!

Power is always the energy passing a
> point during a slot of time. Zero energy passes a point in
> dt of time as delta-t approaches zero, by definition.

By exactly the same reasoning, instantaneous current can't exist, since it has the same relationship to charge as power does to energy. By your argument, we should all through away that "useless" and "boring" analysis using time-varying currents, and deal only with average currents. The new math indeed.

>. . .

Roy Lewallen, W7EL

3589. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 23:00:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5b1692sg4hc3@corp.supernews.com>
Source record: 110233

W5DXP wrote:
> . . .
> This is obviously a diversionary tactic. Instantaneous power is
> essentially meaningless according to all my references and I
> have a bunch of them. Would you care to provide a reference that
> seriously deals with instantaneous power in transmission lines?
>

It was just day before yesterday I posted just such a reference (Magid).
But you seemingly rejected it out of hand as being probably wrong
without making an effort to even look at it. So what's the point in
providing you with references?

Roy Lewallen, W7EL

3590. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 23:03:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5b5s6rit0c0a@corp.supernews.com>
Source record: 110234

W5DXP wrote:
> Roy Lewallen wrote:
>
>> p(t) = v(t) * i(t). Period. No phase, no vectors, no cross products.
>
>
> Millions of power engineers have been taught that V*I*cos(theta) is power.
> Are you disagreeing with that teaching?

Yes.

p(t) = v(t) * i(t) is virtually
> worthless to a power engineer since a generator is a giant heat sink.
>
> Most of my references say that instantaneous power is virtually meaningless
> for RF and optics work. Can you provide a reference that extols the virtues
> of instantaneous power applied to RF? Can you list any benefit for
> considering
> instantaneous RF power?

I've addressed the remainder of this in another posting, except for the
last question. The last question has been the subject of many postings
I've made over the past several months. If your memory needs refreshing,
a Google search should locate them quite easily.

Roy Lewallen, W7EL

3591. ladderline underground??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 23:14:24 UTC
From: Jerry <jerryaa@fbx.com>
Message-ID: <3f42aefd$1@news.lh.net>
Source record: 110235

Is 450 ohm ladderline effective underground if enclosed in underground PVC conduit? It would run from the outside of the shack underground to the base of the antenna, and then run exposed to the feed point of the antenna.

Thanks.

Jerry

3592. Re: Reflection coefficient

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 23:56:16 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vk5e8f5b8tlnb8@corp.supernews.com>
Source record: 110236

The issue of the max. value of the magnitude of the reflection coefficient came up in our student mess. It was shown in lab that it must approach the square root of 5, which is close to 2.41.

But what is all of the noise about reflection coefficient (or SWR), which measures what is happening down stream, having anything at all to do with what is happening up stream. Wow. I have never had a student who was that illogical. However, if I were to encounter such a person at this time of life, I would suggest a career in politics or the UN. My hat is off to those of you who are succeeding in educating the lurkers. I marvel at your restraint towards others.
73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

3593. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 23:58:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5ec85cv975e4@corp.supernews.com>
Source record: 110237

Roy Lewallen wrote:
> . . .
By your
> argument, we should all through away that "useless" . . .

That's "throw", not "through", of course. I really do know better.

Roy Lewallen, W7EL

3594. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-19 23:58:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <skb5kvk2j2ndoqubj2940nj5uo8fe1fikf@4ax.com>
Source record: 110238

On Tue, 19 Aug 2003 14:47:58 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>I find this most interesting. As a P.E. licensed by the state of Oregon
>(since 1981), I'm aware that I'm subject to state laws governing the
>code of conduct of Professional Engineers, and all other applicable
>state laws. I didn't realize that I had legal obligations to NIST, or
>that any other federal agency has requirements for P.E.s of all states.
>Would you please provide some reference where I can further research
>this obligation and the rules it has imposed that I'm legally required
>to comply with?
>
>Roy Lewallen, W7EL, P.E.
>

Hi Roy,

I am wholly unaware of the full scope of your business and contracts
and I have no interest, nor do I think you would volunteer that
information. I cannot recall a single instance of your relating any
experience of yours that revolved around the matters I have discussed,
nor any matters that were professional beyond your product. I cannot
imagine that your product enters into matters of traceability or
authority when I have seen your disclosures that explicitly remove
yourself from liability:
>Legal Disclaimer
>
>The licensee ("Licensee" or "User") acknowledges that the reliability
>of any and all results produced by this software are not precise and
>are subject to significant levels of variability.
...
>LICENSOR HEREBY DISCLAIMS ANY AND ALL WARRANTIES OF
>MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

73's
Richard Clark, KB7QHC

3595. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 00:22:43 UTC
From: kd1@sympatico.ca
Message-ID: <3F42BF53.9ACA4D81@sympatico.ca>
Source record: 110241

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Well, charge does seem to be key.
>
> Sorry, charge is not the key. The charges are simply the medium that
> makes the waves possible.

You do keep saying this without explaining away the need for charge
to flow to make current which makes power which seems to be key to
the question....

> > Actually, I suspect that optics has more to learn from RF than vice
> > versa ...
>
> You have got to be kidding. Optics is at the leading edge. RF is at
> the trailing edge. Things that are common knowledge in optics are
> dismissed by this newsgroup (including you?).

I was mostly responding to your indication that optics had less capable
measurements techniques available. Less measurements typically implies
less understanding.

> > It appears that you are prepared to ignore Pinst = Vinst * Iinst.
>
> I will go with all my references - instantaneous power is essentially
> useless for any kind of serious analysis.

It may be useless for serious analysis, yet violating
Pinst = Vinst * Iinst would seem to draw a lot of electrical engineering
into question.

It does go back to 'double think' unless you can explain how energy
can flow when the power is zero.

> Average power is the only thing
> that matters at RF and optical frequencies. Please provide a transmission
> line reference that extols the virtues of instantaneous RF power.

While I do extol the virtues somewhat, my main concern is that the
expression describing it not be violated. See above.

So I will repeat the challenge:

"It appears that you are prepared to ignore Pinst = Vinst * Iinst. Could
you expand on when Pinst IS equal to Vinst * Iinst and when it isn't?

Simply convince me that Pinst is not always equal to Vinst * Iinst and
my difficultes will disappear."

...Keith

3596. Re: ladderline underground??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 00:30:26 UTC
From: CW <clinton.magers@comcast.net>
Message-ID: <Ciz0b.203737$uu5.36873@sccrnsc04>
Source record: 110239

It's about the same as laying it on the ground. You don't think 3/32" of
plastic is going to make any difference do you?
"Jerry" <jerryaa@fbx.com> wrote in message news:3f42aefd$1@news.lh.net...
> Is 450 ohm ladderline effective underground if enclosed in underground PVC
> conduit? It would run from the outside of the shack underground to the
base
> of the antenna, and then run exposed to the feed point of the antenna.
>
> Thanks.
>
> Jerry
>
>

3597. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 00:34:40 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5gh090t1jfea@corp.supernews.com>
Source record: 110240

It's not apparent to me how your answer relates to the question. Do you mean to say that there are no such requirements? Or that you don't know what they are?

Roy Lewallen, W7EL

Richard Clark wrote:
> On Tue, 19 Aug 2003 14:47:58 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>I find this most interesting. As a P.E. licensed by the state of Oregon
>>(since 1981), I'm aware that I'm subject to state laws governing the
>>code of conduct of Professional Engineers, and all other applicable
>>state laws. I didn't realize that I had legal obligations to NIST, or
>>that any other federal agency has requirements for P.E.s of all states.
>>Would you please provide some reference where I can further research
>>this obligation and the rules it has imposed that I'm legally required
>>to comply with?
>>
>>Roy Lewallen, W7EL, P.E.
>>
>
>
> Hi Roy,
>
> I am wholly unaware of the full scope of your business and contracts
> and I have no interest, nor do I think you would volunteer that
> information. I cannot recall a single instance of your relating any
> experience of yours that revolved around the matters I have discussed,
> nor any matters that were professional beyond your product. I cannot
> imagine that your product enters into matters of traceability or
> authority when I have seen your disclosures that explicitly remove
> yourself from liability:
>
>>Legal Disclaimer
>>
>>The licensee ("Licensee" or "User") acknowledges that the reliability
>>of any and all results produced by this software are not precise and
>>are subject to significant levels of variability.
>
> ...
>
>>LICENSOR HEREBY DISCLAIMS ANY AND ALL WARRANTIES OF
>>MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

>
>
> 73's
> Richard Clark, KB7QHC

3598. Re: ladderline underground??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 00:43:27 UTC
From: Owen Duffy <owen@oda.com.au>
Message-ID: <3F42C42F.6010303@oda.com.au>
Source record: 110242

Jerry wrote:
> Is 450 ohm ladderline effective underground if enclosed in underground PVC
> conduit? It would run from the outside of the shack underground to the base
> of the antenna, and then run exposed to the feed point of the antenna.

One of the techniques for terminating a rhombic is to connect the terminating resistor to the rhombic via a buried transmission line. The loss on the buried line reduces the power requirements for the terminating resistor.

Don't know that I would be burying the line to the antenna. If you use a large enough conduit (dia greater than say 10 times the wire separation) and the line is supported centrally, and you ensure that it will remain dry, it might be acceptable - but somehow, I don't think that was what you had in mind.

Owen

>
> Thanks.
>
> Jerry
>
>

3599. The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 00:53:43 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhugqm$bm0$1@hercules.btinternet.com>
Source record: 110243

Please consider this to be written in red ink, or it may turn out to be my blood.

The interminable arguing about losses in transmitters, tuners, transmission lines, antennas, baluns, matching sections, ground systems, etc., never reach any conclusions because half the time the participants, without being aware of it, are are not talking about the same things. The internal impedance/resistance of the source appears in the arguments and then disappears of its own accord or somebody re-introduces it an attempt to prove a point and then finds it convenient to forget about it. Confusion reigns. Hackles rise. Blood pressure soars. Threats of Legal Action are made.

This is because hardly any of the participants have ever been aware there are two sorts of loss. Education has been neglected. Both can be described in terms of decibels or even S-units. The performance of given black box in a transmission system can be analysed in two different ways, each way usually having a different loss in terms of decibels but when assessing overall performance it is vital to understand which sort of losses are involved.

There are "Transmission Losses" and there are "Insertion Losses."

There will now be raised voices of protest - "This bloody Limey is insulting our intelligence again". "We have read books about Insertion Loss as recommended by our professors". Invitations to tea parties can be expected.

Transmission loss, of course, is that defined by the ratio (Pout) / (Pin) of a network or a single section of a network. Overall loss being the product of the ratios of individual sections. The transmitter's performance is usually unknown, it can be considered to be external to the system and omitted from an analysis.

Insertion loss applies to individual sections of a number of cascaded sections. It is the *change* in overall loss which results from inserting the individual section in a cascade. Numerically it is the difference in dBs between 'before' and 'after' the insertion.

Consider the tuner, an impedance-transforming network. It is clear the insertion loss of a correctly operating tuner is in fact a *Gain* and differs considerably in dBs from overall system loss before it was inserted.

There is an excellent small book which I once read "Transmission Line Transformers" (baluns wound on ferrite cores), which contains many transformer measurements of loss versus frequency. The author states explicitly all measurements are in terms of the loss when a transformer is

inserted between specified generator and load impedances. I venture to guess not a single amateur has ever considered the additional (transmission) loss due such a transformer which may occur when both the generator and terminating impedances are unknown or at least are considerably different from the standard resistances between which the transformer has been designed.

The moral is - don't mix the two sorts of loss when trying to analyse how a transmission system works. Don't use insertion loss formulae anywhere in a system when the transmitter's internal impedance is not known. To use Scattering Matrix and circulator parameters, intended to simplify calculations at UHF and microwaves, is asking for trouble and disagreement. As has been amply demonstrated.

On the other hand, mention of transmitter internal impedance may force an analysis into considering the insertion loss of the feedline which I'm sure would not be welcome. If anybody knows what it is for rice-cakes don't tell anybody.

Reg.

3600. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 00:59:23 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhuh5b$c72$1@hercules.btinternet.com>
Source record: 110244

Has it yet occurred to anybody that changing the load on an ordinary
transmitter also changes its internal impedance ?

3601. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:00:57 UTC
From: Dave Bushong <dbushong@adelphia.net>
Message-ID: <dLz0b.4354$Nc.2895359@news1.news.adelphia.net>
Source record: 110245

No, that's when replies will start being ignored, even if they have the
magic key in Subj line. See www.puremail.com

73,
Dave

W7TI wrote:
> On Mon, 18 Aug 2003 23:38:24 GMT, Dave Bushong <dbushong@adelphia.net>
> wrote:
>
>
>>This file is PureMail protected. To reply to the sender,
>>you MUST include this in the subject line:
>>
>>M321I58DNU 09/06/2003
>
>
> --
>
> This message was sent about three weeks from now, so there's no hurry to
> reply. :-)
>

3602. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:02:08 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <fMz0b.153867$lt4.77422@rwcrnsc51.ops.asp.att.net>
Source record: 110246

Total loss = 10*log((a^2-|rho|^2)/(a(1 - |rho|^2))

ARRL Antenna 18th edition, Chapter 24, Equation 15

Where: a = matched line loss = assumed 1
rho = 0.8181 reflection coefficient for VSWR = 10

+ + +

OOOPPPSSS!!! Math error!

Reviewing my calculations I made a major math error!! Glad I kept the work sheet.

In the numerator I used rho^2 not (1 - rho^2).

Now I am glad I retired from Engineering. :-)

Thanks again Roy!!

Conclusion, after I failed my ALGEBRA course, <sheepish grin>, the additional loss is zero within the stated assumptions. Which just proves I made 'Much ado about Nothing'.

Deacon Dave, W1MCE

I'll say three Hail Mary's and three Our Father's, assuming I can still count to three!!

+ + +

Roy Lewallen wrote:

> You've still lost me. ... Where did it come from? How was it calculated?
>
> Roy Lewallen, W7EL
>

3603. Re: Magnetic Loop Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:05:03 UTC
From: PMac <vk2evb@nella.net.au>
Message-ID: <3f42c943$1@usenet.per.paradox.net.au>
Source record: 110247

Hi Tom, Thanks for your message. I have since borrowed a homebrew loop for camparisons with my trap vertical. (I had to take my trap dipole down) Well to put it straight I am amazed that a small 36" dia transmitting loop on 40 metres works every bit as good as my trapped vertical and with half the noise level. I can actually hear the stations. They give me good reports and when I switch to the vertical closer contacts give weaker reports but on DX they both seem the same. This is with the loop 10 feet high off the ground. Hope that is of interestto you....73 de Peter VK2EVB a loop convert.

"Tom Coates" <tecoates@comcast.net> wrote in message
news:RJ-cncbbWMqQc6GiU-KYvw@comcast.com...
> Monty, N5ESE, has described a loop construction project at
> http://www.io.com/~n5fc/loop_ant.html
>
> I haven't built one myself, but I plan to, once some other things are out
of
> the way. There are other interesting projects and project ideas on Monty's
> site.
>
> Tom, N3IJ
>
>
> "PMac" <vk2evb@nella.net.au> wrote in message
> news:3f3984fa@usenet.per.paradox.net.au...
> > Hi, I am in an area with a fairly high manmade, powerline noise and
> > interference level. I am thinking of building a magnetic loop for 160,
80
> &
> > 40 metres and was hoping that it would not be so susceptible to the
above
> > types of interference. Also the antenna size factor appeals to me but
> > comparisons with a dipole are hard to find. Any comments appreciated.
> >
> > 73 Peter VK2EVB
> >
> >
>
>

3604. Still Looking for crankup/foldover steel or aluminum tower

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:07:44 UTC
From: DOUGLAS SNOWDEN <SNOWDEN@peoplepc.com>
Message-ID: <vk5ieuf7vsmu11@corp.supernews.com>
Source record: 110248
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

Somewhere within range of Richmond VA

Prefer aluminum but a good steel crankup would do if
within my price range.

Doug

N4IJ

3605. Re: Established knowledge (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:16:07 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308191716.5d8795e0@posting.google.com>
Source record: 110249

Ian'
I don't see from what what Reg said that this should have
been unloaded on him in such a way.
I sure hope the " establishment" or "cabal" as I call them
don't follow you and pile it on .
Seems to me that Reg is a giver not a taker as far as ham
radio is concerned, and just as much as a asset to this
group as those wish to fire off a shot at the first
oportunity to give dutch courage to all those that wil
follow.
Now you can stick the label on me also, audacity was it?
After all I did say "cabal" ? What really surprises me is
that you have not noticed over the years how many people have
been attacked so wickedly on this newsgroup by people that
infer that "all is known" to which you whimsically
referred to.
The fact is that is if this were true a thread would
never exceed five postings after a particular expert
had posted. I can only imagine that Reg has not swallowed
all you have said and thus has raised your ire such that
you have lost your cool

Art
A real XG

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<wbRGpTAT5hQ$EADC@ifwtech.co.uk>...
> Reg Edwards wrote:
> >It should not be forgotten this newsgroup is primarily intended for
> >exchange of information between radio amateurs. It is fairly clear
> >there's a number of retired professional engineers who are also radio
> >amateurs who frequent this newsgroup. Fine! I'm a long-retired engineer
> >myself. There are also a sprinkling of engineers who are professionals
> >in that they are paid for their services of some sort or another. There
> >are some people, perhaps with some small historical justification, have
> >the audacity to consider themselves to form an informal Establishment.
>
> Reg, this "Establishment" is something that you just invented. The
> audacity is yours.
>
> Yes, there are people on this newsgroup who agree on lots of technical
> points. And yes, they are often quite insistent about it.
>
> (At this point, I'll change to "we", because I am one of the people
> we're talking about. And despite his chosen role as maverick,

> provocateur and general gadly, so too is Reg ;-)
>
> Nobody knows everything, but each of us has been around for long enough
> to have covered most of the same territory, and to have made all the
> common mistakes. But we've also been around long enough - and been
> persistent enough - to have come out the other end with some correct
> answers.
>
> (Here comes Philosophy of Science in two paragraphs. Please don't give
> me a hard time over the things I'm going to leave out.)
>
> What's a correct answer? One that accurately describes external,
> physical, observable, measurable reality, as nearly as we can measure it
> or need to know. People who take that view are not too comfortable with
> approximations and half-truths, because sooner or later we're going to
> be caught out by a new situation where the "nearly correct" answers
> don't work any more. In the long run, it's simply easier to work out a
> correct answer that can be trusted.
>
> Each of the people Reg is talking about (in fact, especially Reg
> himself) worked out many of those answers for ourselves, way before we
> met on the Internet. But when we did meet, it wasn't at all surprising
> to find ourselves agreeing on so much. That's because all correct
> answers are describing the same physical reality, so they *have* to
> agree. The only allowable difference is to choose different viewpoints
> upon the same reality; but if they are correct, all those alternative
> viewpoints still *must* be consistent with one another - they must *not*
> contradict in even the smallest detail (unless it's acknowledged to
> involve an approximation).
>
> Those rules are rigid, but nobody made them - reality did. The only
> available choice is whether to accept them and stick by them, or to
> sometimes let them slide. I choose to accept them, as much as I possibly
> can, because it's actually easier in the long run. If someone else's
> better logic forces me to re-evaluate, that's really not a problem
> because I'm better-off than before.
>
> Yes, people like that can be rather insistent! But it's not because we
> want our personal faiths or beliefs to prevail - it's not about us at
> all. It's because we want external, physical, observable, measurable
> reality to prevail.
>
> Cue for somebody to pipe up about quantum physics, Heisenberg,
> uncertainty and all that. There are certain areas of science and
> engineering where these apply and even dominate, and mean that certain
> things are fundamentally un-knowable. Antennas, transmission lines and
> electronic engineering are *not* one of those areas. It's an excellent
> approximation to say that everything in these areas of physics and
> engineering is fixed and "real", and - if we work hard enough at it -
> knowable.

>
> The exceptions, such as noise and the internal physics of
> semiconductors, can all be treated by engineers as macro-scale
> observables. A good example is the tunnel diode, which relies on a
> probabilistic quantum phenomenon that just can't happen according to
> classical science... but at the engineering level you can still rely on
> the device data. You don't see "Probably" stamped on each page.
>
> Cue now for someone else to pipe up "But we don't know everything yet."
> No, we don't... but for every genuine new discovery, there are billions
> of mistakes, experimental and logical errors. When straightened out,
> these simply confirm that what we already knew is correct. You'd better
> learn to trust that body of existing knowledge much more that you trust
> yourself! I certainly do, and again life is easier as a result.
>
>
> The good thing about the Internet is that we can all learn much faster
> than before. I certainly have. The bad thing is that we no longer make
> our mistakes in private. Stuff that used to end up as crumpled balls of
> paper, to be thought about more clearly tomorrow, is now being published
> every night to be read by thousands of people and archived forevermore.
> It's becoming harder and harder to identify the good information among
> all the rest.
>
> To anyone who has already made those same mistakes, it seems such a
> waste to see people wandering off and doing it all over again. It's very
> hard to stand by and let it happen...

3606. Re: Reflection coefficient

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:23:36 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhuiin$e8r$1@hercules.btinternet.com>
Source record: 110250

"J. McLaughlin" wrote
> The issue of the max. value of the magnitude of the reflection
> coefficient came up in our student mess. It was shown in lab that it
> must approach the square root of 5, which is close to 2.41.

==========

You don't need a lab. All you need is a pencil and the back of a cigarette packet.

Theoretical Max possible value = 1+Sqrt(2) exactly = 2.4142136 . . . . .

Can't imagine where you get 5 from.

It occurs when line Zo = Ro - jXo has an angle of -45 degrees, ie., when Xo = -Ro, and when the line is terminated in an inductive reactance of +jXo.

Reg.

3607. Re: ladderline underground??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:36:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhujbm$fc3$1@hercules.btinternet.com>
Source record: 110251

Ladder-line will work fine if running down the exact center of a 9- inch or greater diameter plastic or cast-iron or earthenware pipe provided water is kept out of it.

3608. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:40:58 UTC
From: Owen Duffy <owen@oda.com.au>
Message-ID: <3F42D1AA.8060904@oda.com.au>
Source record: 110252

Dave Shrader wrote:
> Total loss = 10*log((a^2-|rho|^2)/(a(1 - |rho|^2))
>
> ARRL Antenna 18th edition, Chapter 24, Equation 15
>
> Where: a = matched line loss = assumed 1

The reference calls quantity "a" the "matched line loss ratio", and a value of 1 means no loss.

Does this mean that you are calculating the line loss in a lossless line?

> rho = 0.8181 reflection coefficient for VSWR = 10
>
> + + +
>
> OOOPPPSSS!!! Math error!
>
> Reviewing my calculations I made a major math error!! Glad I kept the
> work sheet.
>
> In the numerator I used rho^2 not (1 - rho^2).
>
> Now I am glad I retired from Engineering. :-)
>
> Thanks again Roy!!
>
> Conclusion, after I failed my ALGEBRA course, <sheepish grin>, the
> additional loss is zero within the stated assumptions. Which just proves
> I made 'Much ado about Nothing'.
>
> Deacon Dave, W1MCE
>
> I'll say three Hail Mary's and three Our Father's, assuming I can still
> count to three!!
>
> + + +
>
> Roy Lewallen wrote:
>
>> You've still lost me. ... Where did it come from? How was it calculated?
>>
>> Roy Lewallen, W7EL
>>
>

--
==
Owen Duffy (owen@oda.com.au)
Phone: +61 2 6257 3872 (02) 6257 3872
Mobile: +61 417 408 424 0417 408 424
==

3609. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:43:12 UTC
From: Jack Smith <jsmith@mnsinc.com>
Message-ID: <c8j5kv0l3e5pdv8gq6cr785voqjopmhq2o@4ax.com>
Source record: 110253

On Tue, 19 Aug 2003 03:06:15 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Thanks for the analogy.
>
>One can mathematically and conceptually conceive two opposite-traveling
>waves that add up to the observed standing wave, and that's fine. The
>problem comes with assigning power or energy to the waves. Then you run
>into the problem of how one wave got the energy over the barrier into
>the pocket and the other wave took the same amount back out, without
>transfering any air molecules across the barrier in the process.
>
>The average power analysis looks to me something like this. Suppose you
>have two batteries each with exactly 2 volts potential and zero internal
>resistance, with a 2 ohm resistor connected between their positive
>terminals. The negative terminals are connected together. You replace
>the battery on the left with a short (turning it off), and observe that
>the current through the resistor is one amp to the left. Then you hook
>the left hand battery back up and turn the right hand battery "off" by
>replacing it with a short. You observe that there's one amp now flowing
>through the resistor to the right. Finally, turn both batteries "on" by
>putting them both in place. You can use superposition to conclude,
>correctly, that there's zero current flowing in the resistor.
>
>But it's silly to insist that there's a forward two watt "power wave"
>flowing to the right, and another two watt wave flowing to the left. You
>subtract one from the other and, sure enough, get zero. But are the
>"power waves" real? Studying and analyzing these imaginary waves is
>surely a lot more interesting than simply looking at the circuit and
>noting that the "boring" (as Cecil calls it) net power is zero. But
>aren't you studying ghosts?

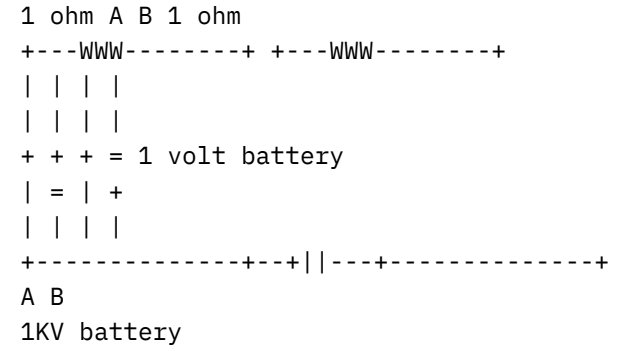
Interesting question, isn't it? It seems to me that this is a class
of problem that is succeptable to solution by several approaches,
classical network theory, or transmission line theory and perhaps
others. Identifying the solution that best matches physically
observable phenominia isn't always obvious. Applying Ockham's Razor
(spell it any of the alternative ways you wish) one might prefer the
simpilist theory that produces correct results.

But, to some extent the artifical conditions necessary in such a
statement are responsible for some of difficulty. I = E/R but as as
you make R zero, you have introduced a singularity into Ohm's law, so
in some sense I isn't determinable. There is also a finite propagation
time for current flow across the resistor, (and through the battery,

for that matter) and that might argue for a transmission line solution.

It also reminds me a bit of the question posed in electromagnetic theory class. You've probably seen it before as well. You have two wires going through the room you are in. With a clamp-on ammeter, you measure 1 amp in each wire, in opposite directions. With a volt meter, you measure 1,000 volts between the two wires. When asked to calculate the power flow, you answer 1,000 watts, being 1KV * 1A.

However, the actual circuit is 4 wires, and you only see two in the room. Two loops of 1 volt batteries with a 1 ohm series resistance, with the two loops bridged via a 1KV source. No current flow from the 1 KV battery and the total power is 2 watts, being 1 watt in each loop. As I recall, the only way to get the correct answer is to properly determine the Poynting vector, but it's damn near 40 years since I looked at it.



You can only see the wires at A-A and B-B.

Jack K8ZOA

>
>Even more risky is adding the things. This time hook two one volt
>batteries in series with the 2 ohm resistor and energize one at a time.
>With the upper one on and the lower one "off" (replaced with a short)
>you get 1/2 amp. You've got a "power wave" of I^2 * R = 1/2 watt. Turn
>the lower one on and the upper one "off", and you get another "power
>wave" of 1/2 watt, in the same direction. Turn them both on, and you
>have a power flow of, um, 2 watts. Welcome to the new math.
>
>Roy Lewallen, W7EL

Sounds like a variation on the old two identical caps with equal charge are shorted together. Where does the excess energy go?

>
>Jack Smith wrote:
>>
>> Roy:
>>
>> Interesting point and I don't recall reading or hearing it elsewhere.
>>

>> The following is dashed off without fully thinking it through, so no
>> warranty on its accuracy.
>>
>> If you think of a sound wave (longitudinal transmission, of course) in
>> a lossless acoustic transmission line terminated with a short, the
>> individual air molecules within each 1/4 wave section are likewise
>> trapped since at the 1/4 wave points there is zero sound pressure.
>> This may be a useful analogy for the electromagnetic transverse
>> propagating T-line.
>>
>> Jack K8ZOA

3610. Re: Magnetic Loop Experiences

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 01:47:00 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bhujuk$g50$1@hercules.btinternet.com>
Source record: 110254

It will work even better on 20m if you can reduce the value of the tuner capacitor.

If you havn't yet downloaded magloop design program MAGLOOP4 from website below you will find it very interesting.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

3611. Re: Tuned Feeder High SWR

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 02:03:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5lo666s9hbd3@corp.supernews.com>
Source record: 110255

Since this is a secular group, three Hail Heavisides and three My Maxwells will suffice. But suppose a couple of Our Ohms thrown in wouldn't hurt. . .

Roy Lewallen, W7EL

Dave Shrader wrote:
> . . .
> I'll say three Hail Mary's and three Our Father's, assuming I can still
> count to three!!

3612. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 02:15:20 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5mdpbu7jq193@corp.supernews.com>
Source record: 110256

As it happens, you've caught me right in the midst of trying to program just that calculation. But it turns out to be a toughie. It involves a couple of Bessel functions -- which aren't a problem in themselves, but the problem is that when the tube diameter is >>> the skin depth, the formulas I've come across so far require subtracting two huge numbers of limited accuracy (even if the wall itself isn't particularly thick in terms of skin depth). So the results I've gotten so far, even with double precision math, are garbage. I've been working at reducing and rearranging the equations, and using asymptotic approximations, but so far no joy.

Anyway, I believe the phenomenon you mention. I've come across it a couple of places. A similar thing happens with the plating of wires, where a relatively poorly conductive plating of the right thickness actually improves the RF conductivity of the wire. The effect, unfortunately, is quite small, as for the case of wall thickness.

Roy Lewallen, W7EL

Reg Edwards wrote:
> Take an ordinary round solid conductor. For well known reasons at
> alternating currents it will have a higher resistance per unit length that
> at DC.
>
> Now, if a round hole is drilled down the centre of the conductor, ie., its
> highly-conductive center is removed, the AC resistance will be REDUCED.
> There are, of course, better ways of producing tubes.
>
> The effect is at a maximum when the wall thickness of the tube is about 1.6
> times skin depth in the material, ie., when an appreciable fraction of the
> current flows on the internal surface. The reduction in resistance is only a
> few percent and for a conductor of given dimensions it affects only the
> lower frequencies.
>
> It has something to do with internal inductance and the relative phases of
> the inside and outside surface currents.
>
> It is likely the effect is considered only when transmission line efficiency
> is of overriding importance, perhaps at power frequencies, the 'hole' in the
> conductor's center being occupied by a steel tensile strength member.
>
> My one and only reference book is Robert Chipman's "Theory and Problems of
> Transmission Lines", 1968, McGraw Hill, where the effect is described in a
> little more graphical detail than above. But the likelihood of obtaining a
> copy of this book is remote

> ----
> Reg, G4FGQ

3613. Re: Still Looking for crankup/foldover steel or aluminum tower

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 02:19:05 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <Ix6cnR7_jKkIR9-iXTWJgA@comcast.com>
Source record: 110257
Cross-posted to: rec.radio.swap,rec.radio.amateur.antenna

Really a nice call - how did you select it?

Tom, N3IJ

"DOUGLAS SNOWDEN" <SNOWDEN@peoplepc.com> wrote in message
news:vk5ieuf7vsmu11@corp.supernews.com...
> Somewhere within range of Richmond VA
>
> Prefer aluminum but a good steel crankup would do if
> within my price range.
>
> Doug
>
> N4IJ
>
>
>

3614. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 02:19:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk5mkrjrttm6dd@corp.supernews.com>
Source record: 110258

David Robbins wrote:
> isn't this the theory behind Litz wire? the claims are that the woven
> insulated strands reduce skin effect... a few sources:
> http://www.mwswire.com/litzmain.htm
> http://www.litz-wire.com/
> http://www.allproducts.com.tw/sup2/sunshine/07.html
> http://www.newenglandelectricwire.com/litzwire.shtml

I don't think so, since it doesn't involve materials of differing
conductivity.

Roy Lewallen, W7EL

>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vk27m059bbpuf0@corp.supernews.com...
>
>>1951? New method?
>>
>>Sorry I don't have that paper. I came across the phenomenon quite by
>>accident while developing delay line compensation networks at Tektronix
>>about a dozen years ago, when I saw that Copperweld wire had noticeably
>>less "dribble-up", as we called the characteristic shape of a step
>>affected by skin effect, than solid copper wire. I concluded at that
>>time that, although interesting and potentially very useful, it would
>>require a range of conductivities that wouldn't be practical to
>>manufacture -- which might be why I've never seen wire made in a way to
>>intentionally reduce skin effect. The general scheme is to make the low
>>frequency resistance higher, to match the high frequency resistance, by
>>reducing the conductivity as you go deeper into the wire. I imagine what
>>Clogston did was to rigorously derive what conductivity function would
>>be required with respect to depth. Perhaps it would be practical to do
>>over a narrower frequency range than I required (DC to 2 GHz in one
>>case, DC to 10 in the other).
>>
>>I'd be interested in seeing the paper also.
>>
>>Roy Lewallen, W7EL
>>
>>Alfred Lorona wrote:
>>
>>>Does anyone have access to Proc. I.R.E., 39, 767 (1951) by A.M. Clogston
>>>describing reduction of skin effect by a new method of laminated wire
>>>construction? Should make interesting reading.
>>>

>>>AL
>>>
>>>
>>
>
>

3615. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 02:29:13 UTC
From: kd1@sympatico.ca
Message-ID: <3F42DCF9.2BFC944F@sympatico.ca>
Source record: 110260

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
>
> > W5DXP wrote:
> >>Why do you need to obfuscate the discussion by resorting to DC?
> >
> > Mostly because a sensible answer should be able to explain from
> > DC to RF. If it only works at RF but collapses with the much
> > simply DC, then the answer seems suspect.
>
> Does the fact that reactance disappears at DC make AC answers suspect?

I didn't think so.

> >>Hint: The Z0 of a piece of coax at DC is NOT 50 ohms.
> >
> > I've seen nothing in the derivations for ideal transmission lines that
> > indicate frequency dependence. Care to elaborate?
>
> You have got to be kidding. At DC, a piece of coax is just two wires.

I will take this as your agreement that Z0 is the same at DC since there
are no frequency dependent terms in the derivation of Z0. After all,
the distributed capacitance and inductance remain the same and they
store
distributed energy at DC just as the do for AC. They are not JUST pieces
of wire.

I find it difficult to understand the reluctance to study the
behaviour of the line for DC. You would typically do this DC analysis
by applying a step function to the line. Depending on the source and
load impedences the line may reach steady state quickly or it may
take forever. The reflection co-efficients all work perfectly for
analyzing the reflections during settling and once the line has
settled, the forward and reverse voltages and currents are present and
can be summed just as for the AC case. The line is storing energy
just as it did for the AC case. Everything works.

Why the resistance to examining this case?

Why the search for excuses so that one need not examine the case?

Are the insights offerred that uncomfortable?

...Keith

3616. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 02:30:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <oa65kvoh8s8jii65v2c737slcu7ntmg578@4ax.com>
Source record: 110259

On Tue, 19 Aug 2003 14:35:55 -0400, kd1@sympatico.ca wrote:

>While I don't know whether they are the same or not (and opinion seems
>divided), it is clear that arguing that they are the same because the
>units (after simplification) are the same is quite falacious. On the
>other hand if the units were different, it would be clear that they
>are not the same.
>
>...Keith

Hi Keith,

Lets just observe a simple, real situation that any Ham may be faced with during a power black-out, or during Field Day. Take for instance a generator. It can give you 1KW of power. You need a gas powered engine to turn the generator. How much horsepower do you need?

The common exchange is 746W per HP for 100% efficient transformation. Thus you need at least 1.34 HP to obtain that kilowatt. What is a horsepower (certainly one of the most ancient of units) compared to these Watts (a relatively modern unit by comparison)? Is there a direct correlation between the power of a horse, and the power of a generator? Yes.

First, a word about multiplication by identities. An identity may also be known in this forum as a conversion factor. One such simple example is time conversion from seconds to minutes and back through:
(1 ï¿½ minute) = (60 ï¿½ second)
the identity is a simple division by one side or the other to leave 1.
A division by minute is a possibility for one identity:
1 = (60 ï¿½ second) / (1 ï¿½ minute)
equally valid would be to divide both original sides by (60 ï¿½ second):
(1 ï¿½ minute) / (60 ï¿½ second) = 1
you can confirm there is no hanky-panky by observing the common expectation that both sides of the equation describe the same thing, thus the identity of (1) over (1) equals 1 --- both times. In other words, the identity describes the same thing by different terms, and those terms are combined to offer a value of 1 (dimensionless).

The process of employing multiplication by 1 (performed below) through the use of identities with the time example described above (meaning you have converted to a form of x = 1 or 1 = x) allows for us to combine and clear terms in shifting from one basis of measurement to another.

To return to our query about the generator and the engine,
1 Horsepower is 33,000 ft-lb/minute. In the old days, a horse had to pull against a known load for a know period of time over a known distance to arrive at this common reference. The popular definition will allow you to see these units already in place:
33,000 ï¿½ foot ï¿½ pound / minute

We begin our trip towards the S of MKS through Units conversions, by casting out minutes with the time identity multiplying this value:
33,000 ï¿½ (foot ï¿½ pound / minute) ï¿½ (1 ï¿½ minute) / (60 ï¿½ s)

Clearing those terms leaves us with:
33,000 ï¿½ foot ï¿½ pound / (60 ï¿½ s)
or
550 ï¿½ foot ï¿½ pound / s
when the minute terms are canceled and the equation has been corrected to using seconds. [I hope many recognize this alternative conversion factor. It proves that nothing is lost through these conversions.]

Next we move toward the K of MKS by casting out pounds:
550 ï¿½ (foot ï¿½ pound / s) ï¿½ (1 ï¿½ kg / 2.205 ï¿½ pound)
This would be tempting to perform, but it would be absolutely wrong! As far as the expression of power in the original statement goes, the identity of pounds and kilograms is incorrect. This is because kilograms express mass and pounds express weight, which is the product of mass times the acceleration due to gravity. The pounds do cancel in the equation above, but the statement is incomplete and should be:
550 ï¿½ (foot ï¿½ pound / s)
ï¿½ (1 ï¿½ kg / 2.205 ï¿½ pound)
ï¿½ (9.807 ï¿½ m / sï¿½)

Combining and casting out terms leaves us with:
2446 ï¿½ foot ï¿½ m ï¿½ kg / sï¿½

Finally, to complete the progress towards MKS, we move toward the M of MKS by casting out foot using the length identity:
2446 ï¿½ foot ï¿½ m ï¿½ kg / sï¿½ ï¿½ (0.3048 ï¿½ m) / (1 ï¿½ foot)

Combining and clearing terms leaves us with:
745.5 ï¿½ mï¿½ ï¿½ kg / sï¿½

THIS is the NIST definition for power, but as such it may be unfamiliar to many (certainly given the angst and denial that attends this discussion). For the comfort of many, we draw in another identity that comes closer to expectations.

That is the identity of Power (also in MKS terms) that reveals itself as joules per second, or newton-meters per second:
(1 ï¿½ Watt) = (1 ï¿½ kg ï¿½ m / sï¿½) ï¿½ (m) / (s)
or
(1 ï¿½ Watt) = (1 ï¿½ kg ï¿½ mï¿½ / sï¿½)
whose identity becomes
(1 ï¿½ Watt) / (1 ï¿½ kg ï¿½ mï¿½ / sï¿½) = 1

We apply this to the power equation above:
745.5 ï¿½ (mï¿½ ï¿½ kg / sï¿½) ï¿½ (Watt) / (kg ï¿½ mï¿½ / sï¿½)
which (guess what?) reduces to:
745.5 Watts

QED

Rounding introduced 0.5 Watt error (the values provided by NIST to their complete precision would eliminate that). It also confirms what we already knew, but few could prove with a linear exercise like this. That's not uncommon however, because few deal with the Physics of the terms they are familiar with, this is the provence of the Metrologist and research scientists, not amateurs.

It is enough to say Watts and Horse Power exhibit a constant of proportionality, but it is wholly wrong to say that electrical Watts are somehow different from an animal's work expended over time.

It is equally in error to maintain that the resistance or Z of free space is somehow remote and different from the resistance of a carbon composition resistor or Radiation Resistance. ALL terms employed in the expression of permittivity and permeability conform to these same linear operations that prove they are congruent.

73's
Richard Clark, KB7QHC

3617. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 03:21:07 UTC
From: kd1@sympatico.ca
Message-ID: <3F42E922.62274A2D@sympatico.ca>
Source record: 110261

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > I see your confusion and apologize for not being completely clear.
> > When I say P = V * I, P, V and I are instantaneous values, the only
> > ones worth exploring if an understanding is desired.
>
> Instantaneous power is useless if an understanding is desired.
> I agree with Hecht and all my other references. Kraus, Jasik,
> Balanis, Hecht, Ramo & Whinnery all agree that dealing with
> instantaneous power is a waste of time. Instantaneous power
> is essentially meaningless since the definition of power
> requires a length of time. There is simply no such thing as
> instantaneous power.

May I recommend differentiation: In the limit, as t approaches 0....
Very useful results can be obtained with this technique.

> Power is always the energy passing a
> point during a slot of time. Zero energy passes a point in
> dt of time as delta-t approaches zero, by definition.
>
> > Well, if you do a bit of fudging you can always make it work. But
> > I do not observe these fudge terms in the expressions related to
> > forward and reverse power in transmission lines.
>
> Then you haven't read Dr. Best's QEX article. The interference is
> there and takes the form of 2*Sqrt(P1)*Sqrt(P2) for 100% constructive
> interference.
>
> > Of circuit theory I have a reasonable grasp, optics I leave to others.
>
> Too bad. The field of optics has already solved the problems with which
> you are wrestling. Take a look at this web page to figure out how Z0-
> matching works.
>
> http://www.mellesgriot.com/products/optics/oc_2_1.htm
>
> > As mentioned previously: stored in the line and moving back and
> > forth between quarter wave boundaries.
>
> Mentioned, but not explained. How does the energy's momentum change
> direction in a constant Z0 environment? What causes the back and
> forth movement?
>

> > Back in basic circuit theory, some years ago, it was permitted to
> > short points of equal voltage and open conductors with no current.
> > Has this changed in the intervening years?
>
> Ahhhh, I see your confusion. Circuit theory and transmission line
> theory are not the same thing. Many have tried to mix the two
> models and fallen on their faces. Transmission line theory is
> simply more complicated than basic circuit theory.

Well, slightly more. The capacitances and inductances are spatially
distributed. Should make the math a bit more complicated but hasn't
introduced anything new.

> If you don't
> believe it, replace a transmission line with ghosting with an
> equivalent circuit - the ghosting disappears. Are they really
> equivalent?

Well if the ghosting disappears, it was not the 'equivalent circuit'.
No surprises there.

> > Because the observed voltages and currents are the same. The circuit
> > has been replaced by one which is indistinguishable from the first.
>
> BS! I can certainly distinguish between a short and a non-shorted
> transmission line. Please try again.

Just to recap, the experiment was: a matched source connected to an open
transmission line. After the source is turned on (and a brief wait for
settling), measure any voltage or current you desire at any point on
the line. I short the points of zero voltage and cut the points with
zero current. You can now remeasure any current or voltage at any
points you choose to tell me whether the shorts or cuts are in or out.

Since you can not tell the difference, the circuit with cuts and opens
is identical to the one without.

> >>You have gone from 100%
> >>transmission of waves to 100% reflection of waves.
> >
> > An intriguing assertion, but one which can not be demonstrated through
> > any observations made on the circuit.
>
> Of course it can by observing ghosting in a TV signal. With the line
> shorted, there is no ghosting. With the line not shorted, there is
> ghosting. Why is that so difficult to understand?

We were, I thought, discussing an open transmission line, not one
carrying a TV signal. You have changed the experiment.

> > I am not sure why you are looking so hard for reflections. I am not
> > attempting to claim that there are any. I simply claim that no energy
> > can cross the boundaries because the current or voltage is always 0.

>
> In the real world, if no RF energy crosses a boundary, then that energy
> is reflected since it cannot stand still. Of course, the supernatural
> world is an entirely different matter.
>
> > Basic electriciy. This says nothing about the presence or absence of
> > reflections or whether there is a mechanism to prevent the energy
> > crossing the boundary or it just happens through the dynamics of the
> > distributed capacitance and inductance.
>
> Unfortunately, this is beyond the ability of basic electricity to
> handle.
>
> It takes the wave reflection model (or quantum physics)

Oh, I don't think we need quantum physics to understand energy
distributions in ideal transmission lines. Let's not scare off
the neophytes.

> to
> handle it. Einstein said a model should be as simple as possible,
> but not too simple. Once again, you seem to be trying to force
> reality to obey your model instead of vice versa.
>
> > Oh, I fully understand what a 'directional watt' meter will indicate.
>
> Then why are you so confused? :-)
>
> > May I suggest that you perform the same experiment with a real
> > instantaneous watt meter:
>
> This is obviously a diversionary tactic.

Not at all. A much better understanding will be had if both the
indications of real wattmeters and 'directional watt' meters are
understood. Limiting yourself to only one instrument limits the
opportunity for full understanding.

> Instantaneous power is
> essentially meaningless according to all my references and I
> have a bunch of them. Would you care to provide a reference that
> seriously deals with instantaneous power in transmission lines?

It's not so hard that you need a text book. V, I, cos(theta) and
a little thinking will suffice. Draw a sine wave for the voltage
and one for the current shifted by 90 degrees. Compute the
power (which will be a new sine wave at double the frequency).
Observe that the power goes positive and negative representing
forward and reverse energy flow. At any instance (at a single point)
the power is either positive or negative. Energy is either flowing
in one direction or the other at any given instance.
And remember that at any point where the voltage or current is

always 0, no energy is ever flowing.

...Keith

3618. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 03:34:07 UTC
From: kd1@sympatico.ca
Message-ID: <3F42EC2F.95EDAD4E@sympatico.ca>
Source record: 110262

Good day Richard,

You have picked an example that simply has different representations
for power. I do not believe there has been any dispute about whether
conversions between different units of power are valid; they are.

The general question is: if two things can be simplified to the same
set of units are they the same thing.

At least two counter examples have been offerred to demonstrate that
just because two things have the same units, they are not the same.

Torque is not work; though they both have N-m as their units.
Modulus of elasticity is not stress; though they are both expressed
as Pascals (after simplification).

This seems sufficient to prove that two things with the same units
are not necessarily the same.

It leaves open the question as to how does one know whether two
things with the same units are the same (or not); a much more
challenging problem, I suspect.

...Keith

Richard Clark wrote:
>
> On Tue, 19 Aug 2003 14:35:55 -0400, kd1@sympatico.ca wrote:
>
> >While I don't know whether they are the same or not (and opinion seems
> >divided), it is clear that arguing that they are the same because the
> >units (after simplification) are the same is quite falacious. On the
> >other hand if the units were different, it would be clear that they
> >are not the same.
> >
> >...Keith
>
> Hi Keith,
>
> Lets just observe a simple, real situation that any Ham may be faced
> with during a power black-out, or during Field Day. Take for instance
> a generator. It can give you 1KW of power. You need a gas powered
> engine to turn the generator. How much horsepower do you need?
>
> The common exchange is 746W per HP for 100% efficient transformation.
> Thus you need at least 1.34 HP to obtain that kilowatt. What is a
> horsepower (certainly one of the most ancient of units) compared to

> these Watts (a relatively modern unit by comparison)? Is there a
> direct correlation between the power of a horse, and the power of a
> generator? Yes.
>
> First, a word about multiplication by identities. An identity may
> also be known in this forum as a conversion factor. One such simple
> example is time conversion from seconds to minutes and back through:
> (1 ï¿½ minute) = (60 ï¿½ second)
> the identity is a simple division by one side or the other to leave 1.
> A division by minute is a possibility for one identity:
> 1 = (60 ï¿½ second) / (1 ï¿½ minute)
> equally valid would be to divide both original sides by (60 ï¿½ second):
> (1 ï¿½ minute) / (60 ï¿½ second) = 1
> you can confirm there is no hanky-panky by observing the common
> expectation that both sides of the equation describe the same thing,
> thus the identity of (1) over (1) equals 1 --- both times. In other
> words, the identity describes the same thing by different terms, and
> those terms are combined to offer a value of 1 (dimensionless).
>
> The process of employing multiplication by 1 (performed below) through
> the use of identities with the time example described above (meaning
> you have converted to a form of x = 1 or 1 = x) allows for us to
> combine and clear terms in shifting from one basis of measurement to
> another.
>
> To return to our query about the generator and the engine,
> 1 Horsepower is 33,000 ft-lb/minute. In the old days, a horse had to
> pull against a known load for a know period of time over a known
> distance to arrive at this common reference. The popular definition
> will allow you to see these units already in place:
> 33,000 ï¿½ foot ï¿½ pound / minute
>
> We begin our trip towards the S of MKS through Units conversions, by
> casting out minutes with the time identity multiplying this value:
> 33,000 ï¿½ (foot ï¿½ pound / minute) ï¿½ (1 ï¿½ minute) / (60 ï¿½ s)
>
> Clearing those terms leaves us with:
> 33,000 ï¿½ foot ï¿½ pound / (60 ï¿½ s)
> or
> 550 ï¿½ foot ï¿½ pound / s
> when the minute terms are canceled and the equation has been corrected
> to using seconds. [I hope many recognize this alternative conversion
> factor. It proves that nothing is lost through these conversions.]
>
> Next we move toward the K of MKS by casting out pounds:
> 550 ï¿½ (foot ï¿½ pound / s) ï¿½ (1 ï¿½ kg / 2.205 ï¿½ pound)
> This would be tempting to perform, but it would be absolutely wrong!
> As far as the expression of power in the original statement goes, the
> identity of pounds and kilograms is incorrect. This is because
> kilograms express mass and pounds express weight, which is the product

> of mass times the acceleration due to gravity. The pounds do cancel
> in the equation above, but the statement is incomplete and should be:
> 550 ï¿½ (foot ï¿½ pound / s)
> ï¿½ (1 ï¿½ kg / 2.205 ï¿½ pound)
> ï¿½ (9.807 ï¿½ m / sï¿½)
>
> Combining and casting out terms leaves us with:
> 2446 ï¿½ foot ï¿½ m ï¿½ kg / sï¿½
>
> Finally, to complete the progress towards MKS, we move toward the M of
> MKS by casting out foot using the length identity:
> 2446 ï¿½ foot ï¿½ m ï¿½ kg / sï¿½ ï¿½ (0.3048 ï¿½ m) / (1 ï¿½ foot)
>
> Combining and clearing terms leaves us with:
> 745.5 ï¿½ mï¿½ ï¿½ kg / sï¿½
>
> THIS is the NIST definition for power, but as such it may be
> unfamiliar to many (certainly given the angst and denial that attends
> this discussion). For the comfort of many, we draw in another
> identity that comes closer to expectations.
>
> That is the identity of Power (also in MKS terms) that reveals itself
> as joules per second, or newton-meters per second:
> (1 ï¿½ Watt) = (1 ï¿½ kg ï¿½ m / sï¿½) ï¿½ (m) / (s)
> or
> (1 ï¿½ Watt) = (1 ï¿½ kg ï¿½ mï¿½ / sï¿½)
> whose identity becomes
> (1 ï¿½ Watt) / (1 ï¿½ kg ï¿½ mï¿½ / sï¿½) = 1
>
> We apply this to the power equation above:
> 745.5 ï¿½ (mï¿½ ï¿½ kg / sï¿½) ï¿½ (Watt) / (kg ï¿½ mï¿½ / sï¿½)
> which (guess what?) reduces to:
> 745.5 Watts
>
> QED
>
> Rounding introduced 0.5 Watt error (the values provided by NIST to
> their complete precision would eliminate that). It also confirms what
> we already knew, but few could prove with a linear exercise like this.
> That's not uncommon however, because few deal with the Physics of the
> terms they are familiar with, this is the provence of the Metrologist
> and research scientists, not amateurs.
>
> It is enough to say Watts and Horse Power exhibit a constant of
> proportionality, but it is wholly wrong to say that electrical Watts
> are somehow different from an animal's work expended over time.
>
> It is equally in error to maintain that the resistance or Z of free
> space is somehow remote and different from the resistance of a carbon
> composition resistor or Radiation Resistance. ALL terms employed in

> the expression of permittivity and permeability conform to these same
> linear operations that prove they are congruent.
>
> 73's
> Richard Clark, KB7QHC

3619. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 03:41:30 UTC
From: richardharrison@webtv.net
Message-ID: <2568-3F42EDEA-156@storefull-2315.public.lawson.webtv.net>
Source record: 110264

Reg, G4FGQ wrote:
"Consider the tuner, an impedance-transforming network. It is clear that the insertion loss of a correctly operating tuner is in fact a "Gain" and differs considerably in dBs from overall system loss before it was installed."

It`s early morning in England so Reg is likely snoozing. He probably wanted to instigate before turning in. I`ll bite. The decibel (dB) expresses gain, loss, and relative power levels. Its logarithmic character allows addition and subtraction to keep track of system gains and losses.

An amplifier can increase power so it can be a +dB insertion in a system. The amplifier is an active device. A tramsformer can change volts and amps by transformation of impedance (V/I), or the transformer can give isolation between circuits.Because the transformer is a passive device, it can`t be a +dB insertion in a system. It must be a -dB insertion in a system despite a "voltage gain" in some cases. A good transformer usually is very efficient, so its power loss is small, but it`s still a loss. The same is usually true of an antenna tuner.

Best regards, Richard Harrison, KB5WZI

3620. Re: Reflection coefficient

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:04:29 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vk5spsrq8ka207@corp.supernews.com>
Source record: 110263

Dear Reg:
Lab equipment was not used. The lab was just a convenient gathering
place with a blackboard. (No cigarettes in our lab or anywhere inside
buildings.)
I suspect that we made an arithmetic error. Need to revisit what we
did - much too late at night right now.
Thanks for the poke. 73 Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bhuiin$e8r$1@hercules.btinternet.com...
> "J. McLaughlin" wrote
> > The issue of the max. value of the magnitude of the reflection
> > coefficient came up in our student mess. It was shown in lab that
it
> > must approach the square root of 5, which is close to 2.41.
>
> ================================
>
> You don't need a lab. All you need is a pencil and the back of a
cigarette
> packet.
>
> Theoretical Max possible value = 1+Sqrt(2) exactly = 2.4142136 . .
. . .
>
> Can't imagine where you get 5 from.
>
> It occurs when line Zo = Ro - jXo has an angle of -45 degrees, ie.,
when Xo
> = -Ro, and when the line is terminated in an inductive reactance of
+jXo.
>
> ----
> Reg.
>
>

3621. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:25:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42f9b1_7@corp.newsgroups.com>
Source record: 110265

Roy Lewallen wrote:
> p(t) = v(t) * i(t).

What is 100 volts at zero degrees multiplied by 2 amps at 90 degrees?
You really want us to believe there is not a cos(90deg) in there
somewhere? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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3622. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:32:01 UTC
From: richardharrison@webtv.net
Message-ID: <1340-3F42F9C1-626@storefull-2311.public.lawson.webtv.net>
Source record: 110169

Roy Lewallen wrote:
"But the avreage value of a sine wave, assuming no DC offset, is zero, not 0.637 times the peak value."

Yes. The value of any undistorted sine wave which is symmetrical about the zero axis is zero over one complete cycle.

0.637 and 0.707 are half-cycle values which are quoted as the average and rms fractions of the peak value of a sine wave in references containing such trivia. I just remember tthat the average in this case is about 0.9x the rms value.

Best regards, Richard Harrison, KB5WZI

3623. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:33:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42fb7f_7@corp.newsgroups.com>
Source record: 110266

Roy Lewallen wrote:
> It was just day before yesterday I posted just such a reference (Magid).
> But you seemingly rejected it out of hand as being probably wrong
> without making an effort to even look at it. So what's the point in
> providing you with references?

I profusely apologize to you, Roy. My Mother died tonight so I couldn't
make it over to Texas A&M. I promise to fulfill your every wish right
after the funeral.
--
73, Cecil http://www.qsl.net/w5dxp

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3624. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:34:52 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42fbcf_7@corp.newsgroups.com>
Source record: 110267

Roy Lewallen wrote:

> W5DXP wrote:
>> Millions of power engineers have been taught that V*I*cos(theta) is
>> power. Are you disagreeing with that teaching?
>
> Yes.

Well then, I guess you and I have nothing further to discuss.
--
73, Cecil http://www.qsl.net/w5dxp

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3625. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:41:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42fd71_7@corp.newsgroups.com>
Source record: 110268

kd1@sympatico.ca wrote:
> It does go back to 'double think' unless you can explain how energy
> can flow when the power is zero.

Already explained. The forward power flow vector is equal to the
reflected power flow vector so the *NET* power is zero just as
explained in Ramo & Whinnery.

> So I will repeat the challenge:
> "It appears that you are prepared to ignore Pinst = Vinst * Iinst. Could
> you expand on when Pinst IS equal to Vinst * Iinst and when it isn't?

Sorry, this appears to be just a diversion from a subject you don't
want to discuss. According to Hecht, Pinst brings nothing of value
to the discussion.
--
73, Cecil http://www.qsl.net/w5dxp

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3626. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:46:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42fea4_7@corp.newsgroups.com>
Source record: 110170

kd1@sympatico.ca wrote:
> Why the resistance to examining this case?

I don't chase irrelevant logical diversions.
--
73, Cecil http://www.qsl.net/w5dxp

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3627. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 04:52:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f42fff2$1_7@corp.newsgroups.com>
Source record: 110171

kd1@sympatico.ca wrote:
> You can now remeasure any current or voltage at any
> points you choose to tell me whether the shorts or cuts are in or out.

That's easy. The line is shorted or cut where the signals disappear.

> Since you can not tell the difference, the circuit with cuts and opens
> is identical to the one without.

I can't tell the difference when someone cuts my transmission line?
Can I have a hit off of whatever you are smokin'?
--
73, Cecil http://www.qsl.net/w5dxp

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3628. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 05:05:43 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk60d5csrj36a2@corp.supernews.com>
Source record: 110172

Goodness, didn't you do this at Texas A & M? Or did they just give you the formula for average power and tell you to forget the rest? But the calculation that follows requires only high school level trigonometry, not engineering mathematics.

v = 100 cos(wt)
i = 2 cos(wt + 90)

v * i = 200 cos(wt)cos(wt + 90)
= 100 cos(-90) + 100 cos(2wt + 90)
= 100 cos(2wt + 90).

What you have here is a sinusoidal waveform of radian frequency 2w, centered about zero. Cos(90) is zero. The result above, the power, or rate of energy transfer, is not zero. It shows that energy moves back and forth at twice the rate of v and i, and that the same amount that moves one way moves back on the alternating cycle.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> p(t) = v(t) * i(t).
>
>
> What is 100 volts at zero degrees multiplied by 2 amps at 90 degrees?
> You really want us to believe there is not a cos(90deg) in there
> somewhere? :-)

3629. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 05:31:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f430920$1_4@corp.newsgroups.com>
Source record: 110173

Roy Lewallen wrote:
> Goodness, didn't you do this at Texas A & M?
> = 100 cos(2wt + 90).

I thought you said there wasn't a cos(90) in there anywhere.
If t=0, there's a cos(90) term.

> What you have here is a sinusoidal waveform of radian frequency 2w,
> centered about zero. Cos(90) is zero. The result above, the power, or
> rate of energy transfer, is not zero. It shows that energy moves back
> and forth at twice the rate of v and i, and that the same amount that
> moves one way moves back on the alternating cycle.

And exactly why is that information important?
--
73, Cecil http://www.qsl.net/w5dxp

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3630. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 05:39:33 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <pQD0b.106732$0v4.7504117@bgtnsc04-news.ops.worldnet.att.net>
Source record: 110174

Richard, perhaps the notion is that use of the tuner increases the power actually delivered to the antenna compared to what would have been delivered in its absence. This is sometimes referred to as reflection gain and results from the presence of more power in the load than the absence of the tuner would permit.

In itself, it the tuner has I^2R losses to be sure, but if the antenna radiates 100 watts with the lossy tuner in place and only 20 watts without it, how wrong it is to claim an insertion gain of 80 watts for the tuner?

This is a common theme in the notion of conjugate matching in which mismatch loss is compensated by reflection gain caused by appropriate tuner parameters, etc.

Again, words tend to mean what people expect them to mean and sometimes people don't agree on seemingly common words like gain and loss.

--
73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

"Richard Harrison" <richardharrison@webtv.net> wrote in message news:2568-3F42EDEA-156@storefull-2315.public.lawson.webtv.net...
> Reg, G4FGQ wrote:
> "Consider the tuner, an impedance-transforming network. It is clear that
> the insertion loss of a correctly operating tuner is in fact a "Gain"
> and differs considerably in dBs from overall system loss before it was
> installed."
>
> It`s early morning in England so Reg is likely snoozing. He probably
> wanted to instigate before turning in. I`ll bite. The decibel (dB)
> expresses gain, loss, and relative power levels. Its logarithmic
> character allows addition and subtraction to keep track of system gains
> and losses.
>
> An amplifier can increase power so it can be a +dB insertion in a
> system. The amplifier is an active device. A tramsformer can change
> volts and amps by transformation of impedance (V/I), or the transformer
> can give isolation between circuits.Because the transformer is a passive
> device, it can`t be a +dB insertion in a system. It must be a -dB
> insertion in a system despite a "voltage gain" in some cases. A good
> transformer usually is very efficient, so its power loss is small, but
> it`s still a loss. The same is usually true of an antenna tuner.

>
> Best regards, Richard Harrison, KB5WZI
>

3631. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 05:39:59 UTC
From: richardharrison@webtv.net
Message-ID: <2567-3F4309AF-537@storefull-2315.public.lawson.webtv.net>
Source record: 110181

Keith wrote:
"It does go back to "double think" unless you can explain how energy can flow when power is zero."

Think! The only way the voltage can go to zero on a good transmission line which is energized is by interference between an incident wave and a reflected wave. Zero volts on the line is merely a manifestation of VSWR.

Forward (incident) power and reverse (reflected) power are both on the line. A zero voltage on the line requires a complete load reflection so that the reflection volts are as strong as the forward volts.

A directional coupler, at the very spot where a slotted line probe would sense zero volts, would show you have full power (with its volts and amps) coming and going.

In reality there is not zero volts in the incident wave or in the reflected wave. There`s full voltage coming and going. The volts just happen to be out-of-phase at this point.

Best regards, Richard Harrison, KB5WZI

3632. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 05:45:28 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <YVD0b.106067$3o3.7436160@bgtnsc05-news.ops.worldnet.att.net>
Source record: 110175

I would sell mine for no less than a ridiculous sum considering their availability. I think I bought mine for $2 at a library book sale many years ago! Of all the texts I have studied and use for reference, Chipman is the first I turn to almost all the time.

--
73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vk5mdpbu7jq193@corp.supernews.com...
> As it happens, you've caught me right in the midst of trying to program
> just that calculation. But it turns out to be a toughie. It involves a
> couple of Bessel functions -- which aren't a problem in themselves, but
> the problem is that when the tube diameter is >>> the skin depth, the
> formulas I've come across so far require subtracting two huge numbers of
> limited accuracy (even if the wall itself isn't particularly thick in
> terms of skin depth). So the results I've gotten so far, even with
> double precision math, are garbage. I've been working at reducing and
> rearranging the equations, and using asymptotic approximations, but so
> far no joy.
>
> Anyway, I believe the phenomenon you mention. I've come across it a
> couple of places. A similar thing happens with the plating of wires,
> where a relatively poorly conductive plating of the right thickness
> actually improves the RF conductivity of the wire. The effect,
> unfortunately, is quite small, as for the case of wall thickness.
>
> Roy Lewallen, W7EL
>
> Reg Edwards wrote:
> > Take an ordinary round solid conductor. For well known reasons at
> > alternating currents it will have a higher resistance per unit length
that
> > at DC.
> >
> > Now, if a round hole is drilled down the centre of the conductor, ie.,
its
> > highly-conductive center is removed, the AC resistance will be REDUCED.
> > There are, of course, better ways of producing tubes.
> >
> > The effect is at a maximum when the wall thickness of the tube is about

1.6
> > times skin depth in the material, ie., when an appreciable fraction of
the
> > current flows on the internal surface. The reduction in resistance is
only a
> > few percent and for a conductor of given dimensions it affects only the
> > lower frequencies.
> >
> > It has something to do with internal inductance and the relative phases
of
> > the inside and outside surface currents.
> >
> > It is likely the effect is considered only when transmission line
efficiency
> > is of overriding importance, perhaps at power frequencies, the 'hole' in
the
> > conductor's center being occupied by a steel tensile strength member.
> >
> > My one and only reference book is Robert Chipman's "Theory and Problems
of
> > Transmission Lines", 1968, McGraw Hill, where the effect is described in
a
> > little more graphical detail than above. But the likelihood of obtaining
a
> > copy of this book is remote
> > ----
> > Reg, G4FGQ
>

3633. 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 05:46:54 UTC
From: antennas@yahoo.com
Message-ID: <e8be44e3.0308192146.7b80aa52@posting.google.com>
Source record: 110176

I have an old Shakespear 32 ft antenna. Fed at side near bottom and a large bottom plate. Want to know if I mount it up at the top of a mast how long should I make radial wires for? Do I just calculate for lowest freq and make them 1/8 wavelength? I am going to run it through my tuner to get as many bands out of it as I can. Only about 40ft of coax so it is not too long.
Or should I try and design my own trap vertical of some sort??
Thanks.
Andrew VE8AE

3634. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 05:47:34 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308192147.595fef57@posting.google.com>
Source record: 110177

kd1@sympatico.ca wrote in message news:<3F426E0B.32EA1460@sympatico.ca>...
> >
> > If you notice, the strain is = delta L/ original L, so the strain
> > is dimensionless.
>
> Yes, and no. It was length per length, not, for example, volt per volt
> or
> pound per pound or ...
>

But it's still dimensionless, a "pure number" as they call it.

> So dimensionless quantities are not all the same, even though they are
> all dimensionless.
>

In context, i would agree, but they are still just pure numbers.

> >
> > Hunh?? how did you get radians = m/m?
>
> Length of arc divided by radius in MKS units. How quickly we forget when
> we get in the habit of leaving out all the units.
>

ok, length of angle divided by length of radius, that's right.

> After multiplying Torque by Radians, you have computed the length
> along the arc through which the force has acted -> energy, of course.
>
>
> Actually, you've done 2*pi*radius*force work. Moving one circumference
> times the force.
>

Actually, thats 2*pi*radius*force*moment arm. Right.

> > > ...Keith
> >
> > Basic algebra and cancellation of units. When have you found it
> > not to be appropriate?
>
> It is not appropriate to consider Torque and Work to be the same, though
> they have the same units.
>

Your point it well taken, but cancellation of units has always worked for me, and everyone else i went to college and high school with.

And I admit that a wave traveling in a transmission line is different from an EM wave traveling through space. All i'm saying is that the E field is defined by a voltage potential field, and the H field by amperes, so to say that the E field has nothing to do with voltage potential is a wrong statement in my opinion. And it's still ohms for the impedance.

> It is not appropriate to consider modulus of elasticity and pressure
> to be the same, though they have the same units after simplification.
>
> But after multiplying Torque times Radians it is necessary to simplify
> to discover that Work is the result.
>
> I conclude that simplification is sometimes necessary and appropriate
> but other times it is not. I am having difficulty knowing how to know
> when it is appropriate.
>
> This brings us back to the Ohms of free space and the Ohms of a
> resistor.
>
> While I don't know whether they are the same or not (and opinion seems
> divided), it is clear that arguing that they are the same because the
> units (after simplification) are the same is quite falacious. On the
> other hand if the units were different, it would be clear that they
> are not the same.
>
> ...Keith

It's a difficult question, and i'm glad we are discussing it. All i'm saying is, the units have to be the same, where ever you use them.

Slick

3635. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 06:01:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u5s5kvoqtdrq3b3l83b1g8lqkokhbslj0p@4ax.com>
Source record: 110178

On Tue, 19 Aug 2003 23:34:07 -0400, kd1@sympatico.ca wrote:

>Good day Richard,
>
>You have picked an example that simply has different representations
>for power. I do not believe there has been any dispute about whether
>conversions between different units of power are valid; they are.
>
>The general question is: if two things can be simplified to the same
>set of units are they the same thing.
>At least two counter examples have been offerred to demonstrate that
>just because two things have the same units, they are not the same.
>
>Torque is not work; though they both have N-m as their units.

If you take a solid axle, fix it at one end and twist at the other, Torque is the plastic deformation in the form of that twist being distributed along the length of the axle as shearing stress. That twist allows for some rotation at the end where the rotational force is applied and that is obviously work. I know, I've calibrated 100's of Torque wrenches (mostly micrometer click wrenches) from 15 pound-in to a 600 pound-ft and broke a bench doing it.

>Modulus of elasticity is not stress; though they are both expressed
>as Pascals (after simplification).

This has a close association with your observation above, so I will continue with the same model. But first, the definitions that you seem to accept, but tied into this discussion. From "University Physics," Sears and Zemansky, containing a chapter called "Elasticity" whose second section is titled "Stress" (the first section is titled "Introduction").

"Stress is a force per unit area."

"Strain. ...refers to the relative change in dimensions ... subjected to stress." As this is distance over distance, strain has no dimension (the units cancel as has been pointed out by others).

"Elastic modulus. The ratio of a stress to the corresponding strain is called an elastic modulus. ... Since a strain is a pure number, the units of Young's modulus are the same as those of stress, namely, force per unit area. Tabulated values are usually in lb/inï¿½ or dynes/cmï¿½."

Returning to that same axle. We score a line along its length from free end to fixed end with a scribe that travels a path parallel to

the axis. We apply some force, hold it, and scribe a second line. We go to the middle of its length and scribe two lines around the circumference of the axle (a short distance apart). These last two lines describe opposite shears due to torsion. The stress varies as a function of depth into the axle (greater at the periphery, less in the interior). We then examine the enclosed area which describes a twist per length (area for the applied force - stress). The axial lines are parallel to the compression and the circumferential lines are parallel to the tension. If this axle were made of wood, it would fail under compression when its elasticity was pushed beyond its limit. In comparison, it would also exhibit a larger rotational displacement with the same force applied to an iron axle.

The last observation is simply reduced, or normalized as described above in the definition of modulus and what you obtain for the two materials is either a constant force with different rotational displacements (and different scribed areas); or the same rotational displacement (constant scribed areas) with different applied forces. You still have torsion, you still have stress and strain, and you still have rotational displacement - the only difference is in the material's characteristic which is described by the modulus.

>
>This seems sufficient to prove that two things with the same units
>are not necessarily the same.

It proves you have two different materials which is the point of a modulus in any discipline.

>
>It leaves open the question as to how does one know whether two
>things with the same units are the same (or not); a much more
>challenging problem, I suspect.
>
>...Keith

Hi Keith,

The only question is what is different, the why follows from fairly obvious implications of being material based. Your problem is in the definition of the application of the terms, not their expressions. You might want to consult a slim volume called
"Elements of Strength of Materials," Timoshenko.

You will note that this bears no relation to ohms being different, because as you observed with the horsepower example, it is simply flipping through translations until you hit the units you want.

73's
Richard Clark, KB7QHC

3636. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 06:11:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ku36kv8riebmq77ltcolp90sm6fnl45tan@4ax.com>
Source record: 110179

On Wed, 20 Aug 2003 00:53:43 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

> I venture to
>guess not a single amateur has ever considered the additional (transmission)
>loss due such a transformer which may occur when both the generator and
>terminating impedances are unknown or at least are considerably different
>from the standard resistances between which the transformer has been
>designed.

It is largely true, but it sure demonstrates your not having followed
recent correspondence to that exact matter. -ehh- You will observe
no more quarter than I found. ;-)

73's
Richard Clark, KB7QHC

3637. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 06:15:57 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308192215.654ebf2@posting.google.com>
Source record: 110180

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<Awb6DtO5mpQ$EAnR@ifwtech.co.uk>...
> >
> >
> > You would then have either:
> >
> > PA--+SWR meter1+50 ohm dummy load
> > (same Z as PA)
> >
> > 1 2
> >
> >
>
> The changes you see on the meter are *entirely* due to what you're doing
> to the meter itself - changing the Zo for which the meter is calibrated.
> Changing the output Z of the PA is having *no* effect on the values of
> |rho|. It never does.
>

Nope. you are just changing where the reflections actually happen,
either before or after the SWR meter. In one case you measure it, in
another you don't. As simple as that.

> >Please get
> >MIMP, it's a free program from Motorola.
>
> Look, I've *written* programs like that, so I know exactly what's going
> on under the hood. What we're witnessing here is a demonstration that
> such programs can only give answers, not basic understanding. You have
> created some construct that seems to explain the program output for you;
> but it will not survive real-life experiments.
>

Oh REALLY? I'd like to see this program you have written. I doubt
you could give it to us, as your knowledge of the Smith obviously
shows.

Slick

3638. Re: Established knowledge (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 08:36:52 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <j5sixICkMzQ$EACj@ifwtech.co.uk>
Source record: 110182

Art Unwin KB9MZ wrote:
>I don't see from what what Reg said that this should have been unloaded
>on him in such a way. I sure hope the " establishment" or "cabal" as I
>call them
> don't follow you and pile it on . Seems to me that Reg is a giver not
>a taker as far as ham radio is concerned, and just as much as a asset
>to this group as those wish to fire off a shot at the first oportunity
>to give dutch courage to all those that wil follow.
> Now you can stick the label on me also, audacity was it? After all I
>did say "cabal" ? What really surprises me is that you have not noticed
>over the years how many people have been attacked so wickedly on this
>newsgroup by people that infer that "all is known" to which you
>whimsically referred to.
> The fact is that is if this were true a thread would never exceed
>five postings after a particular expert had posted. I can only imagine
>that Reg has not swallowed all you have said and thus has raised your
>ire such that you have lost your cool

If you still think there is a cabal, then you missed the whole point.

If you thought it was a personal attack against Reg, then you completely misunderstood my motives in writing all that. (And anyway, Reg probably regards "audacity" as the highest of compliments :-)

And if you thought any of it was written in anger, then you never understood a single word.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3639. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 09:13:47 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <kIXzNaELvzQ$EAgJ@ifwtech.co.uk>
Source record: 110183

Dr. Slick wrote:
>"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
>news:<Awb6DtO5mpQ$EAnR@ifwtech.co.uk>...
>> >
>> >
>> > You would then have either:
>> >
>> > PA--+SWR meter1+50 ohm dummy load
>> > (same Z as PA)
>> >
>> > 1 2
>> >
>> >
>>
>> The changes you see on the meter are *entirely* due to what you're doing
>> to the meter itself - changing the Zo for which the meter is calibrated.
>> Changing the output Z of the PA is having *no* effect on the values of
>> |rho|. It never does.
>>
>
>
>Nope. you are just changing where the reflections actually happen,
>either before or after the SWR meter. In one case you measure it, in
>another you don't. As simple as that.
>
No, it's even simpler. A good SWR meter only *senses* the conditions on
the line - it does not significantly disturb them. You seem to believe
that calibrating an SWR meter for a different Zo "changes where the
reflections actually happen" - it doesn't have to, and if at all
possible it should avoid doing so.

You're now going to claim that an SWR meter contains a section of
transmission line. In such cases you'd be right about the reflections,
but that is a feature of one particular type of meter, and one
particular type of construction - it isn't a fundamental requirement. As
a counter-example, the Bruene bridge meter is not based on a
transmission line, can be made as physically small and non-intrusive as
technology allows, and can be re-calibrated to any Zo by simply tweaking
a capacitor or a pot.

To repeat: a good SWR meter senses only the impedance at its *output*.
And the source impedance has no effect on the readings of |rho| or SWR.

>
>

>> >Please get
>> >MIMP, it's a free program from Motorola.
>>
>> Look, I've *written* programs like that, so I know exactly what's going
>> on under the hood. What we're witnessing here is a demonstration that
>> such programs can only give answers, not basic understanding. You have
>> created some construct that seems to explain the program output for you;
>> but it will not survive real-life experiments.
>>
>
> Oh REALLY? I'd like to see this program you have written. I doubt
>you could give it to us

Oh come on, did you really imagine I was lying?

www.ifwtech.co.uk/g3sek/netcalc.htm
www.marsport.demon.co.uk/scalc.htm
www.marsport.demon.co.uk/sekpmk.htm

These are the ones that come immediately to mind that involve impedance operations (there are also many others, in other areas). NETcalc is entirely mine; Scalc is a collaboration; and the programs in the BASIC software collection are sometimes mine, sometimes improved versions of very ancient programs by other people. Even when someone else wrote the original code, I've been 'under the hood' and take technical responsibility for every line.

NETCALC in particular is a 'Swiss Army Knife' calculator for complex impedances, which I wrote almost 20 years ago because I needed one. There still isn't anything else that does quite the same job. It includes Z0 transformations, and impedance transformation by loss-less transmission lines, but it doesn't include line losses (never got around to it) or complex Z0 (something I learned about here, from Reg). However, if anyone wants to upgrade it...

The BASIC source code for all the programs is there to download (except Scalc). Some of it isn't elegant, and all of it shows its age, but its age also ensures that there aren't many technical errors - these programs have been around for long enough to have been thoroughly debugged by large numbers of users.

We haven't been maintaining these programs much in recent years, as others like Reg and VE3ERP are now filling the small BASIC/DOS program niche very well.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3640. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 10:04:25 UTC
From: kd1@sympatico.ca
Message-ID: <3F4347A9.47BD4355@sympatico.ca>
Source record: 110184

"Dr. Slick" wrote:
>
> kd1@sympatico.ca wrote in message news:<3F426E0B.32EA1460@sympatico.ca>...
> > Actually, you've done 2*pi*radius*force work. Moving one circumference
> > times the force.
> >
>
> Actually, thats 2*pi*radius*force*moment arm. Right.

In my example, I intended the 'radius' to be the radius at which the
force was applied so the 'moment arm' was already accounted for. When
the radius is the radius at which the force is applied, 2*pi*radius
is the distance through which the force has acted after one revolution
so the expression is the same as the common force*distance used for
linear work. More generally, it does not matter what the shape of the
path is; the work is always the force times the distance along the path.

...Keith

3641. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 10:56:58 UTC
From: kd1@sympatico.ca
Message-ID: <3F4353FA.C6468C29@sympatico.ca>
Source record: 110185

Richard Harrison wrote:
>
> Keith wrote:
> "It does go back to "double think" unless you can explain how energy can
> flow when power is zero."
>
> Think! The only way the voltage can go to zero on a good transmission
> line which is energized is by interference between an incident wave and
> a reflected wave. Zero volts on the line is merely a manifestation of
> VSWR.

No disagreement from me as long as you replace 'incident wave' and
'reflected wave' with the more precise 'incident voltage wave' and
'reflected voltage wave'. This aligns with the precise use of V in
VSWR.

Adopting Roy's more precise notation for power
P(t) = V(t) * I(t) (1)
The question is: Do you accept this expression as describing power?

a) If not, then there is no "double think", but a lot of electrical
engineering will have to be tossed as well.

b) If you do accept (1), then in a case where V(t) is zero for all time,
power must be zero as well. V(t) is zero for all time at a current
maximum in a shorted transmission line, so the power (energy flowing)
must be zero as well.

c) If you accept (1), but also claim that there is energy flowing when
V(t) is zero, then "double think" is an appropriate description.

I think these are the only 3 options.

If you choose b), then I think we are in agreement.
If you choose c), then ... I'm not sure what the 'then' is.
If you choose a), we can explore all the difficulties that will arise
when (1) is not true and with some effort you may arrive at b).

> Forward (incident) power and reverse (reflected) power are both on the
> line. A zero voltage on the line requires a complete load reflection so
> that the reflection volts are as strong as the forward volts.

The sentence with 'volts' is correct. The sentence with 'power' leads
to a great deal of difficulty as described above.

> A directional coupler, at the very spot where a slotted line probe would
> sense zero volts, would show you have full power (with its volts and

> amps) coming and going.

Many people use directional couplers as a reason to stay out of
camp b), but this necessarily means they are in a) or c). The first
step to enlightenment is to briefly set aside directional couplers
and 'Bird watt' meters, and realize that in a choice between a), b)
or c), b) is the only place it makes sense to be. Then go back and
figure out how directional couplers are not inconsistent with b).

> In reality there is not zero volts in the incident wave or in the
> reflected wave. There`s full voltage coming and going. The volts just
> happen to be out-of-phase at this point.

Yes, indeed. But there is no power.

...Keith

3642. Re: ladderline underground??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 11:13:33 UTC
From: Jerry <jerryaa@fbx.com>
Message-ID: <3f435788@news.lh.net>
Source record: 110186

Thanks all for the responses. Moisture would be most difficult to keep out.
Moisture in the form of condensation would be a greater problem for it than
the rain, snow, and ice it would be exposed to if it were above ground.
"Jerry" <jerryaa@fbx.com> wrote in message news:3f42aefd$1@news.lh.net...
> Is 450 ohm ladderline effective underground if enclosed in underground PVC
> conduit? It would run from the outside of the shack underground to the
base
> of the antenna, and then run exposed to the feed point of the antenna.
>
> Thanks.
>
> Jerry
>
>

3643. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 11:23:07 UTC
From: kd1@sympatico.ca
Message-ID: <3F435A1B.DD92B685@sympatico.ca>
Source record: 110187

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > You can now remeasure any current or voltage at any
> > points you choose to tell me whether the shorts or cuts are in or out.
>
> That's easy. The line is shorted or cut where the signals disappear.

You must have misread the question. Shorts are only applied at points
with zero volts and only wires with zero current are cut. Since there
is no 'signal' present at these points, the 'signal' will not disappear.

For your convenience, I have provided the experiment again, below.

"Just to recap, the experiment was: a matched source connected to an
open
transmission line. After the source is turned on (and a brief wait for
settling), measure any voltage or current you desire at any point on
the line. I short the points of zero voltage and cut the points with
zero current. You can now remeasure any current or voltage at any
points you choose to tell me whether the shorts or cuts are in or out.

Since you can not tell the difference, the circuit with cuts and opens
is identical to the one without."

...Keith

3644. In the Fractal spirit...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 12:08:36 UTC
From: k4wge@arrl.net
Message-ID: <7b671b4e.0308200408.4e226ea6@posting.google.com>
Source record: 110188
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

The World's first Superluminal Radio Transmitter!

http://www.radio-faster-than-light.com/

3645. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 12:26:34 UTC
From: K7JEB <k7jeb@arrl.no_spam.net>
Message-ID: <_NJ0b.106307$3o3.7457840@bgtnsc05-news.ops.worldnet.att.net>
Source record: 110189

"Tom Bruhns" <k7itm@aol.com> wrote:

> ..... Perhaps
> Reg is right. Perhaps we SHOULD quit calling
> it an SWR meter and instead call it a "Transmitter
> Load Indicator" (or perhaps transmitter load error
> indicator).

I propose that we call it a "Reflected Energy
Guessimator", or REG for short.

Jim, K7JEB k7jeb(at)arrl(dot)net
Glendale, AZ

3646. Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 12:27:15 UTC
From: agulesin@hotmail.com
Message-ID: <62155ce7.0308200427.629f25d3@posting.google.com>
Source record: 110190

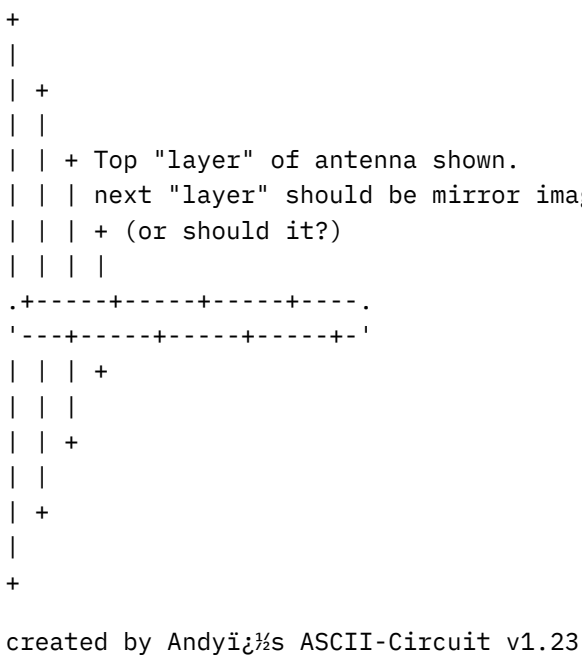
This message concerns an antenna used for EMC measurements but I am sure you will be able to reply.

We are setting up an EMC testing laboratory, one of the (very impressive!) antennas that will be used is a "Stacked Logarithmic-Periodic Test-Antenna", the details of which are in http://www.schwarzbeck.de/k9128e.pdf.

The antenna has been assembled, but the elements were not placed as in the photo (see pdf). Let me try to explain:

The elements were not placed diagonally opposite, as I imagine is required. (If the uppermost longest element is on the right, the next lower longest element should be on the left, as far as I can understand.)

I imagine that this will affect the directional 'balance' of the antenna, although I have no prior knowledge of EMC testing, just a basic understanding of antenna theory.



created by Andyï¿½s ASCII-Circuit v1.23.080803 Beta www.tech-chat.de

3647. Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 12:30:32 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <e5qdnXr1IYR09N6iU-KYvA@comcast.com>
Source record: 110191

I'm trying to understand a grounding situation at myt ststion. Here is the station layout:

Pyramid Phase III 25 amp power supply feeding power to all devices. First there is the radio - a Yaesu FT817. The antenna output from this goes to a 2 position antenna switch. One side of the switch feeds directly to a high perormance 2m/440 dual band mag mount antenna on my A/C unit. The other side goes to a MFJ 1040B rf preselector (also powered by the Pyramid). The preselector has 2 antenna outputs - one goes to a Rat shack 11 meter "high performance" mag mount antenna (tuned for 10m) also on my A/C unit. The other output goes to a LDG Z11 autotuner. The output from the tuner goes to a 34' long inverted V antenna outside my window (I'm on the 3rd floor).

All these devices share a common ground through either the coax shield or DC power ground or both. I have yet to install a proper station ground for the whole setup and I don't know if the power supply is grounded properly at the 115v ac outlet.

There - now that that is said, here is the problem:

When tuned on any band, my SWR gets better if I touch the case of the tuner. I then installed a 1/4" braid from the tuner's chassis screw to the ground lug on the antenna switch and that solved the problem. I moved the braid from the antenna switch to the case of the MFJ 1040B and the same thing happened but not nearly as good as the effect I got when hooked to the antenna switch.

I thought the coax sheild was a good ground path - how could installing a ground line between the tuner and the switch help? All chassis's are metal except for the sides of the MFJ 1040B preselector. All patch coax cables have been swapped out with others with no changes seen. The system as a whole seems to operate well - on 10 m the mag mount works best. Below that the inverted V works better. Although the Z11 can't autotune below 5 mhz, I can manually tune and get a good SWR down to 1.8 mhz with the Z11 in manual mode.

Grounding will be easy when I get around to it - I have baseboard hot water radiators that I can ground to.

Any ideas, folks?

72's de Ken KG0WX

kg0wx@NOSPAMyahoo.com

3648. Re: HB9CV doesn't tune up

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 13:03:22 UTC
From: Claus Waldraff <df8gh@darc.de>
Message-ID: <3F43719A.20305@darc.de>
Source record: 110212

Gary Morton scribe:
> At the recent FRARS radio rally I bough a cheap HB9CV antenna for 6m

Good antenna if you save space and like to be better than a dipole...

> (there were no 3 element yagis on sale).

Don't worry abt. :)

> out. My only concern was for the spacers to hold the "thin rods" away
> from the main elements. The supplier wasn't particularly helpful. I have
> a suspicion that the spacing may be critical,

It is. You should have a certain distance from the elements. Amount is not
to critical. I did a 6m HB9CV too. I followed the advice/plan o the
designer and use 5 mm plexi glass (spelling/naming??)

> I am interested in how I can tweak the antenna to get a better SWR
> reading.

That's the C and the element length

> Am I right in thinking that the gaps between the thin rods
> (name please!)

phasing lines :) needed to shift the phase by 215ï¿½ (??) sri, not sure any more

> and the elements is important

element lengths is important, yes

> effect of too big, or too small, or an asymmetric gap?

a gap too small will severely detune the whole system

> Also I was told that this antenna was about the same gain as a 3 element
> yagi, possibly a little better. Was this just sales talk?

HB9CV:

4.2 dBi gain
~20 dB F/R

period :)

> Regardless it does seem to work and I had my first QSOs using this
> antenna. Since I am a QRP operator I would like to get the best out of
> the antenna possible.

Sure a nice antenna and well worth the effort regarding the size.

Claus
DF8GH, JN48pa
htp://home.t-online.de/home/df8gh

3649. Re: In the Fractal spirit.... Part II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 13:48:06 UTC
From: richardharrison@webtv.net
Message-ID: <8346-3F437C16-19@storefull-2313.public.lawson.webtv.net>
Source record: 110192

K4WGE wrote:
"The EM wave`s propagation speed is infinite at the center of radiation, (center of radiating antenna) and gradually decreases into speed of c at the end of near field."

Velocity = frequency x wavelength.

The product, frequency x wavelength must be infinite if velocity is infinite.

Directors and reflectors in parasitic antenna arrays exhibit phase (time) delays which depend on element spacings and these spacings are likely within the near field. I`ve never heard of any velocity corrections to the phasing required by near field immersion.

I`m missing something here.

Best regards, Richard Harrison, KB5WZI

3650. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 14:31:11 UTC
From: richardharrison@webtv.net
Message-ID: <8346-3F43862F-21@storefull-2313.public.lawson.webtv.net>
Source record: 110194

Keith wrote:
"Why the resistance to explaining this case?"

Because it should be obvious to anyone who knows enough to ask the question.

Nevertheless, I assume the questioner is sincere so here is a simple answer. It`s in Terman if you want more details.

Zo = sq rt Z/Y

Z = R + j omega L = line series impedance per unit length, ohms.

Y = G + j omega C = line shunt admittance per unit length, ohms.

For r-f in good lines, this reduces to:

Zo = sq rt L/C

For d-c, this reduces to:

Zo = sq rt R/G

Obviously line immpedance at d-c is likely quite different from line impedance at r-f.

Best regards, Richard Harrison, KB5WZI

3651. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 14:31:56 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <bi00ot$1mk4$1@f04n12.cac.psu.edu>
Source record: 110193

Hi Ken:

Sound to me like a classic RF in the shack problem. With the two mag-mount antenna that close to the rest of the station RF pick up seems like a sure thing. When you move your bit of ground braid around your changing the electrical length outside of the coax. Any wire over a few inches long is not a RF ground.

--
John Passaneau
Penn State University, State College Pa.
W3JXP
w3jxp@arrl.net

"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:e5qdnXr1IYR09N6iU-KYvA@comcast.com...
> I'm trying to understand a grounding situation at myt ststion. Here
> is the station layout:
>
> Pyramid Phase III 25 amp power supply feeding power to all
> devices. First there is the radio - a Yaesu FT817. The antenna
> output from this goes to a 2 position antenna switch. One side
> of the switch feeds directly to a high perormance 2m/440 dual
> band mag mount antenna on my A/C unit. The other side goes
> to a MFJ 1040B rf preselector (also powered by the Pyramid).
> The preselector has 2 antenna outputs - one goes to a Rat shack
> 11 meter "high performance" mag mount antenna (tuned for 10m)
> also on my A/C unit. The other output goes to a LDG Z11
> autotuner. The output from the tuner goes to a 34' long inverted
> V antenna outside my window (I'm on the 3rd floor).
>
> All these devices share a common ground through either the
> coax shield or DC power ground or both. I have yet to install
> a proper station ground for the whole setup and I don't know
> if the power supply is grounded properly at the 115v ac outlet.
>
> There - now that that is said, here is the problem:
>
> When tuned on any band, my SWR gets better if I touch the
> case of the tuner. I then installed a 1/4" braid from the tuner's
> chassis screw to the ground lug on the antenna switch and that
> solved the problem. I moved the braid from the antenna switch
> to the case of the MFJ 1040B and the same thing happened
> but not nearly as good as the effect I got when hooked to the
> antenna switch.

>
> I thought the coax sheild was a good ground path - how
> could installing a ground line between the tuner and the
> switch help? All chassis's are metal except for the sides of
> the MFJ 1040B preselector. All patch coax cables have been
> swapped out with others with no changes seen. The system
> as a whole seems to operate well - on 10 m the mag mount
> works best. Below that the inverted V works better. Although
> the Z11 can't autotune below 5 mhz, I can manually tune and
> get a good SWR down to 1.8 mhz with the Z11 in manual mode.
>
> Grounding will be easy when I get around to it - I have
> baseboard hot water radiators that I can ground to.
>
> Any ideas, folks?
>
> 72's de Ken KG0WX
>
> kg0wx@NOSPAMyahoo.com
>
>

3652. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 15:04:36 UTC
From: richardharrison@webtv.net
Message-ID: <16950-3F438E04-11@storefull-2311.public.lawson.webtv.net>
Source record: 110195

Keith wrote:
"Yes, indeed. But there is no power."

Keith`s perception is flawed. He is addressing r-f with a d-c mindset. R-F power flow does not stop at an SWR zero-voltage point. Like "Old Man River" it just keeps rolling along.

The zero-voltage point exists because the phase relationship between two oppositely traveling waves is fixed, and the zero-volts point is where the vectors cancel.

You must simultaneously sense both waves to find a zero. Sensing either wave alone finds no dip in voltage. Carramba!

Best regards, Richard Harrison, KB5WZI

3653. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 15:19:00 UTC
From: richardharrison@webtv.net
Message-ID: <16949-3F439164-32@storefull-2311.public.lawson.webtv.net>
Source record: 110199

Keith wrote:
"Since you can not tell the difference, the circuit with cuts and opens
is identical to one without."

There he goes again!

If you short an r-f transmission line where SWR has produced zero volts,
you make a difference. You change the reflection point to the short you
impose from its former location.

Best regards, Richard Harrison, KB5WZI

3654. Re: In the Fractal spirit...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 15:41:09 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <fEM0b.209537$uu5.38452@sccrnsc04>
Source record: 110196
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

Boy! The info on that site was so fast I couldn't read anything useful!

DD, W1MCE

k4wge wrote:

> The World's first Superluminal Radio Transmitter!
>
> http://www.radio-faster-than-light.com/

3655. Re: In the Fractal spirit...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 15:44:25 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F4396FB.27C15250@shaw.ca>
Source record: 110197
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

k4wge wrote:
>
> The World's first Superluminal Radio Transmitter!
>
> http://www.radio-faster-than-light.com/

Requires a Supernatural Radio Receiver!
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

3656. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 15:47:22 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <eKM0b.208538$YN5.144661@sccrnsc01>
Source record: 110198

I designing RF grounds for USAF systems the coax braid was NEVER, NEVER,
used as part of the ground system!!!

I agree with one of the other POSTS regarding RF in shack.

DD, W1MCE
+ + +
Ken Bessler wrote:

> I'm trying to understand a grounding situation at myt ststion. Here
> is the station layout:
>
> Pyramid Phase III 25 amp power supply feeding power to all
> devices. First there is the radio - a Yaesu FT817. The antenna
> output from this goes to a 2 position antenna switch. One side
> of the switch feeds directly to a high perormance 2m/440 dual
> band mag mount antenna on my A/C unit. The other side goes
> to a MFJ 1040B rf preselector (also powered by the Pyramid).
> The preselector has 2 antenna outputs - one goes to a Rat shack
> 11 meter "high performance" mag mount antenna (tuned for 10m)
> also on my A/C unit. The other output goes to a LDG Z11
> autotuner. The output from the tuner goes to a 34' long inverted
> V antenna outside my window (I'm on the 3rd floor).
>
> All these devices share a common ground through either the
> coax shield or DC power ground or both. I have yet to install
> a proper station ground for the whole setup and I don't know
> if the power supply is grounded properly at the 115v ac outlet.
>
> There - now that that is said, here is the problem:
>
> When tuned on any band, my SWR gets better if I touch the
> case of the tuner. I then installed a 1/4" braid from the tuner's
> chassis screw to the ground lug on the antenna switch and that
> solved the problem. I moved the braid from the antenna switch
> to the case of the MFJ 1040B and the same thing happened
> but not nearly as good as the effect I got when hooked to the
> antenna switch.
>
> I thought the coax sheild was a good ground path - how
> could installing a ground line between the tuner and the
> switch help? All chassis's are metal except for the sides of
> the MFJ 1040B preselector. All patch coax cables have been
> swapped out with others with no changes seen. The system
> as a whole seems to operate well - on 10 m the mag mount

> works best. Below that the inverted V works better. Although
> the Z11 can't autotune below 5 mhz, I can manually tune and
> get a good SWR down to 1.8 mhz with the Z11 in manual mode.
>
> Grounding will be easy when I get around to it - I have
> baseboard hot water radiators that I can ground to.
>
> Any ideas, folks?
>
> 72's de Ken KG0WX
>
> kg0wx@NOSPAMyahoo.com
>
>

3657. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 15:47:37 UTC
From: kd1@sympatico.ca
Message-ID: <3F439819.C23DBA48@sympatico.ca>
Source record: 110200

Richard Harrison wrote:
>
> Keith wrote:
> "Why the resistance to explaining this case?"
>
> Because it should be obvious to anyone who knows enough to ask the
> question.
>
> Nevertheless, I assume the questioner is sincere so here is a simple
> answer. It`s in Terman if you want more details.

The question was, indeed, sincere.

> Zo = sq rt Z/Y
>
> Z = R + j omega L = line series impedance per unit length, ohms.
>
> Y = G + j omega C = line shunt admittance per unit length, ohms.
>
> For r-f in good lines, this reduces to:
>
> Zo = sq rt L/C
>
> For d-c, this reduces to:
>
> Zo = sq rt R/G

But we were discussing ideal lines, for which, if I recall correctly,
R and G are both 0.

This leaves us with Z0 = jwL/jwC (w being my font challenged excuse
for Omega)
which should, in the limit as w approaches 0, leave us with the same
answer as for RF. Or have I forgotten how to do math (which is quite
possible).

In any case, a slight modification to the experiment can get around
this difficulty. We'll just perform the experiment at a frequency
sufficiently low as to be indistinguishable from 0 given the duration
of the experiment.

> Obviously line immpedance at d-c is likely quite different from line
> impedance at r-f.

This would certainly be true for real world lines where the luxury of
R=G=0 does not exist.

...Keith

3658. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 15:57:36 UTC
From: richardharrison@webtv.net
Message-ID: <16949-3F439A70-39@storefull-2311.public.lawson.webtv.net>
Source record: 110201

Ian, G3SEK wrote:
"You are now going to claim that an SWR meter contains a section of transmission line."

At VHF where the wattmeter may affect SWR, it is customary to make the meter plus its cable extension into 1/2-wave so that its insertion and removal nave minimum effect.

Best regards, Richard Harrison, KB5WZI

3659. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:19:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f43a0e5$1_7@corp.newsgroups.com>
Source record: 110202

Richard Harrison wrote:
> Think! The only way the voltage can go to zero on a good transmission
> line which is energized is by interference between an incident wave and
> a reflected wave. Zero volts on the line is merely a manifestation of
> VSWR.

It follows from the "logic" previously presented that if there are light rings and dark rings existing in a light interference pattern, The light ring energy is trapped between the dark rings which is well known to be a false assumption. All that happens at a voltage node on a line with reflections is simple wave interference between two waves. If the voltage is zero it is because of 100% destructive interference between two voltage waves. It happens all the time in optics and no optics engineer would be silly enough to assert that the bright ring energy is trapped and circulating between the dark rings.
--
73, Cecil http://www.qsl.net/w5dxp

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3660. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:23:13 UTC
From: kd1@sympatico.ca
Message-ID: <3F43A071.E78AF8AE@sympatico.ca>
Source record: 110205

Richard Harrison wrote:
>
> Keith wrote:
> "Yes, indeed. But there is no power."

Actually I wrote much more than that and the stuff which preceded was
much more important.

> Keith`s perception is flawed. He is addressing r-f with a d-c mindset.
> R-F power flow does not stop at an SWR zero-voltage point. Like "Old Man
> River" it just keeps rolling along.

P(t) = V(t) * I(t) is much more general than DC or sinusoidal RF. It
works
for any signal shape you choose, even non-repetitive ones.

It certainly works for my electic company who integrate P(t) and
regularly send me a bill.

> The zero-voltage point exists because the phase relationship between two
> oppositely traveling waves is fixed, and the zero-volts point is where
> the vectors cancel.
>
> You must simultaneously sense both waves to find a zero. Sensing either
> wave alone finds no dip in voltage. Carramba!

From this response it is clear that you are not yet in group b).

But is it:
group a) P(t) is not always equal to V(t) * I(t); or
group c) energy can flow when P(t) is a constant 0
?

Or maybe my list is incomplete and there is a 4th option which I missed.

May I respectfully suggest that if you are having difficulty selecting
which option applies to your thinking (and yet can't produce a fourth
option), that you try to discover the source of your discomfort. From
there, enlightenment may arise.

For myself, I recognized the "double think" and so rejected c).
P(t) = V(t) * I(t) seemed so fundamental that it had to be accepted
thus I was forced to reject a).
This left only b). Although it rejects some of the often stated and
accepted explanations about transmission lines, it was the lesser
of the evils. Some thinking revealed the weaknesses in the 'often
stated and accepted' explanations and now all is consistent.

This process took some time, prompted and assisted by the never ending arguments which go on in this group. So I do thank those mis-guided souls who argue endlessly and the patient answerers who respond mostly for the benefit of the lurker.

But be that as it may, do try and figure out whether option a), b) or c) best describes your thinking. Only an increased understanding can arise.

...Keith

3661. Re: Established knowledge (long)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:28:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1387kvorgiigcjp582ffnbtvps0v0tnndg@4ax.com>
Source record: 110203

On Wed, 20 Aug 2003 09:36:52 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>> The fact is that is if this were true[, then] a thread would never exceed
>>five postings after a particular expert had posted.
bracketed [ ] inclusions made by me.

Hi Ian,

This posting (#5) is simply to confirm suspicions. :-)

73's
Richard Clark, KB7QHC

3662. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:30:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f43a37b_7@corp.newsgroups.com>
Source record: 110204

kd1@sympatico.ca wrote:

> W5DXP wrote:
>
> You must have misread the question. Shorts are only applied at points
> with zero volts and only wires with zero current are cut. Since there
> is no 'signal' present at these points, the 'signal' will not disappear.

Let me see if I have this straight. You cut off 1/4WL of feedline and
current and voltage still exist in the cut off parts? Have you patented
that perpetual motion machine? All I have to do to prove you wrong is
measure the current and voltage in the part that was isolated from the
source. In the previous example:

```
1/4WL coax
source---------coax--------------------+---wattmeter-----short
```

When you cut the line at '+', the wattmeter will go to zero. It's
a no brainer. What do you mean I can't tell the difference?

> You can now remeasure any current or voltage at any
> points you choose to tell me whether the shorts or cuts are in or out.
>
> Since you can not tell the difference, the circuit with cuts and opens
> is identical to the one without."

But I can tell the difference because I choose to measure the current and
voltage in the parts of the feedline that have been cut off and isolated
from the source. It's a no brainer.

--
73, Cecil http://www.qsl.net/w5dxp

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3663. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:36:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f43a50e$1_7@corp.newsgroups.com>
Source record: 110206

Richard Harrison wrote:

> Keith wrote:
> "Yes, indeed. But there is no power."
>
> Keith`s perception is flawed. He is addressing r-f with a d-c mindset.
> R-F power flow does not stop at an SWR zero-voltage point. Like "Old Man
> River" it just keeps rolling along.
>
> The zero-voltage point exists because the phase relationship between two
> oppositely traveling waves is fixed, and the zero-volts point is where
> the vectors cancel.

Using Keith's "logic", he would also be forced to assert that in a bright ring-dark ring light interference pattern, the energy in the bright rings is trapped between the dark rings and just sits there and circulates. That's one reason why the field of optics is so far ahead of RF transmission lines. Everyone in optics understands interference patterns which is exactly what RF standing waves are.
--
73, Cecil http://www.qsl.net/w5dxp

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3664. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:40:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f43a5db$1_7@corp.newsgroups.com>
Source record: 110207

Richard Harrison wrote:

> Keith wrote:
> "Since you can not tell the difference, the circuit with cuts and opens
> is identical to one without."
>
> There he goes again!
>
> If you short an r-f transmission line where SWR has produced zero volts,
> you make a difference. You change the reflection point to the short you
> impose from its former location.

And all conditions on the "load" side change so the change is easily
detectable. The change can even be detected at the source by observing
the changing TV ghosting patterns. Keith's argument is just some primrose
path that takes us farther away from reality, not a very good goal, IMO.
--
73, Cecil http://www.qsl.net/w5dxp

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3665. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:52:07 UTC
From: richardharrison@webtv.net
Message-ID: <3322-3F43A737-17@storefull-2316.public.lawson.webtv.net>
Source record: 110214

George, W5YR wrote:
"This is some times referred to as reflection gain and results from the presence of more power in the load than absence of the tuner would permit."

Words work best when their meanings are agreed. It is generally agreed that the decibel (abreviated db) is a logarithmic unit used in communication work to express power ratios. (The definition is Terman`s.) The Bell System used the abreviation db, not dB.

An audio output transformer is used with a low-impedance speaker to better match a high-impedance source for a louder signal than the voice-coil in series with a tube would produce. Still, a good transformer is usually said to have low loss, not give more gain .

I have no problem with "reflection gain", but I would have looked for a definition.

Best regards, Richard Harrison, KB5WZI

3666. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:52:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1s87kvgqprra5q2c79fv6d7r2lvb2arvjo@4ax.com>
Source record: 110208

On 20 Aug 2003 05:27:15 -0700, agulesin@hotmail.com (Abdullah Eyles)
wrote:
>
>The antenna has been assembled, but the elements were not placed as in
>the photo (see pdf). Let me try to explain:
>
The short answer: start over and do it right.

>The elements were not placed diagonally opposite, as I imagine is
>required. (If the uppermost longest element is on the right, the next
>lower longest element should be on the left, as far as I can
>understand.)

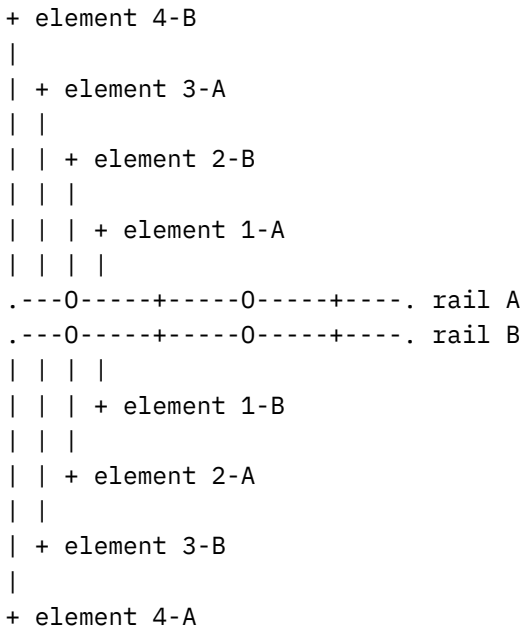
Description is vague at best. You are starting off with a presumption
that may be faulty as you infer.

>
>I imagine that this will affect the directional 'balance' of the
>antenna, although I have no prior knowledge of EMC testing, just a
>basic understanding of antenna theory.

Guessing aside, and taking a clue from this "diagonally" expression, I
would offer that you look at the antenna from above as you attempted
in your picture and see if it looks like:

```
+
|
| +
| |
| | +
| | |
| | | +
| | | |
.---+-----+-----+-----+----. two rails, one hidden by top
| | | |
| | | +
| | |
| | +
| |
| +
|
+
```

And confirm that each element, in order on one side, alternates
between the two rails that hold them. This is equivalent to:



Where the connections of elements denoted by "O" pass to the OTHER
rail. Both sides (common elements of any dipole pair) swap at each
step down the progression.

73's
Richard Clark, KB7QHC

3667. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 16:53:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f43a8df_7@corp.newsgroups.com>
Source record: 110209

kd1@sympatico.ca wrote:
> But we were discussing ideal lines, for which, if I recall correctly,
> R and G are both 0.

Heck, let's discuss ideal Gods whose whims control everything in an
ideal way.

> This would certainly be true for real world lines where the luxury of
> R=G=0 does not exist.

The luxury of R=G=0 does not exist anywhere in the known
universe. Your math model is predicated upon things that don't
(can't?) exist. Does that give you some sort of hint?

Seems to me this is just one more case of seduction by the
idealized steady-state model. "I think it, therefore it exists".
--
73, Cecil http://www.qsl.net/w5dxp

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3668. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:02:43 UTC
From: kd1@sympatico.ca
Message-ID: <3F43A9B3.42E47E18@sympatico.ca>
Source record: 110213

My mistake. I forgot to make clear that the transmission line was
ideal for this thought experiment; that is, R=G=0; no loss. The signal
does indeed continue to circulate for ever.

Please re-evaluate your answer after this clarification.

...Keith

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
>
> > W5DXP wrote:
> >
> > You must have misread the question. Shorts are only applied at points
> > with zero volts and only wires with zero current are cut. Since there
> > is no 'signal' present at these points, the 'signal' will not disappear.
>
> Let me see if I have this straight. You cut off 1/4WL of feedline and
> current and voltage still exist in the cut off parts? Have you patented
> that perpetual motion machine? All I have to do to prove you wrong is
> measure the current and voltage in the part that was isolated from the
> source. In the previous example:
> 1/4WL coax
> source---------coax--------------------+---wattmeter-----short
>
> When you cut the line at '+', the wattmeter will go to zero. It's
> a no brainer. What do you mean I can't tell the difference?
>
> > You can now remeasure any current or voltage at any
> > points you choose to tell me whether the shorts or cuts are in or out.
> >
> > Since you can not tell the difference, the circuit with cuts and opens
> > is identical to the one without."
>
> But I can tell the difference because I choose to measure the current and
> voltage in the parts of the feedline that have been cut off and isolated
> from the source. It's a no brainer.
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
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3669. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:05:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f43aba2_7@corp.newsgroups.com>
Source record: 110210

kd1@sympatico.ca wrote:
>>In reality there is not zero volts in the incident wave or in the
>>reflected wave. There`s full voltage coming and going. The volts just
>>happen to be out-of-phase at this point.
>
> Yes, indeed. But there is no power.

Power is the same as irradiance in optics. When total V=0, it is simply the result of destructive interference. Perhaps this quote from _Optics_, by Hecht, will enlighten you. "The principle of conservation of energy makes it clear that if there is constructive interference at one point, the "extra" energy at that location must have come from elsewhere. There must therefore be destructive interference somewhere else."

The voltage goes to zero because two voltage waves are engaged in destructive interference. The current goes to maximum because two current waves are engaged in constructive interference. The momentum in the voltage waves simply transfers to the current waves and they just keep on rolling along. There is no mechanism of physics existing at that point to change the momentum of the waves. Believing that no energy crosses a superposed V=0 boundary is just a wet dream. The current is at an absolute maximum point so plenty of charge carriers are crossing that boundary.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike ..." Albert Einstein

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3670. Mobile Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:10:19 UTC
From: 0|||||||0 Ray <res009js-nospam-@gte.net>
Message-ID: <%XN0b.15970$kK4.9396@nwrddc02.gnilink.net>
Source record: 110211

New ham antenna questions.... What would be a good antenna, store or homemade, for my vehicle? Where is the best place to locate the antenna on my vehicle?

I drive a Jeep Wrangler and will soon want to add a mobile with a dual band VHF/UHF antenna. This vehicle has two tops, one fabric and one fiberglass. I'm guessing I will probably attach the antenna to the light bar, the highest point on the vehicle, across the top of the windshield.

Thanks,

Ray
0|||||||0

3671. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:19:17 UTC
From: kd1@sympatico.ca
Message-ID: <3F43AD95.6A8C1AF@sympatico.ca>
Source record: 110217

Richard Harrison wrote:
>
> Keith wrote:
> "Since you can not tell the difference, the circuit with cuts and opens
> is identical to one without."
>
> There he goes again!
>
> If you short an r-f transmission line where SWR has produced zero volts,
> you make a difference. You change the reflection point to the short you
> impose from its former location.

Given an ideal transmission line (necessary to achieve 0 volts), there
are no measurements you can make which will indicate whether the short
is present or not.

With the voltage and current distributions the same, with the standing
wave the same, it is not obvious that there is a difference when the
short is added or removed.

You have suggested that the reflection point has moved. But there are
no measurements which can show that this has occurred.
And yet, you argue that while the wave energy previously went through
it is now reflected. But nothing that you can observe on the line has
changed. Why are you so sure that the wave energy previously went
through this point of zero voltage?

...Keith

3672. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:19:58 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <1oa7kv8526s5u68bkc80vssp6v0hkhivnk@4ax.com>
Source record: 110215

On Wed, 20 Aug 2003 11:36:57 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>That's one reason why the field of optics is so far ahead of RF transmission
>lines. Everyone in optics understands interference patterns which is exactly
>what RF standing waves are.

Hi Cecil,

And you have yet to confirm it (or refute it) at the bench. Is your
interest more rhetorical than actual?

We engaged in a rather lengthy interchange to this topic, up to the
point of how you could evidence this for yourself. My methods and
data support your statement's sense. I offered only one proviso of
your rig being able to withstand the demands of such mismatch and you
offered your SGC could do that easily. As is stands left at that, the
remaining task should occupy no more than 10 Minutes of 16 readings
and note taking.

73's
Richard Clark, KB7QHC

3673. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:26:40 UTC
From: kd1@sympatico.ca
Message-ID: <3F43AF50.E17F345C@sympatico.ca>
Source record: 110119

Actually, you've made the argument backwards.

If you explanations work only the complexities of the real world
but collapse in the simplicities of the ideal world, then you
should cast grave suspicions on your explanations.

...Keith

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > But we were discussing ideal lines, for which, if I recall correctly,
> > R and G are both 0.
>
> Heck, let's discuss ideal Gods whose whims control everything in an
> ideal way.
>
> > This would certainly be true for real world lines where the luxury of
> > R=G=0 does not exist.
>
> The luxury of R=G=0 does not exist anywhere in the known
> universe. Your math model is predicated upon things that don't
> (can't?) exist. Does that give you some sort of hint?
>
> Seems to me this is just one more case of seduction by the
> idealized steady-state model. "I think it, therefore it exists".
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3674. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:29:25 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <3pidnUBJ2eq8Ld6iU-KYgw@comcast.com>
Source record: 110216

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:eKM0b.208538$YN5.144661@sccrnsc01...
> I designing RF grounds for USAF systems the coax braid was NEVER, NEVER,
> used as part of the ground system!!!
>
> I agree with one of the other POSTS regarding RF in shack.
>
> DD, W1MCE

Sorry if I seem a little dense here - but do you mean never as in using
the outer braid in an antenna line or using braid *made* from coax (like
the 1/4" flat braid I have)?

In other words, don't rely on the sheild to provide a ground path but
use a flat braid that is not part of an active transmission line?

:-)

72's de Ken KG0WX

3675. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:38:23 UTC
From: kd1@sympatico.ca
Message-ID: <3F43B20F.B90E7F25@sympatico.ca>
Source record: 110120

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> >>In reality there is not zero volts in the incident wave or in the
> >>reflected wave. There`s full voltage coming and going. The volts just
> >>happen to be out-of-phase at this point.
> >
> > Yes, indeed. But there is no power.
>
> Power is the same as irradiance in optics. When total V=0, it is simply
> the result of destructive interference. Perhaps this quote from _Optics_,
> by Hecht, will enlighten you. "The principle of conservation of energy
> makes it clear that if there is constructive interference at one point,
> the "extra" energy at that location must have come from elsewhere. There
> must therefore be destructive interference somewhere else."

My knowledge of optics is insufficient to comment on any analogies you
choose to draw. Fortunately, a knowledge of optics is unnecessary to
understand circuits and transmission lines.

> The voltage goes to zero because two voltage waves are engaged in destructive
> interference. The current goes to maximum because two current waves are engaged
> in constructive interference. The momentum in the voltage waves simply transfers
> to the current waves and they just keep on rolling along. There is no mechanism
> of physics existing at that point to change the momentum of the waves. Believing
> that no energy crosses a superposed V=0 boundary is just a wet dream.

This puts you in
group a) P(t) is not always equal to V(t) * I(t); or
group c) "double think".

Care to think about which and comment?

> The current
> is at an absolute maximum point so plenty of charge carriers are crossing that
> boundary.

Yes indeed, but current by itself is not energy. Remember
P(t) = V(t) * I(t) [unless you choose option a)]
Both volts and amps are simultaneously necessary for power.

...Keith

3676. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:39:52 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308200939.10aca858@posting.google.com>
Source record: 110218

kd1@sympatico.ca wrote in message news:<3F4347A9.47BD4355@sympatico.ca>...
> >
> > kd1@sympatico.ca wrote in message news:<3F426E0B.32EA1460@sympatico.ca>...
> > > Actually, you've done 2*pi*radius*force work. Moving one circumference
> > > times the force.
> > >
> >
> > Actually, thats 2*pi*radius*force*moment arm. Right.
>
> In my example, I intended the 'radius' to be the radius at which the
> force was applied so the 'moment arm' was already accounted for. When
> the radius is the radius at which the force is applied, 2*pi*radius
> is the distance through which the force has acted after one revolution
> so the expression is the same as the common force*distance used for
> linear work. More generally, it does not matter what the shape of the
> path is; the work is always the force times the distance along the path.
>
> ...Keith

So then that would be Work = 2*pi*(radius**2)*force.

Right. But it's a bit strange with rotational work, because if
you do one rotation, you are essentially back where you started. I
believe this has something to do with the fact that the rotational
displacement is dimensionless, and linear displacement is in units of
length.

Slick

3677. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:54:42 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <g0d7kvskp4vr27qijkh1jgcat5ioq0k5ap@4ax.com>
Source record: 110121

On Wed, 20 Aug 2003 11:29:25 -0600, "Ken Bessler"
<kg0wx@NOSPAMyahoo.com> wrote:

>
>In other words, don't rely on the sheild to provide a ground path but
>use a flat braid that is not part of an active transmission line?

Hi Ken,

Yes and no.

It has been offered, and your experience confirms, that there is RF on the coax (as well as RF "in" the coax). The solution is to inhibit that, not try to short it to ground. You can try, certainly, and succeed - for one band. Instead you should fix the problem by snubbing the current at the source. Use a choke.

The second part of using coax to ground components. If you have a wiring problem (you have one if you cannot trust your AC mains to supply ground) that lifts one chassis level to 115VAC and that is cured by a coax connection to another chassis safely at ground; then guess what happens when you hold that grounded chassis and disconnect the other's path to that ground? 115VAC through two arms and across the chest when you twist off the connection. That would not happen if they shared the same safety ground through proper connections.

73's
Richard Clark, KB7QHC

3678. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:55:34 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308200955.7bc710d4@posting.google.com>
Source record: 110122

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<u5s5kvoqtdrq3b3l83b1g8lqkokhbslj0p@4ax.com>...
>
> >
> >It leaves open the question as to how does one know whether two
> >things with the same units are the same (or not); a much more
> >challenging problem, I suspect.
> >
> >...Keith
>
>
> You will note that this bears no relation to ohms being different,
> because as you observed with the horsepower example, it is simply
> flipping through translations until you hit the units you want.
>
> 73's
> Richard Clark, KB7QHC

I don't think anyone here is arguing that a wave traveling
through a transmission line is the same as an EM wave traveling
through free-space.

But as Richard has shown, the units are always the same, as they
should be. Just like a meter is still a meter, whether it is in
torque or work.

But it tells you something about what you are measuring, and the
clue is that the E field is defined by the voltage potential field,
and the H field by amps (turns).

And if the permittivity (impedance) of the material surrounding
an antenna will affect it's input impedance, i think it's something to
consider.

Slick

3679. IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:55:35 UTC
From: Martin <marty123@optonline.net>
Message-ID: <rCO0b.129974$_R5.50384707@news4.srv.hcvlny.cv.net>
Source record: 110123
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

I'd appreciate any comments, pro and con, from actual users of the IC-706MKIIG. Performance, reliability, service problems, etc.

As it's described it seems to have features I'd like and need: small size, both HF and VHF, and a reasonable power level. Any suggestions as to other rigs with similar features would be appreciated also.

Marty K1FHR

3680. Re: First Published on the Web

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:55:41 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030820135541.07508.00000298@mb-m25.aol.com>
Source record: 110124

Its all Greek to me :-)
Pictures are nice.

Yuri

3681. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 17:58:01 UTC
From: James <jimbo@nospam.com>
Message-ID: <3F43B6A8.548D1F4D@nospam.com>
Source record: 110125

Try the local veterinary supply you can get gallon bottles of mineral oil at a fair price, no strange looks at the pharmacy and the cows/horses don't like small bottles.

3682. Re: Mobile Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:00:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rfd7kv8e9eoo777vq385pm9otqokicoo7m@4ax.com>
Source record: 110126

On Wed, 20 Aug 2003 17:10:19 GMT, "0|||||||0 Ray"
<res009js-nospam-@gte.net> wrote:

>New ham antenna questions.... What would be a good antenna, store or
>homemade, for my vehicle? Where is the best place to locate the antenna on
>my vehicle?
>
>I drive a Jeep Wrangler and will soon want to add a mobile with a dual band
>VHF/UHF antenna. This vehicle has two tops, one fabric and one fiberglass.
>I'm guessing I will probably attach the antenna to the light bar, the
>highest point on the vehicle, across the top of the windshield.
>
>Thanks,
>
>Ray
>0|||||||0
>

Hi Ray,

Welcome!

Ignore the antennas for a moment, and shop for mounting options
instead. The good antenna vendors have many to choose from and you
will spend more time with them than the antenna itself (which, if you
choose a good mounting system, you can then do home brew antennas to
mate to them far easier than re-inventing the wheel every time).

73's
Richard Clark, KB7QHC

3683. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:03:11 UTC
From: kd1@sympatico.ca
Message-ID: <3F43B7DF.7D9EDA85@sympatico.ca>
Source record: 110132

"Dr. Slick" wrote:
>
> So then that would be Work = 2*pi*(radius**2)*force.
>
> Right. But it's a bit strange with rotational work, because if
> you do one rotation, you are essentially back where you started. I
> believe this has something to do with the fact that the rotational
> displacement is dimensionless, and linear displacement is in units of
> length.

If it takes one newton to make a block move and I push it north 1 metre, then east 1 metre, then south 1 metre, then west 1 metre, I am back where I started but I did 4 joules worth of work (but probably not useful work).

If I push the same block in a circle of radius 1 metre then I do 2pi joules of work: the circumference (distance travelled) times the force.

So the expression at the top should not have a square in it.

...Keith

3684. Re: In the Fractal spirit.... Part II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:07:21 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <tNO0b.209482$YN5.145078@sccrnsc01>
Source record: 110127

If the product of 'frequency * wavelength' equals infinity then one of
the terms MUST be INFINITE by definition [Corollary: If both are finite
the product is finite].

So, which one is infinite??? Why is it infinite?? How can you prove it
is infinite?

DD, W1MCE

Richard Harrison wrote:
> K4WGE wrote:
> "The EM wave`s propagation speed is infinite at the center of radiation,
> (center of radiating antenna) and gradually decreases into speed of c at
> the end of near field."
>
> Velocity = frequency x wavelength.
>
> The product, frequency x wavelength must be infinite if velocity is
> infinite.
>
> Directors and reflectors in parasitic antenna arrays exhibit phase
> (time) delays which depend on element spacings and these spacings are
> likely within the near field. I`ve never heard of any velocity
> corrections to the phasing required by near field immersion.
>
> I`m missing something here.
>
> Best regards, Richard Harrison, KB5WZI
>

3685. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:11:42 UTC
From: Ed Cregger <ecregger@hotmail.com>
Message-ID: <AHO0b.1146$IY5.915@fe01.atl2.webusenet.com>
Source record: 110128
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

It is the best deal going for the money. I love mine.

I haven't had any problems with this rig and I have owned a couple. Long
story.

Ed, NM2K

"Martin" <marty123@optonline.net> wrote in message
news:rCO0b.129974$_R5.50384707@news4.srv.hcvlny.cv.net...
> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>
> As it's described it seems to have features I'd like and need: small size,
> both HF and VHF, and a reasonable power level. Any suggestions as to
other
> rigs with similar features would be appreciated also.
>
> Marty K1FHR
>
>

3686. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:14:05 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030820141405.07508.00000299@mb-m25.aol.com>
Source record: 110129

>
>In itself, it the tuner has I^2R losses to be sure, but if the antenna
>radiates 100 watts with the lossy tuner in place and only 20 watts without
>it, how wrong it is to claim an insertion gain of 80 watts for the tuner?

Very wrong!
Tuner is not attributing gain to nothing. It has losses due to losses in its components, doesn't matter how you slice it.
When you match antenna to transmitter output (especially solid state 50 ohm type) and make transmitter happy to produce full 100W output, you are not adding "gain" from/by the tuner.
That transmitter when looking to mismatched load cuts power back to 20W, when you insert tuner, you are not making up 80W in the tuner (gain?) but making transmitter produce full output. You are now putting 100W in and getting some 90W out, 10W lost in the tuner, but antenna is getting 90W from the combo.
Where is the gain in the tuner?
Looks like things are getting ridiculous here. No tuner (passive) has a gain, it has always loss.

Yuri

3687. Re: 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:16:19 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308201016.7dc29262@posting.google.com>
Source record: 110130

antennas@yahoo.com (VE8AE Andrew) wrote in message
news:<e8be44e3.0308192146.7b80aa52@posting.google.com>...
> I have an old Shakespear 32 ft antenna. Fed at side near bottom and a
> large bottom plate. Want to know if I mount it up at the top of a mast
> how long should I make radial wires for? Do I just calculate for
> lowest freq and make them 1/8 wavelength? I am going to run it through
> my tuner to get as many bands out of it as I can. Only about 40ft of
> coax so it is not too long.
> Or should I try and design my own trap vertical of some sort??
> Thanks.
> Andrew VE8AE

I assume it's an unloaded fiberglass whip....Perfect for a 40m
antenna. If elevated, use 1/4 wave radials "appx 32-33 ft". Trim for
best match. You could feed it as a 5/8 on 17m with a small series
loading coil at the base. It should work ok on 15m, if you use the
tuner. The other bands, the feedline and tuner losses will vary. Just
try it and see. For any certain band used, you would prefer at least
one or more 1/4 wave radial. But 3/4 wave radials can work also. So
40m radials can double for 17 and 15 with decent results. If you try
to use with a tuner on bands where the match is lousy, I would prefer
a thicker low loss coax. So I would use rg-8/213, etc instead of
rg-58. Matched, the differece is very small, but I think it can
noticeably reduce losses a bit when you have a big mismatch. The
higher the freq, the more you would notice the difference. On the low
bands, it would hardly matter. You could feed it as a 1/2 wave on 20m
with very good results, IE: gamma loop feed, but that matching scheme
is going to be quite different than a 40/17 antenna. If you do this,
consider it a single band antenna for the most part. You would need to
pick one or the other. Hard to do all at the same time. Maybe use a
autotuner...But autotuners seem to be sort of lossy in such cases.
Also, if you use a loading coil, say for 17m use, it's best not to
ground the base. Just run it in series. You don't really want to dc
ground an antenna you are trying to run on all bands with a tuner, or
even dual band like the 40/17 combo. If you ground the coil, it will
ruin it on 40m. If you don't ground the coil, it just drops the
resonant freq on 40m a bit. I used a 24 volt relay to switch on one I
ran. MK

3688. Re: In the Fractal spirit...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:16:47 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030820141647.07508.00000300@mb-m25.aol.com>
Source record: 110131

Deutschland, Deutschland uber licht?
Could it be Schwartzenegger?

BUm

3689. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:21:00 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <g_O0b.208655$o%2.96261@sccrnsc02>
Source record: 110133

Richard is on the right track.

The coax braid in a transmission line is NEVER an INTENTIONAL ground. It may be at ground potential because it is connected to two chassis that are each grounded directly, but it is never the intentional ground connection. Because, as Richard points out, if one side is lifted then one of the two items item is now floating.

The USAF does not [NOT!!] advocate ground straps!! If you want something grounded then ground it through the chassis connection. Electrical returns, also, were always treated as isolated circuits. All returns were connected together and then only connected to ground at one point in the system, generally at the source.

I spent three years of an engineering career working as the integrating contractor on system level grounding and bonding diagrams for a major USAF Missile flight components.

DD, W1MCE
Ken Bessler wrote:

> "Dave Shrader" <david.shrader@comcast.net> wrote in message
> news:eKM0b.208538$YN5.144661@sccrnsc01...
>
>>I designing RF grounds for USAF systems the coax braid was NEVER, NEVER,
>>used as part of the ground system!!!
>>
>>I agree with one of the other POSTS regarding RF in shack.
>>
>>DD, W1MCE
>
>
> Sorry if I seem a little dense here - but do you mean never as in using
> the outer braid in an antenna line or using braid *made* from coax (like
> the 1/4" flat braid I have)?
>
> In other words, don't rely on the sheild to provide a ground path but
> use a flat braid that is not part of an active transmission line?
>
> :-)
>
> 72's de Ken KG0WX
>
>

3690. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:25:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk7f9hea8lnh05@corp.supernews.com>
Source record: 110134

A transmission line with perfectly real characteristic impedance doesn't exist.

And the (average) net power equals "forward power" - "reverse power" only if the transmission line has a perfectly real characteristic impedance. Yet you've often blandly subtracted the reverse from the forward to get the net power. Your math model is predicated upon things that don't (can't?) exist. Does that give you some sort of hint?

Egad, you've been seduced, too!

Roy Lewallen, W7EL

W5DXP wrote:
> kd1@sympatico.ca wrote:
>
>> But we were discussing ideal lines, for which, if I recall correctly,
>> R and G are both 0.
>
>
> Heck, let's discuss ideal Gods whose whims control everything in an
> ideal way.
>
>> This would certainly be true for real world lines where the luxury of
>> R=G=0 does not exist.
>
>
> The luxury of R=G=0 does not exist anywhere in the known
> universe. Your math model is predicated upon things that don't
> (can't?) exist. Does that give you some sort of hint?
>
> Seems to me this is just one more case of seduction by the
> idealized steady-state model. "I think it, therefore it exists".

3691. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:26:24 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308201026.57026eaf@posting.google.com>
Source record: 110135

"Ian White, G3SEK" <G3SEK@ifwtech.co.uk> wrote in message
news:<kIXzNaELvzQ$EAgJ@ifwtech.co.uk>...
> >
> >Nope. you are just changing where the reflections actually happen,
> >either before or after the SWR meter. In one case you measure it, in
> >another you don't. As simple as that.
> >
> No, it's even simpler. A good SWR meter only *senses* the conditions on
> the line - it does not significantly disturb them. You seem to believe
> that calibrating an SWR meter for a different Zo "changes where the
> reflections actually happen" - it doesn't have to, and if at all
> possible it should avoid doing so.
>

It absolutely will. in our case, either before or after.

> You're now going to claim that an SWR meter contains a section of
> transmission line. In such cases you'd be right about the reflections,
> but that is a feature of one particular type of meter, and one
> particular type of construction - it isn't a fundamental requirement. As
> a counter-example, the Bruene bridge meter is not based on a
> transmission line, can be made as physically small and non-intrusive as
> technology allows, and can be re-calibrated to any Zo by simply tweaking
> a capacitor or a pot.
>

Most SWR meters i have opened up ARE transmission-line thrus, with
directional couplers.

And i've doubted that you can re-calibrate Zo by changing the
termination shunt resistor, as Cecil claimed. I mean, it must have
some sort of thru in it, and it must offer some sort of impedance
(discontinuity).

> To repeat: a good SWR meter senses only the impedance at its *output*.
> And the source impedance has no effect on the readings of |rho| or SWR.
>

Repeating: unless the SWR meter is matched to the source.

>
> NETCALC in particular is a 'Swiss Army Knife' calculator for complex
> impedances, which I wrote almost 20 years ago because I needed one.
> There still isn't anything else that does quite the same job. It
> includes Z0 transformations, and impedance transformation by loss-less
> transmission lines, but it doesn't include line losses (never got around

> to it) or complex Z0 (something I learned about here, from Reg).
> However, if anyone wants to upgrade it...
>

MIMP can do this, although it's a bit hard to read the RL. You
really own it to yourself to get this free program, i think you would
be interested.

Slick

3692. Indoor Wireless Cable TV Transmission

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:28:16 UTC
From: randy@lilrandys.net
Message-ID: <771d42b1.0308201028.2c8b6015@posting.google.com>
Source record: 110136

I would like to have something plug into my cable tv jack that can transmit the cable over to another antenna that is plugged into the VHF input on the VCR in another room. That way I would not have to run cable from the cable jack in my bedroom to the home theater system in the living room.

Does anyone know of any items that would allow this? I think I need a tranmitter and a reciever, but I do not want to change channels at the transmitter - I want to be able to change with the reciever (plugged into the VCR).

Any ideas??

Thank you very much for your help and time!!

Randy N
randy@lilrandys.net

3693. Re: In the Fractal spirit.... Part II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:30:40 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk7ficgs7f8ld3@corp.supernews.com>
Source record: 110137
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

All your base are belong to us!

Roy Lewallen, W7EL

(If this doesn't make any more sense to you than the "explanation"
quoted below, do a web search on the phrase.)

k4wge wrote:
> http://www.ultra-faster-than-light.com/hwodoesitwork.htm
>
> From the website:
> ==========
> Lorentz has defined an absolute function.
> But Maxwell didn't state that his laws confirms the absolute property
> of space.
> Maxwell defined propagation speed of EM wave relative to source.
> And he did it long before Einstein has invented his absolute property
> of space.
> The magnetic field and electric field component in the near field
> propagates
> with infinite speed. The effect manifests it self in the following
> way:
> The EM wave's propagation speed is infinite at the center of radiation
> (center of radiating antenna) and gradually
> decreases into speed of c at the end of near field.
> For the magnetic field emitted by coil inductor antenna which is
> substantially smaller than the wavelength,
> the effect of infinite speed of change of the field gradient shows no
> decries throughout the near field range.
> As observed in the experiment (no variation in signal phase with
> distance
> from the center of coil).
> ==========

3694. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:41:29 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308201041.bc45082@posting.google.com>
Source record: 110138

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308182139.561295a0@posting.google.com>...
> >
> > That's impossible, unless you have a free source of energy, in
> > which case you should send me the schematic! :)
> >
>
> Excuse me? As a matter of fact, the way I discovered that you can
> have a reflection coefficient greater than unity was to set up the
> boundary conditions for a real transmission line feeding a moderately
> high Q inductor and discover that |rho|>1. Up to that point, nobody
> had told me it was possible. At the time, it was a somewhat
> surprising result to me. Try it yourself. On a line, Vf/If = -Vr/Ir
> = Zo. At the end of the line connected to an load whose impedance is
> Zl, the current is V/Zl, but V = Vf+Vr, and the current there must
> also be If+Ir. You should be able to reduce those to the well-known
> equation for reflection coefficient, and if you plug in numbers such
> as Zo=50-j5 and Zl=1+j100, you'll see that |Vr/Vf|>1. It only takes
> three or four lines of simple linear algebra and perhaps plugging the
> complex numbers into a calculator to find the result for that example.
> Again, TRY it for yourself. DO NOT just believe what I tell you. If
> you have trouble with the algebra, I'll be happy to help you out.
>
> Cheers,
> Tom

Actually, my first posting was right all along, if Zo is always
real.

From Les Besser's Applied RF Techniques:

For passive circuits, 0<=[rho]<=1,

And strictly speaking: Reflection Coefficient =
(Zl-Zo*)/(Zl-Zo)

Where * indicates
conjugate.

But most of the literature assumes that Zo is real, therefore
Zo*=Zo.

And then i looked at the trusty ARRL handbook, 1993, page 16-2,
and lo and behold, the reflection coefficient equation doesn't have a
term for line reactance, so both this book and Pozar have indeed
assumed that the Zo will be purely real.

That doesn't mean Zl cannot have reactance.

Try your calculation again, and you will see that you can never have a [rho] (magnitude of R.C.)greater than 1 for a passive network.

How could you get more power reflected than what you put in? If you guys can tell us, we could fix our power problems in CA!

But thanks for checking my work, and this is a subtle detail that is good to know.

Slick

3695. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:43:56 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308201043.293c2ec2@posting.google.com>
Source record: 110139

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhtfou$aa2$1@titan.btinternet.com>...
>
> Dear Dr Slick, it's very easy.
>
> Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.
>
> Load it with a real resistor of 10 ohms in series with a real inductance of
> 40 millihenrys.
>
> The inductance has a reactance of 250 ohms at 1000 Hz.
>
> If you agree with the following formula,
>
> Magnitude of Reflection Coefficient of the load, ZL, relative to line
> impedance
>
> = (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,
>
> and has an angle of -59.9 degrees.
>
> The resulting standing waves may also be calculated.
>
> Are you happy now ?
> ---
> Reg, G4FGQ

Nope. Re-do your calculations, and you will get something like
0.935:

Actually, my first posting was right all along, if Zo is always
real.

From Les Besser's Applied RF Techniques:

"For passive circuits, 0<=[rho]<=1,

And strictly speaking: Reflection Coefficient =
(Zl-Zo*)/(Zl-Zo)

Where * indicates
conjugate.

But most of the literature assumes that Zo is real, therefore
Zo*=Zo."

And then i looked at the trusty ARRL handbook, 1993, page 16-2, and lo and behold, the reflection coefficient equation doesn't have a term for line reactance, so both this book and Pozar have indeed assumed that the Zo will be purely real.

That doesn't mean Zl cannot have reactance (be complex).

Try your calculation again, and you will see that you can never have a [rho] (magnitude of R.C.)greater than 1 for a passive network.

How could you get more power reflected than what you put in? If you guys can tell us, we could fix our power problems in CA!

But thanks for checking my work, and this is a subtle detail that is good to know.

Slick

3696. Re: 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:46:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <e1g7kv4lbc65ddh61au30r4vsv1m7tqdpv@4ax.com>
Source record: 110140

On 19 Aug 2003 22:46:54 -0700, antennas@yahoo.com (VE8AE Andrew)
wrote:

>I have an old Shakespear 32 ft antenna. Fed at side near bottom and a
>large bottom plate. Want to know if I mount it up at the top of a mast
>how long should I make radial wires for? Do I just calculate for
>lowest freq and make them 1/8 wavelength? I am going to run it through
>my tuner to get as many bands out of it as I can. Only about 40ft of
>coax so it is not too long.
>Or should I try and design my own trap vertical of some sort??
>Thanks.
>Andrew VE8AE

Hi Andrew,

I presume by "fed at side" that this is through some proprietary
matching - or is it simply insulated from ground?

Use a tuner and forget tuning the radials. You might be tempted to
build them to "formula" but given that they will no doubt be of the
drooping variety, then that is an entirely different game. As such,
add as many as you are comfortable with, as long as you can make them
without having to bury their tips (a good idea is that their lowest
point should be out of reach).

Be aware that as impressive as it may feel, the height may be a
detriment in the higher HF (too long and radiation will be skyward,
bound).

73's
Richard Clark, KB7QHC

3697. A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:47:30 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308201047.7dff6029@posting.google.com>
Source record: 110141

Actually, my first posting was right all along, if Zo is always real.

From Les Besser's Applied RF Techniques:

"For passive circuits, 0<=[rho]<=1,

And strictly speaking: Reflection Coefficient =
(Zload-Zo*)/(Zload-Zo)

Where * indicates
conjugate.

But most of the literature assumes that Zo is real, therefore
Zo*=Zo."

And then i looked at the trusty ARRL handbook, 1993, page 16-2,
and lo and behold, the reflection coefficient equation doesn't have a
term for line reactance, so both this book and Pozar have indeed
assumed that the Zo will be purely real.

That doesn't mean Zload cannot have reactance (be complex).

Try your calculation again, and you will see that you can never
have a [rho] (magnitude of R.C.)greater than 1 for a passive network.

How could you get more power reflected than what you put in (do
you believe in conservation of energy, or do you think you can make
energy out of nothing)? If you guys can tell us, we could fix our
power problems in CA!

But thanks for checking my work, and this is a subtle detail that
is good to know.

Slick

3698. Re: Reflection coefficient

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:48:51 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308201048.368cde69@posting.google.com>
Source record: 110142

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bhuiin$e8r$1@hercules.btinternet.com>...
>
> You don't need a lab. All you need is a pencil and the back of a cigarette
> packet.
>
> Theoretical Max possible value = 1+Sqrt(2) exactly = 2.4142136 . . . . .
>
> Can't imagine where you get 5 from.
>
> It occurs when line Zo = Ro - jXo has an angle of -45 degrees, ie., when Xo
> = -Ro, and when the line is terminated in an inductive reactance of +jXo.
>
> ----
> Reg.

Actually, my first posting was right all along, if Zo is always real.

From Les Besser's Applied RF Techniques:

"For passive circuits, 0<=[rho]<=1,

And strictly speaking: Reflection Coefficient =
(Zl-Zo*)/(Zl-Zo)

Where * indicates
conjugate.

But most of the literature assumes that Zo is real, therefore
Zo*=Zo."

And then i looked at the trusty ARRL handbook, 1993, page 16-2,
and lo and behold, the reflection coefficient equation doesn't have a
term for line reactance, so both this book and Pozar have indeed
assumed that the Zo will be purely real.

That doesn't mean Zl cannot have reactance (be complex).

Try your calculation again, and you will see that you can never
have a [rho] (magnitude of R.C.)greater than 1 for a passive network.

How could you get more power reflected than what you put in? If
you guys can tell us, we could fix our power problems in CA!

But thanks for checking my work, and this is a subtle detail that
is good to know.

Slick

3699. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 18:49:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vk7gl2mgslh824@corp.supernews.com>
Source record: 110143

This is another example of the problems that can result from misunderstanding the term "mismatch loss". People have been talking about its reciprocal (or negative, in dB) here, and calling it "reflection gain", a term I hadn't heard before but I don't doubt the term is legitimate.

I've posted fairly extensively about "mismatch loss" on this newsgroup. You should be able to find the postings easily with a Google search. The main point is that "mismatch loss" (and its reciprocal "reflection gain") don't really represent loss in the dissipative sense, but rather "power that coulda been but ain't". It's a useful concept, but one just asking for misinterpretation and misuse by people who don't really understand what's happening. Hopefully a look at my previous postings will clarify the matter for you. Once you understand what "mismatch loss" really is, the concept of "mismatch gain", or "reflection gain" as it's being called, should be easy to comprehend.

Roy Lewallen, W7EL

Yuri Blanarovich wrote:
>>In itself, it the tuner has I^2R losses to be sure, but if the antenna
>>radiates 100 watts with the lossy tuner in place and only 20 watts without
>>it, how wrong it is to claim an insertion gain of 80 watts for the tuner?
>
>
> Very wrong!
> Tuner is not attributing gain to nothing. It has losses due to losses in its
> components, doesn't matter how you slice it.
> When you match antenna to transmitter output (especially solid state 50 ohm
> type) and make transmitter happy to produce full 100W output, you are not
> adding "gain" from/by the tuner.
> That transmitter when looking to mismatched load cuts power back to 20W, when
> you insert tuner, you are not making up 80W in the tuner (gain?) but making
> transmitter produce full output. You are now putting 100W in and getting some
> 90W out, 10W lost in the tuner, but antenna is getting 90W from the combo.
> Where is the gain in the tuner?
> Looks like things are getting ridiculous here. No tuner (passive) has a gain,
> it has always loss.
>
> Yuri

3700. Re: Oil for dummy loads

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 19:16:19 UTC
From: Sylvan Butler <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Message-ID: <slrnbk7i83.gas.Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid>
Source record: 110144

On 19 Aug 2003 13:44:46 -0700, Javier Henderson <javier@KJSL.COM> wrote:
> Sylvan Butler <Znospam+noZs_0308@hpb13799Z.Zboi.hpZ.com.invalid> writes:
>
>> On 15 Aug 2003 10:08:30 -0700, Javier Henderson <javier@KJSL.COM> wrote:
>
>> > I'll reserve my next question, "Can I store a battery on a bare
>> > concrete floor", for another slow day.
>>
>> Will that be before or after asking about which editor to write
>> web/text/??? documents?
>
> Emacs, of course. Is there anything else?

I thought the topic was editors, not shell replacements!

(vi in the form of gvim for me, thanks)

sdb

--
| Sylvan Butler | Not speaking for Hewlett-Packard | sbutler-boi.hp.com |
| Watch out for my e-mail address. Thank UCE. >>>> change ^ to @ <<<< |
It may be better to live under robber barons than under omnipotent moral busybodies. The robber baron's cruelty may sometimes sleep, his cupidity may at some point be satiated; but those who torment us for our own good will torment us without end, for they do so with the approval of their consciences. -- C. S. Lewis

3701. Assistance with HF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 19:24:48 UTC
From: Jim <miraglow@oasis.co.uk>
Message-ID: <3f43cac2_2@mk-nntp-2.news.uk.tiscali.com>
Source record: 110145

Repeat of earlier post which failed to make it into the NG! Devoured by ISP
?

Hi folks
Although licensed for over 12 years, converting 3 years ago to a
M0...callsign (with 12 wpm cw), personal circumstances have not until now
permitted me to get started on HF.

Problem now is antennas (and indirectly xyl).

Would initially like to cover 14 - 7 and 3.5 MHz with a coax fed
horizontal wire dipole of approx 66', which if carefully cut would
theoretically give full - 1/2 and 1/4 wave respectively for these bands.
An MFJ-949E Atu is available.
Garden to rear of property, narrow but 80' long from house to boundary.
A further 25' is available along side of property, rear to front, but
approx 6' proximity to house wall.
Height of proposed feedpoint approx 17' 6" ; height at boundary 12'
No garden or roof space for any vertical metal!

That's the idea - but I would welcome constructive comment, especially in
the area of feedpoint impedances and swr.
Also would 450 ohm feeder be better than coax ?
My thanks in anticipation. . . .
Bert

Regrettably, due to shared facilities, I am unable to accept incoming
email, so posts to newsgroup pse. ##

3702. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 19:33:22 UTC
From: "paulfriedman@comcast.net" <p.paulfriedman@comcast.net>
Message-ID: <52Q0b.158590$lt4.78106@rwcrnsc51.ops.asp.att.net>
Source record: 110146
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

If you have not done so yet, check out the user reviews for the 706 and
other rigs at http://www.eham.net/reviews/products/14

73

Paul AB0SI

"Martin" <marty123@optonline.net> wrote in message
news:rCO0b.129974$_R5.50384707@news4.srv.hcvlny.cv.net...
> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>
> As it's described it seems to have features I'd like and need: small size,
> both HF and VHF, and a reasonable power level. Any suggestions as to
other
> rigs with similar features would be appreciated also.
>
> Marty K1FHR
>
>

3703. Re: Assistance with HF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 19:36:19 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <d5j7kvod6rehici94g46ah371ij9qsovn4@4ax.com>
Source record: 110147

On Wed, 20 Aug 2003 20:24:48 +0100, "Jim" <miraglow@oasis.co.uk>
wrote:

>Would initially like to cover 14 - 7 and 3.5 MHz with a coax fed
>horizontal wire dipole of approx 66', which if carefully cut would
>theoretically give full - 1/2 and 1/4 wave respectively for these bands.
>An MFJ-949E Atu is available.

Hi Bert,

You seem to have enough room (as long as the length is broadside to
the direction you want to transmit).

You will encounter Hi-Z at some point. Cut another dipole (half size)
to attach to the same drive point and hang its ends a foot below the
larger, original one you planned.

Remember to choke the feed point and you won't bother the household or
neighbors (as much).

73's
Richard Clark, KB7QHC

3704. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 19:51:41 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F43D14D.5CB61B81@uci.edu>
Source record: 110148

W5DXP wrote:
> It happens all the time in optics and no optics engineer
> would be silly enough to assert that the bright ring energy is trapped
> and circulating between the dark rings.

Nor would he be silly enough to assert that energy first goes to the
dark ring and then turns around and goes to bright ring.

ac6xg

3705. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 19:53:39 UTC
From: Fred <peerenbf@dma.org>
Message-ID: <Pine.LNX.4.44.0308201550450.15612-100000@dmapub.dma.org>
Source record: 110149
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

On Wed, 20 Aug 2003, Martin wrote:

> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>
> As it's described it seems to have features I'd like and need: small size,
> both HF and VHF, and a reasonable power level. Any suggestions as to other
> rigs with similar features would be appreciated also.
>
> Marty K1FHR
>
>
>

--
The XYL and I run one in the mobile rig. Performs very well in all
manners. Using a hustler fold over with the resonators we have worked a
lot of states and counties from the pickup. It has a good noise reduction
system and a fair to good noise blanker.

Fred KE8TQ
Lorraine KC8HWV (the dyed in the wool county hunter)

3706. 13 cms atv antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 20:02:27 UTC
From: andy JACKSON <andyjackson@twoeoneklp.freeserve.co.uk>
Message-ID: <bi0k4h$6u0$1@news8.svr.pol.co.uk>
Source record: 110150

hi all thanks for reading this post,i am looking for a 13cms atv
antenna,possible yagi.
is there any were in the uk to buy these,or some body getting rid of them
please could some one help andy 2e1klp

3707. Re: In the Fractal spirit...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 20:14:07 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <aeKdnT0t4e8nS96iU-KYgw@crocker.com>
Source record: 110151
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

nah, he's just a ftl wannabe... somebody patented a ftl antenna years ago,
and as a side effect it even helped your plants grow.

"k4wge" <k4wge@arrl.net> wrote in message
news:7b671b4e.0308200408.4e226ea6@posting.google.com...
> The World's first Superluminal Radio Transmitter!
>
> http://www.radio-faster-than-light.com/

3708. ICOM 706 Reviews All Flavors

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 20:14:34 UTC
From: Sgordon <noshoes2@yahoo.com>
Message-ID: <KEQ0b.28020$Vx2.12885913@newssvr28.news.prodigy.com>
Source record: 110152

http://www.eham.net/reviews/detail/63

--
Sincerely,
Scott Gordon
Phone: 1-888-428-6622
Pre-Recorded Call 1-888-295-2806
Yahoo Chat ID scott1gordon
AOL ID scott1gordon
http://best.justsaycash.com/ Just Say Cash
http://best.toxicfreehomes.com/ Is Your Home A Healthy Home?
http://best.smilestarters.com/ FREE e-Greeting Cards
==========

3709. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 20:35:45 UTC
From: charles@nospam.com
Message-ID: <charles-2008031537480001@192.168.0.3>
Source record: 110153
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

I own one of them & also a Yaesu FT 857. I think with the combination of
the 857 & the ATAS 120 antenna my choice would definately go that way.
Charles

In article <rCO0b.129974$_R5.50384707@news4.srv.hcvlny.cv.net>, "Martin"
<Marge Kleinfeld@naples.net> wrote:

> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>
> As it's described it seems to have features I'd like and need: small size,
> both HF and VHF, and a reasonable power level. Any suggestions as to other
> rigs with similar features would be appreciated also.
>
> Marty K1FHR

3710. Re: In the Fractal spirit.... Part II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 20:43:50 UTC
From: richardharrison@webtv.net
Message-ID: <14220-3F43DD86-104@storefull-2315.public.lawson.webtv.net>
Source record: 110157

Deacon Dave wrote:
"So, which one is infinite?"

Yes. That was my question too.

A velocity change within the near field might produce a shrinking wavelength as the velocity slows. How far does the near field extend with an infinite wavelength?

I`ve heard of velocities greater than c, but these are relative. You have incident and reflected waves on a transmission line and their velocities, rekative to each other, usually exceed c. In space, c is so reliable, we use it to measure distance.

Can we now challenge the radar speed traps?

Best regards, Richard Harrison, KB5WZI

3711. Re: 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 20:55:22 UTC
From: Bill Mahaffey <w6eet@cox.net>
Message-ID: <0001HW.BB692E4A0019E79DF0284600@news.west.cox.net>
Source record: 110154

On Wed, 20 Aug 2003 11:46:49 -0700, Richard Clark wrote
(in message <e1g7kv4lbc65ddh61au30r4vsv1m7tqdpv@4ax.com>):

I have 32 feet of tubing on a 22 ft mast fed with ladder line that has 6 - 30
ft radials. I feed the ladder line to a balun then to a match box. Works
great actually. Dx on 80 thru 10.

question for the experts.
What I am doing seems simple enough, it sure is inexpensive, and
seems to work very well. Assume I am not all wet on my performance
evaluation (namely, "it works very well"), why do you suppose expensive
commercial verticals are so popular? Radials?

bill w6eet

> On 19 Aug 2003 22:46:54 -0700, antennas@yahoo.com (VE8AE Andrew)
> wrote:
>
>> I have an old Shakespear 32 ft antenna. Fed at side near bottom and a
>> large bottom plate. Want to know if I mount it up at the top of a mast
>> how long should I make radial wires for? Do I just calculate for
>> lowest freq and make them 1/8 wavelength? I am going to run it through
>> my tuner to get as many bands out of it as I can. Only about 40ft of
>> coax so it is not too long.
>> Or should I try and design my own trap vertical of some sort??
>> Thanks.
>> Andrew VE8AE
>
> Hi Andrew,
>
> I presume by "fed at side" that this is through some proprietary
> matching - or is it simply insulated from ground?
>
> Use a tuner and forget tuning the radials. You might be tempted to
> build them to "formula" but given that they will no doubt be of the
> drooping variety, then that is an entirely different game. As such,
> add as many as you are comfortable with, as long as you can make them
> without having to bury their tips (a good idea is that their lowest
> point should be out of reach).
>
> Be aware that as impressive as it may feel, the height may be a
> detriment in the higher HF (too long and radiation will be skyward,
> bound).
>
> 73's

> Richard Clark, KB7QHC

3712. Re: In the Fractal spirit.... Part II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 20:57:04 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vk7o7hlno62nad@corp.supernews.com>
Source record: 110155
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

I once passed Mandelbrot's office at IBM Watson.
There was only a single picture on the door.
Of Gauss.
H.
NQ5H

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vk7ficgs7f8ld3@corp.supernews.com...
> All your base are belong to us!
>
> Roy Lewallen, W7EL
>
> (If this doesn't make any more sense to you than the "explanation"
> quoted below, do a web search on the phrase.)
>
bs deleted
(ain't nothin' faster than c, sorry)

3713. Re: Indoor Wireless Cable TV Transmission

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 21:12:46 UTC
From: Joel Kolstad <JKolstad71HatesSpam@Yahoo.Com>
Message-ID: <bi0o7m$588$1@news.oregonstate.edu>
Source record: 110156

Randy N <randy@lilrandys.net> wrote:
> I would like to have something plug into my cable tv jack that can
> transmit the cable over to another antenna that is plugged into the
> VHF input on the VCR in another room. That way I would not have to
> run cable from the cable jack in my bedroom to the home theater system
> in the living room.

Well, the problem here is that the bandwidth of that coaxial cable coming out of the wall is probably on the order of 200-500MHz, depending on how many channels you cable TV provider gives you. You aren't going to find any reasonably priced device that'll transmit that much bandwidth wirelessly.

> Any ideas??

Hire some talented kid to run that cable for you for, say, $50-$100?

You might want to take a mozy around the exterior of your house and see where the TV cable is (I'm assuming your house wasn't originally built wired for cable -- otherwise I can't imagine there wouldn't already be an outlet in the living room); you might find there's an opportune place to tap into it a lot closer to your living room than your bedroom is.

---Joel Kolstad

3714. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 21:24:41 UTC
From: richardharrison@webtv.net
Message-ID: <3321-3F43E719-121@storefull-2316.public.lawson.webtv.net>
Source record: 110160

Keith wrote:
"But nothing that you can observe on the line has changed."

That`s the problem with electricity. It`s usually invisible. The little old lady asks the trollyman will she be shocked if she steps on a rail. He replies: "Not unless you put your other foot on that overhead wire." The advantage of Cecil`s beloved light energy is its visibility. But, give me a little loop with a panel lamp included, and a neon bulb, and unless this is QRP, I can show volts and amps in the open-wire line before and after the short is placed, and where it occurs.

For low power, I may need more sensitive indicators. For high power, all I need is a florescent tube.

Best regards, Richard Harrison, KB5WZI

3715. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 21:27:41 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi0p4d$n26$1@hercules.btinternet.com>
Source record: 110158

"Dr. Slick" wrote
> Actually, my first posting was right all along, if Zo is always real.
>
==========

What a pity - it never is.

3716. Re: Indoor Wireless Cable TV Transmission

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 21:37:53 UTC
From: dplatt@radagast.org
Message-ID: <vk7qhh8hepfve5@corp.supernews.com>
Source record: 110159

>I would like to have something plug into my cable tv jack that can
>transmit the cable over to another antenna that is plugged into the
>VHF input on the VCR in another room. That way I would not have to
>run cable from the cable jack in my bedroom to the home theater system
>in the living room.
>
>Does anyone know of any items that would allow this? I think I need a
>tranmitter and a reciever, but I do not want to change channels at the
>transmitter - I want to be able to change with the reciever (plugged
>into the VCR).
>
>Any ideas??

Transmitting the whole content of the cable-TV feed is simply not going to be possible for you to do. You're talking about a massive amount of bandwidth / frequency spectrum - each station is about 6 MHz wide.

You cannot simply hook the cable up to an antenna and "beam" the RF in the next room. Well, you can, but it'd be quite illegal. Many cable channels use frequencies which are _not_ authorized for broadcasting... they overlap the amateur 2-meter band, aircraft and public-safety frequencies, etc. Cable-TV companies have to go to some lengths to keep these signals _inside_ the cable system and keep them from leaking out into free space.

Although it's not what you want to do, the best you're going to be able to manage is probably something like a remote-controllable tuner at the cable-TV jack (think "An old VCR from the thrift store, which has a working tuner and a busted tape mechanism, costing all of $10 as-is") which has a composite-video output, plugged into one of those little 2.4 GHz Part 15 video transmitters. The 2.4 GHz video receiver's composite video (and audio) outputs would be plugged into your VCR's A/V inputs.

You're likely to find the picture quality, and reliability of this arrangement to be less good than you'd like. I used to use something like it to remote-view a TiVo system, and soon decided to switch over to a wired-in arrangement.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

3717. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 22:16:30 UTC
From: Owen Duffy <owen@oda.com.au>
Message-ID: <3F43F33E.9030600@oda.com.au>
Source record: 110161

Ken Bessler wrote:
> All these devices share a common ground through either the
> coax shield or DC power ground or both. I have yet to install
> a proper station ground for the whole setup and I don't know
> if the power supply is grounded properly at the 115v ac outlet.

Do I read correctly that all the most or all of this stuff is connected case to case, but you are not sure if the whole lot is connected to the electrical installation earth or any other earth systems, ie that it may be floating.

Wouldn't that be something that was quite easy to identify accurately and quickly.

You apparently don't think it important, but it has so much bearing on the likely causes of the problem.

You are right to not assume that the DC power supply -ve terminal is bonded to the electrical earth, practice varies, so test it.

Work out how your station connects to the electrical earth, any substantial metal (eg plumbing, hot water circulation, stormwater plumbing, cladding), and any other earth systems.

When you touch something in your shack and the indicated SWR changes, it is most likely that you have just become part of the RF load on the system, and that means that the thing that you touched is most probably not at ground potential RF wise.

Owen

3718. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 22:25:06 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi0sg2sfa1@titan.btinternet.com>
Source record: 110162

Roy, if you MUST set yourself up as an object lesson, it is better to do so as a warning rather than as an example.

Cec, for the benefit of users of this newsgroup would you mind, please, checking your IEEE dictionary for the meaning of "Insertion Loss/Gain".

To add to the quite unnecessary confusion, people insist on inventing fresh names for this fairly obvious phrase which has been in use by communications engineers for the last 70 years at least.

Reg.

3719. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 22:36:36 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <dkt7kvcoo46grme09i33819g6on924o0ve@4ax.com>
Source record: 110164

On Mon, 18 Aug 2003 21:56:50 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Take an ordinary round solid conductor. For well known reasons at
>alternating currents it will have a higher resistance per unit length that
>at DC.

Which brings up a question. For good results with HF antennas using
powers under 1000 watts, what would be the minimum gage wire that you
should use?

Danny, K6MHE

3720. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:02:45 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi0uml$4la$1@hercules.btinternet.com>
Source record: 110163

> You will observe
> no more quarter than I found. ;-)
>
> 73's
> Richard Clark, KB7QHC

==========

I find being ignored is worse than receiving no quarter. ;o)

Reg, G4FGQ (White Knight in Armour).

3721. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:08:43 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <eOCdnUuAWI3hYt6iXTWJkg@comcast.com>
Source record: 110165

"Owen Duffy" <owen@oda.com.au> wrote in message
news:3F43F33E.9030600@oda.com.au...
>
>
> Ken Bessler wrote:
> > All these devices share a common ground through either the
> > coax shield or DC power ground or both. I have yet to install
> > a proper station ground for the whole setup and I don't know
> > if the power supply is grounded properly at the 115v ac outlet.
>
> Do I read correctly that all the most or all of this stuff is connected
> case to case, but you are not sure if the whole lot is connected to the
> electrical installation earth or any other earth systems, ie that it may
> be floating.
>
> Wouldn't that be something that was quite easy to identify accurately
> and quickly.
>
> You apparently don't think it important, but it has so much bearing on
> the likely causes of the problem.
>
> You are right to not assume that the DC power supply -ve terminal is
> bonded to the electrical earth, practice varies, so test it.
>
> Work out how your station connects to the electrical earth, any
> substantial metal (eg plumbing, hot water circulation, stormwater
> plumbing, cladding), and any other earth systems.
>
> When you touch something in your shack and the indicated SWR changes, it
> is most likely that you have just become part of the RF load on the
> system, and that means that the thing that you touched is most probably
> not at ground potential RF wise.
>
> Owen

Thanks for the tips - I installed braids linking all equipment to the
ground lug on the antenna switch, then one braid from there to the
baseboard heater pipe. I polished the copper pipe with a wire
wheel in my dremel tool and attached the braid to it with a stainless
steel hose clamp. This is my 1st residence with baseboard heaters
- makes for a convienant ground!

Now I can touch any component of the station and the needles on
my swr bridge don't move. I moved the bridge among the components
and re-tested - no movement. I also no longer have an RF buzz in

my computer's amplified speakers. Nice. One thing strange, though - I had to trim my power supply's output (it's adjustable from the front panel). It moved from 13.8 to 14.0 volts when I grounded the FT817. Go figure.

My antenna is a 36 foot inverted V (90 deg) with the apex @ 25' and the ends @ 6' and is fed with coax. Before grounding the antenna resonated at 11 & 21 mhz. Now, it's perfectly flat @ 10.220 mhz and not really resonant @ 20 mhz (2:1 swr @ 20.660 mhz) My Z11 can tune it automatically down to 4.000 mhz and manually down to 1.800 mhz. Yes, I know it's not efficiant. Due to firmware limitations I could not test lower than 1.800 mhz but I think I could have gone further - at 1.800 I had an swr of 1.8:1.

72's and thanks for the help, all!

Ken KG0WX

3722. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:09:41 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308201509.725916b5@posting.google.com>
Source record: 110166

So, when are you going to start using your own head and not depending on others? When will you go through the simple set of equations to find that Vr/Vf = (Zload-Zo)/(Zload+Zo), and there IS NO conjugate on the Zo in the numerator? I went through all that long ago (several years) when someone questioned it, and I trust my calcs. It happens that they agree with those of many, many others.

Which of the following do you not believe? Because if you believe it all, then it's a couple VERY SIMPLE algebraic steps to get to the equation for Vr/Vf.
1. On a TEM line, Vf/If = -Vr/Ir = Zo, which may be reactive.
2. On a TEM line, V=Vf+Vr and I=If+Ir.
3. Where a TEM line connects to a load, the equations in (1) and (2) hold, and V=Zload*I -- because the net line voltage is the same as the voltage across the load, and the net line current is the same as the load current.

Please do us a favor and go do the algebra, and if you get what Besser teaches, show us the steps, and we'll resolve the difference from what we get. If you get what we get, then go take it up with Besser.

Cheers,
Tom

radio913@aol.com (Dr. Slick) wrote in message news:<1d15af91.0308201047.7dff6029@posting.google.com>...
> Actually, my first posting was right all along, if Zo is always real.
>
> From Les Besser's Applied RF Techniques:
>
> "For passive circuits, 0<=[rho]<=1,
>
> And strictly speaking: Reflection Coefficient =
> (Zload-Zo*)/(Zload-Zo)
>
> Where * indicates
> conjugate.
>
> But most of the literature assumes that Zo is real, therefore
> Zo*=Zo."
>
>
> And then i looked at the trusty ARRL handbook, 1993, page 16-2,
> and lo and behold, the reflection coefficient equation doesn't have a
> term for line reactance, so both this book and Pozar have indeed

> assumed that the Zo will be purely real.
>
> That doesn't mean Zload cannot have reactance (be complex).
>
> Try your calculation again, and you will see that you can never
> have a [rho] (magnitude of R.C.)greater than 1 for a passive network.
>
> How could you get more power reflected than what you put in (do
> you believe in conservation of energy, or do you think you can make
> energy out of nothing)? If you guys can tell us, we could fix our
> power problems in CA!
>
> But thanks for checking my work, and this is a subtle detail that
> is good to know.
>
>
> Slick

3723. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:17:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f44030d_8@corp.newsgroups.com>
Source record: 110167

kd1@sympatico.ca wrote:
> My mistake. I forgot to make clear that the transmission line was
> ideal for this thought experiment; that is, R=G=0; no loss. The signal
> does indeed continue to circulate for ever.

So exactly how many angels can dance on the head of a pin?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3724. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:22:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f440410_5@corp.newsgroups.com>
Source record: 110168

kd1@sympatico.ca wrote:
> Given an ideal transmission line (necessary to achieve 0 volts), there
> are no measurements you can make which will indicate whether the short
> is present or not.

Given a Transmission Line God, there are no measurements you can make
which will indicate whether the short is present or not. How about we
limit these technical discussions to the real world?
--
73, Cecil http://www.qsl.net/w5dxp

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3725. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:25:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4404c6$1_5@corp.newsgroups.com>
Source record: 110069

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>That's one reason why the field of optics is so far ahead of RF transmission
>>lines. Everyone in optics understands interference patterns which is exactly
>>what RF standing waves are.
>
> And you have yet to confirm it (or refute it) at the bench. Is your
> interest more rhetorical than actual?

Actually, I confirmed it in my back yard some 15 years ago.
It wasn't rocket science.
--
73, Cecil http://www.qsl.net/w5dxp

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3726. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:29:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4405da$1_5@corp.newsgroups.com>
Source record: 110071

kd1@sympatico.ca wrote:
> If you explanations work only the complexities of the real world
> but collapse in the simplicities of the ideal world, then you
> should cast grave suspicions on your explanations.

That's exactly what my Baptist Preacher tells me every Sunday.
You and my preacher both must assume a supernatural realm for your
ideas to work. So first you (and my preacher) must prove that a
supernatural realm exists. I've been waiting for proof for 65
years. Please feel free to proceed.
--
73, Cecil http://www.qsl.net/w5dxp

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3727. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:31:21 UTC
From: Owen Duffy <owen@oda.com.au>
Message-ID: <3F4404C9.1000604@oda.com.au>
Source record: 110070

Ken Bessler wrote:

> Thanks for the tips - I installed braids linking all equipment to the
> ground lug on the antenna switch, then one braid from there to the
> baseboard heater pipe. I polished the copper pipe with a wire
> wheel in my dremel tool and attached the braid to it with a stainless
> steel hose clamp. This is my 1st residence with baseboard heaters
> - makes for a convienant ground!
>
> Now I can touch any component of the station and the needles on
> my swr bridge don't move. I moved the bridge among the components

Good, that's the current (no pun intended) RF problem apparently resolved.

For electrical safety, the exposed metal in your station should be equipotential bonded to the electrical system earth. That is better done directly, or through the power outlet, rather than indirectly (eg through the heating system, if that is happening).

I urge you to check that you have an effective equipotential bond from the shack equipment to the electrical installation earth.

Owen

3728. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:34:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4406f7_5@corp.newsgroups.com>
Source record: 110072

kd1@sympatico.ca wrote:
> My knowledge of optics is insufficient to comment on any analogies you
> choose to draw. Fortunately, a knowledge of optics is unnecessary to
> understand ... transmission lines.

Equally unfortunately, that's just a delusion of yours.

> Care to think about which and comment?

I have no idea what you are talking about.

> Yes indeed, but current by itself is not energy.

Hmmmmm, I^2*Z0 is not power? (Somebody get the net).
--
73, Cecil http://www.qsl.net/w5dxp

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3729. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:36:51 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <9qOdndpOIrtUm9miXTWJjw@ctc.net>
Source record: 110073
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>

Seems to be the best deal for the money. Had mine for a couple of years and
like it for what it is. I have not sold off my other rigs but have a Yeasu
757 for the low bands and other rigs for VHF/uhf to compair it with.

3730. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:40:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f44086a_5@corp.newsgroups.com>
Source record: 110074

Roy Lewallen wrote:

> A transmission line with perfectly real characteristic impedance doesn't
> exist.
>
> And the (average) net power equals "forward power" - "reverse power"
> only if the transmission line has a perfectly real characteristic
> impedance. Yet you've often blandly subtracted the reverse from the
> forward to get the net power. Your math model is predicated upon things
> that don't (can't?) exist. Does that give you some sort of hint?

Yep, it gives me a hint that my accuracy is pretty good where yours sucks.
--
73, Cecil http://www.qsl.net/w5dxp

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3731. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:46:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4409c0$1_5@corp.newsgroups.com>
Source record: 110076

Jim Kelley wrote:

> W5DXP wrote:
>
>>It happens all the time in optics and no optics engineer
>>would be silly enough to assert that the bright ring energy is trapped
>>and circulating between the dark rings.
>
>
> Nor would he be silly enough to assert that energy first goes to the
> dark ring and then turns around and goes to bright ring.

Energy cannot reverse its momentum without reversing its momentum. If
no other bright rings exist, then it must reverse its momentum.
--
73, Cecil http://www.qsl.net/w5dxp

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3732. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:49:11 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308201549.2e57426c@posting.google.com>
Source record: 110075

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308201041.bc45082@posting.google.com>...

...
> But thanks for checking my work, and this is a subtle detail that
> is good to know.

Checking YOUR work?? I haven't seen anything you've done. You won't
even do the very simple algebra that will show you the right answer,
or at least if you have, you haven't shared it with us.

Why should we not simply ignore you, when you won't do us the courtesy
of going through some simple calcs that we ask you to, so you can see
it for YOURSELF?

Quit hiding behind the skirts of someone else's (flawed) work, and do
a little bit of work yourself, and share THAT with us. If you're
incapable of doing two or three steps of simple algebraic
manipulations to collect linear terms, let us know and we can perhaps
direct you to some help on that.

Bah,
Tom

3733. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-20 23:53:15 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f440b54$1_5@corp.newsgroups.com>
Source record: 110077

Reg Edwards wrote:

> Roy, if you MUST set yourself up as an object lesson, it is better to do so
> as a warning rather than as an example.
>
> Cec, for the benefit of users of this newsgroup would you mind, please,
> checking your IEEE dictionary for the meaning of "Insertion Loss/Gain".

Well Reg, do you want the definition for 1. audible noise measurements,
2. data transmission, 3. fiber optics, 4. overhead power lines, 5. broadband
local area networks, 6. channel signal loss, 7. general insertion loss, matched
generator insertion loss, matched load insertion loss. ????
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3734. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 00:05:17 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <nWSdnR1oWY4jkdmiXTWJiA@comcast.com>
Source record: 110078

"Owen Duffy" <owen@oda.com.au> wrote in message
news:3F4404C9.1000604@oda.com.au...
> I urge you to check that you have an effective equipotential bond from
> the shack equipment to the electrical installation earth.
>
> Owen

Good advice - I guess I should check the outlet for proper
installation then run a braid from the electrical ground to the
copper pipe? My dad owns one of those nifty radio shack
plug in outlet testers - I think I'll borrow it. :-)

Jeez - lots of good advice on this group! Thanks again....

72's de Ken KG0WX

3735. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 00:09:20 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vk83g67d8m3u05@corp.supernews.com>
Source record: 110079

When it breaks under it's own weight, it's too small.
;^PPPP
H.
NQ5H

"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
news:dkt7kvcoo46grme09i33819g6on924o0ve@4ax.com...
> On Mon, 18 Aug 2003 21:56:50 +0000 (UTC), "Reg Edwards"
> <g4fgq.regp@btinternet.com> wrote:
>
> >Take an ordinary round solid conductor. For well known reasons at
> >alternating currents it will have a higher resistance per unit length
that
> >at DC.
>
> Which brings up a question. For good results with HF antennas using
> powers under 1000 watts, what would be the minimum gage wire that you
> should use?
>
> Danny, K6MHE
>

3736. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 00:28:48 UTC
From: CommCtr1 <nospam@tome.com>
Message-ID: <4nU0b.106947$3o3.7510627@bgtnsc05-news.ops.worldnet.att.net>
Source record: 110080
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

I've had both the original 706 and have had the MKIIG since 2001 and the MKIIG is a great radio. I use it as my base radio. I love the radio, but the only thing it doesn't have going is the ability to be programmed by PC. At least I have yet to find a decent program for it.
There is much better software available for the Yaesu radio's. It makes it a lot easier to program all the channels, if you're using for other than HF. I use it for all the bands, so PC programming would be nice.
But like it just the same.
That's my 2 cents worth.

Lou

3737. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 00:44:50 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308201644.267c1dfd@posting.google.com>
Source record: 110081

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bi0p4d$n26$1@hercules.btinternet.com>...
> "Dr. Slick" wrote
> > Actually, my first posting was right all along, if Zo is always real.
> >
> ==========
>
> What a pity - it never is.

Makes for a good enough approximation for most simulations, though.

But if you wanna be anal about it, then:

Strictly speaking: Reflection Coefficient = (Zload-Zo*)/(Zload-Zo)

Where * indicates conjugate.

Slick

3738. Re: Reflection coefficient

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 00:49:20 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi14ugekt1@titan.btinternet.com>
Source record: 110082

"J. McLaughlin" wrote -
> Dear Reg:
> Lab equipment was not used. The lab was just a convenient gathering
> place with a blackboard. (No cigarettes in our lab or anywhere inside
> buildings.)
> I suspect that we made an arithmetic error. Need to revisit what we
> did - much too late at night right now.
> Thanks for the poke. 73 Mac N8TT
==========

Mac, you didn't make an arithmetical error. I think you used the wrong value of terminating reactance Xt. Just a Sherlock Holmes deduction. ;o)

The value of terminating reactance which gives greatest possible magitutude of reflection coefficient is equal to the magnitude of Zo which is equal to |Zo| = Sqrt(Sqr(Ro) + Sqr(Xo)).

As you have already deduced, maximum value occurs when the angle of Zo is equal to -45 degrees at which Ro = -Xo.

You incorrectly set the terminating inductive reactance XL equal to -Xo whereas XL should have been Sqrt(2) times greater.

Now if XL is incorrectly made -Xo then the reflection coefficient calculates to Sqrt(5). Which is where your 5 comes from.

Somewhere in these threads I made the exactly same error myself in a non-calculating context where it was not likely to be noticed. The pair of errors, yours and mine, were probably just coincidental.

I do hope I have not just introduced another. ;o)

You appear to be in an educational establishment. There are two programs available from the website below which you may find useful. Download in a few seconds and run immediately programs COAXPAIR and RJELINE3. They have been written according to classical transmission line formulae, generally accurate to all figures displayed and may be used to check other work which uses only engineering approximations. There are others also of educational value.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

3739. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 00:59:09 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308201659.bc12ff7@posting.google.com>
Source record: 110083

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030820141405.07508.00000299@mb-m25.aol.com>...
> >
> >In itself, it the tuner has I^2R losses to be sure, but if the antenna
> >radiates 100 watts with the lossy tuner in place and only 20 watts without
> >it, how wrong it is to claim an insertion gain of 80 watts for the tuner?
>
> Very wrong!
> Tuner is not attributing gain to nothing. It has losses due to losses in its
> components, doesn't matter how you slice it.
> When you match antenna to transmitter output (especially solid state 50 ohm
> type) and make transmitter happy to produce full 100W output, you are not
> adding "gain" from/by the tuner.
> That transmitter when looking to mismatched load cuts power back to 20W, when
> you insert tuner, you are not making up 80W in the tuner (gain?) but making
> transmitter produce full output. You are now putting 100W in and getting some
> 90W out, 10W lost in the tuner, but antenna is getting 90W from the combo.
> Where is the gain in the tuner?
> Looks like things are getting ridiculous here. No tuner (passive) has a gain,
> it has always loss.
>
> Yuri

Things have been getting very ludicrous, to be very kind!

Agreed that no passive tuner will have gain, just as no reflected
power will ever be greater than the incident power fed into a passive
network.

You can't get energy from nothing, folks!

Slick

3740. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 01:19:22 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fd78kv4pqr1bjcedqch5afqpa6j8lsbmu0@4ax.com>
Source record: 110084

On Wed, 20 Aug 2003 18:25:17 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>That's one reason why the field of optics is so far ahead of RF transmission
>>>lines. Everyone in optics understands interference patterns which is exactly
>>>what RF standing waves are.
>>
>> And you have yet to confirm it (or refute it) at the bench. Is your
>> interest more rhetorical than actual?
>
>Actually, I confirmed it in my back yard some 15 years ago.
>It wasn't rocket science.

Hi Cecil,

I see you haven't got a clue what I wrote. Never mind.

73's
Richard Clark, KB7QHC

3741. Re: 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 01:42:42 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F442392.19CEF493@cwis.net>
Source record: 110085

Bill,
'Cuz people don't want to build an antenna.
'Doc

3742. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 01:42:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi182u$j1u$1@hercules.btinternet.com>
Source record: 110086

> Well Reg, do you want the definition for 1. audible noise measurements,
> 2. data transmission, 3. fiber optics, 4. overhead power lines, 5.
broadband
> local area networks, 6. channel signal loss, 7. general insertion loss,
matched
> generator insertion loss, matched load insertion loss. ????
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
==========

Cec, that is exactly the sort of reply I expected. ;o)

In the present context it can be stated -

INSERTION LOSS due to an electrical network is the additional loss
dissipated in a load when the network is inserted between a generator and
its load. It may actually be a gain. It can be calculated only when both
generator and load impedances are known.

Reg.

3743. Inverted Vee Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 01:46:27 UTC
From: Matthew and Wendy Plante <mapwam@frontiernet.net>
Message-ID: <TvV0b.102135$Zz2.78970@news02.roc.ny>
Source record: 110087

Is it possible to build an antenna that is two inverted vee types with the same central support. I would like to use the idea here: http://www.hamuniverse.com/dipivcal.html but to use four radials, two grounded and two radiators. If no one comments, I'll still experiment with it. but is some one says that this is a bad idea, I'll heed the warning.
Matthew
KC2KEI

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.512 / Virus Database: 309 - Release Date: 8/19/2003

3744. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 02:05:20 UTC
From: kd1@sympatico.ca
Message-ID: <3F4428E0.2E710668@sympatico.ca>
Source record: 110088

Ahhhhh, finally. The not unexpected descent into non-sequitors.

Much safer than actually thinking about questions which might cause
you to change your world view.

...Keith

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > My mistake. I forgot to make clear that the transmission line was
> > ideal for this thought experiment; that is, R=G=0; no loss. The signal
> > does indeed continue to circulate for ever.
>
> So exactly how many angels can dance on the head of a pin?
> --
> 73, Cecil http://www.qsl.net/w5dxp

3745. Re: Inverted Vee Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 03:42:06 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F443F8E.EB6401B6@cwis.net>
Source record: 110089

Matthew,
Yes, it's fairly common. They're called several
names, a 'fan dipole' is one of them.
'Doc

3746. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 03:46:21 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f4441be_1@news1.prserv.net>
Source record: 110090

Richard:

Don't you consider it a little frightening that this is a guy setting up a lab to do EMC measurements, probably for EU certification, and asks a question like this?

--
Crazy George
Remove NO and SPAM from return address

3747. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 03:56:41 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308201956.6bef7454@posting.google.com>
Source record: 110091

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bi0p4d$n26$1@hercules.btinternet.com>...
> "Dr. Slick" wrote
> > Actually, my first posting was right all along, if Zo is always real.
> >
> ==========
>
> What a pity - it never is.

Well, only occasionally. But those who never work above audio might not notice it.

3748. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 05:05:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <BqY0b.4040$sV.3431@newsread1.news.atl.earthlink.net>
Source record: 110092

Dr. Slick:

[snip]
> > What a pity - it never is.
>
> Makes for a good enough approximation for most simulations, though.
:
:
> Slick
[snip]

Heh, heh...

No it's not!

Unless perhaps the only use you ever make of transmission line dynamics
Engineering
is for simple narrow band ham radio problems!

Try solving some real [i.e. broadband] problems where Zo is not real, not
even close, and
you'll see how important it is to use the whole danged complex expression.

rho = (Z - R)/(Z + R) is a complex function as are both the driving point
impedances the
load termination Z and the reference impedance of the transmission line R.

rho is complex! Get over it.

--
Peter K1PO
Indialantic By-the-Sea, FL.

3749. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 05:37:08 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <s8m8kvsnopei809924papb5a94271pnho3@4ax.com>
Source record: 110093

On Wed, 20 Aug 2003 22:46:21 -0500, "Crazy George"
<munschNO@attglobal.net.SPAM> wrote:

>Richard:
>
>Don't you consider it a little frightening that this is a guy setting up a
>lab to do EMC measurements, probably for EU certification, and asks a
>question like this?

Hi George,

Dunno, a lot of the recent postings seem just as off kilter. Maybe
it's the proximity of Mars.

73's
Richard Clark, KB7QHC

3750. Re: Inverted Vee Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 06:29:45 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0308202229.2ddb5d5b@posting.google.com>
Source record: 110094

"Matthew and Wendy Plante" <mapwam@frontiernet.net> wrote in message
news:<TvV0b.102135$Zz2.78970@news02.roc.ny>...
> Is it possible to build an antenna that is two inverted vee types with the
> same central support.
AFAIK, it is - two inverted VEEs for two different bands.

> but to use four radials, two grounded and two radiators.
Radials with inverted VEE ?? The "inverted VEE" is a sort of dipole, a
symmetrical antenna, uses no radials. Both its wires are "live", even
if it is fed via a coax. (There should be a balun or a choke on the
antenna end of the coax to force symmetrical operation and stop
currents on the outer side of its shielding.) Do not ground any part
of your inverted VEE.

Dovnload INV_VEE.EXE from the superb Reg's software collection
http://www.btinternet.com/~g4fgq.regp/page3.html#S301" and play a bit
about it.

73 from Ivan

3751. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 07:37:42 UTC
From: agulesin@hotmail.com
Message-ID: <62155ce7.0308202337.143ec271@posting.google.com>
Source record: 110095

> The short answer: start over and do it right.
Yes! I agree!

> Guessing aside, and taking a clue from this "diagonally" expression, I
> would offer that you look at the antenna from above as you attempted
> in your picture and see if it looks like:
>
>
> +
> |
> | +
> | |
> | | +
> | | |
> | | | +
> | | | |
> .---+-----+-----+-----+----. two rails, one hidden by top
> | | | |
> | | | +
> | | |
> | | +
> | |
> | +
> |
> +
>
> And confirm that each element, in order on one side, alternates
> between the two rails that hold them.

This is what I think, but how can I explain to our managers, who got
the lab set up by a contractor, that they (the 'experts') assembled
the antenna wrongly? what are the possible effects on the measurements
to be made?

As you may have seen in the pdf, the antenna consists of four beams,
in two pairs, meeting at the front (feed point?)

All the longest dipoles are on the right-hand side!

3752. Re: First Published on the Web

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 08:00:23 UTC
From: pez <pez7sv@hotmail.com>
Message-ID: <bi1u6qbrp1@nic.grnet.gr>
Source record: 110096

> "Yuri Blanarovich" wrote in message
>
> Its all Greek to me :-)
> Pictures are nice.
>
> Yuri

Dear Mr. Yuri Blanarovich,

Thank you very much
for your welcomed comments
but
let's forget for the moment,
the language barrier
and
take a closer look please,
at those nice pictures
on the subject of
A Monopole Above a Counterpoise,
especially because
it was mentioned by you
sometime [*]
two years ago ... d;^)

Sincerely,

pez
SV7BAX

---
[*]
e.g.

| From: Yuri Blanarovich (k3bu@aol.com)
| Subject: Re: Matching antenna and air space impedances?
| View: Complete Thread (55 articles)
| Original Format
| Newsgroups: rec.radio.amateur.antenna
| Date: 2001-06-13 18:12:44 PST
|
> If K8CFU has shown that a
> folded monopole inherently produces a stronger signal than an unfolded
> one, he's shown that very well established theory and more than a
> hundred years of practical results are in error. Given the total body of

> evidence, I'll stick with the established theory.
>
> Where were K8CFU's results published? I'd like to see how he made his
> measurements. Good antenna measurements are difficult to make.
>
> Roy Lewallen, W7EL
|
|
| Well, some people for hundreds of years said that she is flat....
|
| Article by K8CFU, W3ESU and K4HU: "Vertical Antennas: New Design and
| Construction Data" published in ARRL ANTENNA COMPENDIUM Volume 2, page 2.
|
| Something like one measurement is better than bilions and bilions of theories
| and calculations?
|
| Yuri, K3BU

3753. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 08:48:33 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308210048.9e4060@posting.google.com>
Source record: 110097

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308201549.2e57426c@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308201041.bc45082@posting.google.com>...
>
> ...
> > But thanks for checking my work, and this is a subtle detail that
> > is good to know.
>
> Checking YOUR work?? I haven't seen anything you've done. You won't
> even do the very simple algebra that will show you the right answer,
> or at least if you have, you haven't shared it with us.
>
> Why should we not simply ignore you, when you won't do us the courtesy
> of going through some simple calcs that we ask you to, so you can see
> it for YOURSELF?
>
> Quit hiding behind the skirts of someone else's (flawed) work, and do
> a little bit of work yourself, and share THAT with us. If you're
> incapable of doing two or three steps of simple algebraic
> manipulations to collect linear terms, let us know and we can perhaps
> direct you to some help on that.
>
> Bah,
> Tom

A bit angry aren't we? Typical of one who has absolutely lost an argument...

When you can show us your free energy device, we would love to see it!

Slick

"Your Rage Has Imbalanced You!" - Lancelot

3754. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 08:52:05 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308210052.77a12b76@posting.google.com>
Source record: 110098

kd1@sympatico.ca wrote in message news:<3F43B7DF.7D9EDA85@sympatico.ca>...
> "Dr. Slick" wrote:
> >
> > So then that would be Work = 2*pi*(radius**2)*force.
> >
> > Right. But it's a bit strange with rotational work, because if
> > you do one rotation, you are essentially back where you started. I
> > believe this has something to do with the fact that the rotational
> > displacement is dimensionless, and linear displacement is in units of
> > length.
>
> If it takes one newton to make a block move and I push it north 1
> metre, then east 1 metre, then south 1 metre, then west 1 metre,
> I am back where I started but I did 4 joules worth of work (but
> probably not useful work).
>

Ok, this is what i meant, "usefull work".

> If I push the same block in a circle of radius 1 metre then I do
> 2pi joules of work: the circumference (distance travelled) times
> the force.
>
> So the expression at the top should not have a square in it.
>
> ...Keith

Nope. It needs another radius term...one for the circumference,
and one for the moment arm.

Slick

3755. Re: IMPORTANT! Changes to your Cable Internet Service

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 08:55:07 UTC
From: JEEPMON <JEEPMON@HOTMAIL.COM>
Message-ID: <LN%0b.162115$lt4.80327@rwcrnsc51.ops.asp.att.net>
Source record: 110099

HELP!!!

<Comcast Online> wrote in message news:3f0d7ffd@transition.attbi.net...
> Dear Former AT&T Broadband Customer,
>
> Comcast has been working to provide you with the same great
> high-speed Internet service enjoyed by current Comcast customers.
>
> You will now need to change some of your news configuration
> settings on your computer. Your newsgroup subscriptions are
> still available. Your newsgroups software will display new
> articles in those newsgroups as soon as it is reconfigured.
>
> Comcast has created an automatic process to make these changes as
> simple as possible. You may also choose to use a manual process.
> To change your news settings, please click here or go to
>
> http://connect.comcast.net
>
> and follow the Transition Wizard instructions.
>
> Comcast offers the same speed and reliability you've enjoyed with
> AT&T Broadband, plus a host of exciting features and enhancements
> to make your broadband experience even better! Here are just a
> few of the new features you'll enjoy as a Comcast customer:
>
> * Comcast.net *
> Your portable home page. It's all here! Movie trailers, and a
> daily guide to the hottest news.
>
> * Photo Center *
> A simple way to store, share and get prints of your photos. Plus,
> you can enter Comcast's Photo of the Day contest, and have your
> best shot featured on the Comcast home page at www.comcast.net.
>
> * Comcast Support *
> Easily diagnose and solve system problems that may affect your
> online experience. Use Comcast's live online chat with customer
> support, or convenient automated troubleshooting tools.
>
>
> Visit http://connect.comcast.net for more information and for
> answers to questions about the transition. If you need
> additional assistance, you may contact Comcast High-Speed

> Internet Customer Care at 1-888-262-6300.
>
> Thank you.
>
> Comcast Online

3756. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 09:01:24 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308210101.5489abf2@posting.google.com>
Source record: 110100

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308201509.725916b5@posting.google.com>...
> So, when are you going to start using your own head and not depending
> on others? When will you go through the simple set of equations to
> find that Vr/Vf = (Zload-Zo)/(Zload+Zo), and there IS NO conjugate on
> the Zo in the numerator? I went through all that long ago (several
> years) when someone questioned it, and I trust my calcs. It happens
> that they agree with those of many, many others.
>

Who agrees with you? Les Besser is an established authority, as is
the ARRL, and Pozar... i use their examples because I am not yet an
authority myself. Please do some more research before you type.
Hey, we are all standing on the shoulders of giants!

I certainly wouldn't want to stand on YOUR shoulders, though...

> Which of the following do you not believe? Because if you believe it
> all, then it's a couple VERY SIMPLE algebraic steps to get to the
> equation for Vr/Vf.
> 1. On a TEM line, Vf/If = -Vr/Ir = Zo, which may be reactive.
> 2. On a TEM line, V=Vf+Vr and I=If+Ir.
> 3. Where a TEM line connects to a load, the equations in (1) and (2)
> hold, and V=Zload*I -- because the net line voltage is the same as the
> voltage across the load, and the net line current is the same as the
> load current.
>
> Please do us a favor and go do the algebra, and if you get what Besser
> teaches, show us the steps, and we'll resolve the difference from what
> we get. If you get what we get, then go take it up with Besser.
>
> Cheers,
> Tom
>

I've checked my results with MIMP, and the reflection coefficients
matched the equation:

"For passive circuits, 0<=[rho]<=1,

And strictly speaking: Reflection Coefficient
=(Zload-Zo*)/(Zload-Zo)

Where * indicates conjugate."

A bit angry aren't we? Typical of one who has absolutely lost an
argument...

When you can show us your free energy device, we would love to see it!

Slick

"Your Rage Has Imbalanced You!" - Lancelot

3757. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 09:10:33 UTC
From: ac6la@arrl.net
Message-ID: <960228f1.0308210110.7e7f49ed@posting.google.com>
Source record: 110101

It is my opinion that the confusion over whether to use Zo or Zo*
(conjugate of Zo) in the computation for reflection coefficient arises
because there are two different meanings for the reflection
coefficient itself: one applies to voltage or current waves and the
other applies to "power waves." I do not have the Besser text
mentioned above but a 1965 IEEE paper by Kurokawa also uses the Zo*
term to calculate the reflection coefficient. However, Kurokawa makes
it clear that he is referring to "power waves" and not voltage or
current waves.

The Kurokawa paper was given as the justification for what I believe
is an erroneous equation in the 19th edition of the ARRL Antenna Book.
In all previous editions (at least the ones that I have) the formula
for reflection coefficient uses the normal Zo term. In the 19th
edition the formula was changed to use the Zo* (Zo conjugate) term.

I did some research on this and exchanged emails with some smart
folks, including Tom Bruhns and Bill Sabin. Then I wrote a note to
Dean Straw, editor of the Antenna Book, explaining why I thought the
new formula in the 19th edition was wrong. Here's a copy of that
note:

==========
Email to Dean Straw, 10/5/01

Dear Dean,

A week or so ago I wrote you concerning the formula for rho in the
19th Antenna Book:

rho = (Za-Zo*)/(Za+Zo) [Eq 6, page 24-7]

where Za is the impedance of the load, Zo is the line characteristic
impedance, and Zo* is the complex conjugate of Zo. You replied that
the justification for using Zo* in the numerator is explained in the
1965 IEEE paper by Kurokawa, and that it didn't really make much
difference whether the "classic" formula (Zo in numerator) or the
"conjugate" formula (Zo* in numerator) was used at SWR levels under
100 or so.

I obtained and studied the Kurokawa paper, did some research on the
Internet, exchanged some emails with some folks who know more about
this stuff than I do, and read through all the other technical
literature I have concerning rho. I'm afraid I disagree with both of
your statements (1. Justified by Kurokawa; 2. Doesn't matter for
normal SWR levels). Here's why:

An -infinitely- long line will have zero reflections (|rho|=0). If a line of -finite- length is terminated with a load ZL which is exactly equal to the Zo of the line, the situation will not change, there should still be zero reflections. So if the formula for rho is
rho = (ZL-Zo)/(ZL+Zo)
then |rho| = 0, since the numerator evaluates to 0+j0.
However, if the formula is
rho = (ZL-Zo*)/(ZL+Zo)
then |rho| evaluates to something other than 0, since the numerator evaluates to 0-j2Xo.

To use an example with real numbers: RG-174, Ro=50, VF=.66, Freq=3.75 MHz, matched line loss = 1.511 dB/100 ft (at 3.75 MHz), which yields a calculated Zo (at this Freq) of Zo=50-j2.396. If ZL = Zo = 50-j2.396, then:
|rho(Zo)| = 0 [classic formula, Zo in the numerator]
and
|rho(Zo*)| = 0.0479 ["conjugate" formula, Zo* in the numerator]

Using SWR=(1+|rho|) / (1-|rho|), these two rho magnitude values evaluate to SWR 1:1 and SWR 1.10:1, respectively. So if a line is terminated with a load equal to Zo, which is equivalent to an infinite line, the "conjugate" formula results in a rho magnitude greater than 0 and an SWR greater than 1. This doesn't seem to make intuitive sense.

This same anomaly may be extended to loads of other than Zo and to points other than just the load end of the line. Using the Zo for RG-174 as stated above (Zo=50-j2.396), and an arbitrary but totally realistic load of ZL=100+j0 ohms (nominal 2:1 SWR), I used the full hyperbolic transmission line equation to calculate what the Zin would be at points along the line working back from the load from 0ï¿½ to 360ï¿½ (one complete wavelength) in 15ï¿½ steps. I then calculated the magnitude of both rho(Zo) [classic formula] and rho(Zo*) [conjugate formula] using the Zin values, and plotted the results. Here's the plot:
http://www.qsl.net/ac6la/adhoc/Rho_Classic_Conjugate.gif

(The scale for rho is on the right. The left scale is normally used for R, X, and |Z|, but those plot lines have been intentionally hidden in this case just to reduce the chart clutter.) Note that the plot line for rho(Zo) [classic formula] progresses downward in a smooth fashion as the line length increases, as expected. The rho(Zo*) [conjugate formula] swings around, and even goes above the value at the load point until a line length of about 75ï¿½ is reached. Again, this doesn't seem to make intuitive sense, and I can think of no physical explanation which would result in the voltage reflection coefficient magnitude "swinging around" as the line length is increased.

Of course, the same data may be used to calculate and then plot SWR. Here's the plot:
http://www.qsl.net/ac6la/adhoc/SWR_Classic_Conjugate.gif

Again, this doesn't seem intuitive, and this is for a load SWR much less than 100.

Now if the intent of the "conjugate" formula was to always force rho to be <= 1 and therefore to avoid the "negative SWR" problem, it appears that this has the effect of "throwing the baby out with the bathwater." That is, it may make it possible to calculate a rho value less than 1 and hence a non-negative SWR value in an "extreme load" situation like ZL=1+j1000 ohms (even though SWR is pretty meaningless in that case). However, it also changes the rho and SWR values for completely reasonable loads, such as the example above. At a line length of 45ï¿½, the impedance at the input end of the line is 41.40-j31.29. Using the "classic" rho formula results in calculated rho and SWR values of
rho=0.3095 SWR=1.90
while the "conjugate" formula gives
rho=0.3569 SWR=2.11
Note that these results are for a perfectly reasonable load on a perfectly reasonable line at a perfectly reasonable frequency, but the results differ by an unreasonable amount.

Another point. In the William Sabin article, "Computer Modeling of Coax Cable Circuits" (QEX, August 1996, pp 3-10), Sabin includes the Kurokawa paper as a reference. Even with that reference, Sabin gives the "classic" formula for rho (called gamma in his paper) as Eq 31. When I asked him recently about this, he stated that the article is correct and he stands by the given formula for rho.

Given these various intuitive arguments as to why computing rho with the Zo conjugate formula doesn't make sense, where did it come from? Well, so far I have two candidates:

1) A QST Technical Correspondence article by Charlie Michaels (Nov 1997, pg 70). Michaels gave a formula for computing the portion of the loss on a line that is due to standing waves. That loss formula involves calculating rho by using the "conjugate" formula. The SWR dB loss result, when added to the normal matched line loss number, gives exactly the same figure for total power loss as do other formulas that use completely different techniques (such as in papers by Sabin and Witt). However, the Michaels QST article never said that the rho "conjugate" formula should be used to calculate rho in the general case, only that it should be used as part of an intermediate step to calculate a dB number.

2) The 1965 IEEE paper by Kurokawa, "Power Waves and the Scattering Matrix." Kurokawa does indeed show a formula for -a- reflection coefficient that uses Z conjugate in the numerator. However, in Section I of his paper he explains that he is talking about "power waves" and takes pains to explain that these waves are not the same as the more familiar voltage and current traveling waves. He then goes on to give a mathematical description of these power waves. In Section III he defines the power wave reflection coefficient as

s = (ZL - Zi*) / (ZL + Zi)

where ZL is the load impedance and Zi is the internal impedance of the source. In a footnote he makes it clear that "s" is equal to the voltage reflection coefficient only when Zi is real (no jX component). Finally, in Section IX ("Comparison with Traveling Waves") he explains that when the line Zo is complex the calculations that apply to voltage and current waves are not the same calculations used to determine the power delivered. He ends this section with this statement: "Further, since the traveling wave reflection coefficient is given by (ZL-Zo)/(ZL+Zo) [note no conjugate] and the maximum power transfer takes place when ZL=Zo*, where ZL is the load impedance, it is only when there is a certain reflection in terms of traveling waves that the maximum power is transferred from the line to the load."

To put some actual numbers with this statement, consider the RG-174 from above (Zo=50-j2.396), with a load of ZL=Zo*=50+j2.396. Then

|(ZL-Zo)/(ZL+Zo)| = 0.0479
= small voltage traveling wave reflection
coefficient

while

|(ZL-Zo*)/(ZL+Zo)| = 0
= zero power wave reflection, meaning maximum
power transfer.

Now it seems to me that this clears up the confusion. It looks like it is necessary to consider -two different meanings- for rho. One is for the voltage (or current) traveling wave reflection coefficient. The classic formula to compute that still holds (as Kurokawa states), and that is the rho that should be used when talking about voltage (or current) standing waves on a line. Specifically, that is the rho that should be used in the formula for SWR,
SWR = 1 + |rho| / 1 - |rho|
possibly with an explanation that this formula is only applicable when |rho| < 1.

The -other- meaning for rho is used when dealing with "power waves" or with power and loss calculations as in the Michaels QST formula, and -that- rho (call it rho prime, or maybe some other letter ala Kurokawa) may be defined as
rho' = (Z-Zo*)/(Z+Zo)
However, rho' does -not- have to do with voltage (or current) traveling waves, and may -not- be used to compute SWR. If it is understood that there are two different "reflection coefficients" then everything starts to fall in place, including the last part of the Kurokawa quote above saying that there is a situation when the "voltage" reflection coefficient is slightly greater than 0 while the "power wave" reflection coefficient is exactly 0. Note that no matter what combination of values for Zo and ZL are used, |rho'| will never be greater than 1 (although it can be equal to 1 for purely reactive

loads), thus satisfying the intuitive understanding that there can never be more power reflected -from- a (passive) load than is delivered -to- a (passive) load. But at the opposite extreme, as shown above, "no reflected power" but does -not- necessarily mean "no standing waves."

A further example of the importance of making a distinction between the voltage reflection coefficient and the power reflection coefficient would be the following: Assume a load of ZL=1+j1000 with the RG-174 Zo from above, Zo=50-j2.396. Then

|rho| = 1.0047 (voltage wave reflection coefficient)

and

|rho'| = 0.9999 (power wave reflection coefficient)

This shows that the reflected voltage is slightly greater than the incident voltage, at least at the point of reflection, before the line loss has caused the calculated (or measured) rho to decay. It further shows that the reflected power is still less than the incident power, thus not violating the principal of conservation of energy. Robert Chipman, "Theory and Problems of Transmission Lines," presents a mathematical proof of this, including this quote from page 138: "... a transmission line can be terminated with a [voltage] reflection coefficient whose magnitude is as great as 2.41 without there being any implication that the power level of the reflected wave is greater than that of the incident wave."

In summary, I think a distinction must be made between the "voltage" reflection coefficient and the "power" reflection coefficient, and therefore I think the following changes should be made to the 19th edition of the Antenna Book:

1. Revise the initial equation for rho [Eq 6, page 24-7] back to the classic "non-Zo*" form, since rho is used in this context as the voltage reflection coefficient.

2. Equation 11 on page 24-9 is
rho = sqrt(Pr/Pf)
where Pr and Pf are the reflected and forward power levels. Intuitively this seems to be the "second" definition for rho, namely the power reflection coefficient, although my math skills are not up to the task of proving that this formula is the equivalent of the Kurokawa formula for the power reflection coefficient 's'. Perhaps this formula should have a footnote indicating that it refers to the "power" and not "voltage" reflection coefficient, and that the two are technically equal only when the Xo component of the line Zo is ignored. (The same point as is made in the Kurokawa footnote referred to above.) Given the precision to which most amateurs can measure power, and the fact that under normal circumstances the line loss and hence the Xo value is much smaller than that of RG-174, of course this point is moot in a practical sense.

3. If Equation 11 is for the "power" reflection coefficient, then Equation 12 is a mixing of apples and oranges. Perhaps the second equal sign could be replaced with an "almost equal" sign.

4. Equation G in Table 2 "Coaxial Cable Equations" on page 24-20 should remain as is, since it obviously is referring to the voltage reflection coefficient.

Thanks for looking this over, Dean. I would certainly welcome any comments or feedback you might have.

73,
Dan Maguire AC6LA
==========

I don't know if Dean has changed the formula in later printings of the 19th edition or in the upcoming 20th edition. He responded that he was busy with other matters and would get back to me later. He never did and I let the matter drop.

I have the Kurokawa paper in pdf format. If anyone would like a copy, drop me a private email and I'll be glad to send it to you. The two charts mentioned above were produced with a modified version of the XLZIZL Excel application. XLZIZL is available free from www.qsl.net/ac6la.

Dan, AC6LA

3758. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 09:32:07 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308210132.b1148b2@posting.google.com>
Source record: 110102

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:<BqY0b.4040$sV.3431@newsread1.news.atl.earthlink.net>...
> Dr. Slick:

> >
> > Makes for a good enough approximation for most simulations, though.
> :

>
> Heh, heh...
>
> No it's not!
>

I'm sure not in ALL cases. But even the ARRL handbook assumes
the Zo to be purely real, as does most of the RF literature, Pozar
included.

Gee..maybe there is a reason? You do trust the ARRL handbooks,
right? Look it up yourself, don't take my word for it...

> Unless perhaps the only use you ever make of transmission line dynamics
> Engineering
> is for simple narrow band ham radio problems!
>
> Try solving some real [i.e. broadband] problems where Zo is not real, not
> even close, and
> you'll see how important it is to use the whole danged complex expression.
>
> rho = (Z - R)/(Z + R) is a complex function as are both the driving point
> impedances the
> load termination Z and the reference impedance of the transmission line R.
>
> rho is complex! Get over it.

Get over what? Rho is the magnitude of the Reflection
Coefficient, which can certainly be complex, but Zo is often assumed
to be real.

OK! OK! If you wanna be anal about it, then:

Strictly speaking: Reflection Coefficient = (Zload-Zo*)/(Zload-Zo)

Where * indicates conjugate.

Look it up...

Slick

3759. Re: no Saddams

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 10:19:12 UTC
From: Paul <mooney@cytanet.com.cy>
Message-ID: <pan.2003.07.25.18.03.41.659892@cytanet.com.cy>
Source record: 110103

On Wed, 23 Jul 2003 23:18:38 -0700, Mark Keith wrote:

> k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030723110714.28226.00000487@mb-m24.aol.com>...
>> BTW, looks like my message to prevent spam in my return address works two ways:
>> one it reduced automated spam, two - there are two "noSaddams" dead as a door
>> nail. Another egg in the face of the bitching DummycRATS! I hope they soon
>> get/confirm the Big Papa Sodumb deadsky soon too.
>
> Dunno, I think they still need to give Bin Doo-Doo a touch up. He
> seems to still be slithering around somewhere. I consider him the
> worst of the lot, considering his recent actions, and everyone seems
> to have forgotten about his slimy carcass. Something occurred to me
> recently. Bin Doo-Doo probably thought when he did the 9-11 thing that
> we would all wilt over, whine and moan for a while, and all would
> continue to be biz as usual in his part of the world. Probably
> considered Sodamn Insane one of his close partners in crime. Probably
> thought they would be out water skiiing about this time, celebrating
> their crushing defeat of the dreaded yankee redneck infidel bastards.
> But now his group is half toast after being given a healthy round of
> air to ground enemas, and same for ole Sodamn. His days are numbered.
> Bin Doo-Doo brought the wrath of Bush on the whole group of terrorist
> deathmonglers and dicktaters. I bet Sodamn curses Bin Doo-Doo's name
> when he hovers in his fortified double wide to attempt fitfull sleep
> at night. Who wants to be next? Come on boys, lets spin the wheel and
> get this show on the road before we are all broke. Making all those
> high $$$$ missiles will boost the economy in certain parts of the
> country. MK

1. There are no connections between S. Hussein & Al-Quada - they hate each
other.

2. There are connections between Saudi Arabia & Al-Q, when will the
attacks against them start?

3. have any high-ranking Al-Q 'officials' been killed/captured yet?

4. S. Hussein has not been responsible for any terrorist attacks, even
though he was a murderous dictator who (with his son)used weapons of mass destruction
(bought form
the west) against his own people.

problems tend to get harder to deal with when you combine them.

Paul M

3760. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 10:19:23 UTC
From: aokd5fxt@aol.com
Message-ID: <20030821061923.07473.00000175@mb-m25.aol.com>
Source record: 110104

My 706 has worked great for 2 or 3 years, however, my mkiiG has some problems.
1) my ssb power is only 30 watts on 20-160 meters. (AM power and rtty Power is ok)
2) SWR and Power Meters seem to be reversed on 20-160 meters.
I use an external tuner to verify this.
3) 440 does not seem to receive.
4) Local service people (Avvid) does not work on the G model
5) Guess it will have to go back to Icom for alignment at $75 / hour

3761. Re: HV Vertical ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 10:28:38 UTC
From: "Mr. Alex" <mr.alex@email.si>
Message-ID: <T911b.1435$2B6.297309@news.siol.net>
Source record: 110105

"MAS" wrote in message
news:AP20b.350$tS2.64394@newsfep2-win.server.ntli.net...
>
> What's your view on the best HF multi band vertical for me.
>

I have Diamond CP6 on top of 10 stoy building. That's about 55m off the ground. It works great on 10m! Big problems on 15m (it takes me a lot of time to get through to DX stations), I don't have license for 20m, and nice performance on 80m. It is 4.6m long and have one radial for each band (6 radials, 50MHz, 28/29MHz, 21MHz, 14MHz, 7MHz, 3.5MHz).

It is nice antenna for porable use, simple to assemble and short for transport. But for real work I think I will get me GAP Titan.

Hope you will get something that will work for you. :)

73's de Alex - S57MHA

3762. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 10:31:45 UTC
From: kd1@sympatico.ca
Message-ID: <3F449F91.253174C1@sympatico.ca>
Source record: 110106

Please think carefully about your reply.

Energy = Force x Distance

When I push the block in a square pattern, the distance is the sum of
the sides of the square.

When I push the block in a circle, the distance is the circumference,
which is 2 x pi x Radius.

If, after reviewing the above, you still think the radius needs
squaring, please explain why the equation for energy when pushing
in a circle is different than that for pushing in a square.

As an exercise, consider pushing in a triangle pattern, a square
pattern, pentagon, hexagon, heptagon, octagon, ...

Each pattern above is getting closer and closer to being a circle;
at which pattern does the equation for Energy change from being
the distance moved to being twice the enclosed area?

...Keith

"Dr. Slick" wrote:
>
> kd1@sympatico.ca wrote in message news:<3F43B7DF.7D9EDA85@sympatico.ca>...
> > "Dr. Slick" wrote:
> > >
> > > So then that would be Work = 2*pi*(radius**2)*force.
> > >
> > > Right. But it's a bit strange with rotational work, because if
> > > you do one rotation, you are essentially back where you started. I
> > > believe this has something to do with the fact that the rotational
> > > displacement is dimensionless, and linear displacement is in units of
> > > length.
> > >
> > If it takes one newton to make a block move and I push it north 1
> > metre, then east 1 metre, then south 1 metre, then west 1 metre,
> > I am back where I started but I did 4 joules worth of work (but
> > probably not useful work).
> > >
>
> Ok, this is what i meant, "usefull work".
>
> > If I push the same block in a circle of radius 1 metre then I do
> > 2pi joules of work: the circumference (distance travelled) times
> > the force.

> >
> > So the expression at the top should not have a square in it.
> >
> > ...Keith
>
> Nope. It needs another radius term...one for the circumference,
> and one for the moment arm.
>
> Slick

3763. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 11:41:05 UTC
From: kd1@sympatico.ca
Message-ID: <3F44AFD1.63991536@sympatico.ca>
Source record: 110107

kd1@sympatico.ca wrote:
>
> Please think carefully about your reply.
>
> Energy = Force x Distance
>
> When I push the block in a square pattern, the distance is the sum of
> the sides of the square.
>
> When I push the block in a circle, the distance is the circumference,
> which is 2 x pi x Radius.
>
> If, after reviewing the above, you still think the radius needs
> squaring, please explain why the equation for energy when pushing
> in a circle is different than that for pushing in a square.
>
> As an exercise, consider pushing in a triangle pattern, a square
> pattern, pentagon, hexagon, heptagon, octagon, ...
>
> Each pattern above is getting closer and closer to being a circle;
> at which pattern does the equation for Energy change from being
> the distance moved to being twice the enclosed area?

And I forgot to say...

In a rotary system, it is often deemed convenient to think of Distance
in terms of rotations or angular displacement.

Torque is just a way of thinking about Force so that you can use
angular displacement instead of distance.

...Keith

3764. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 12:45:13 UTC
From: Nitespark <nitespark@cox.net>
Message-ID: <j931b.12013$uh6.655@lakeread05>
Source record: 110108
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Martin wrote:
> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>
> As it's described it seems to have features I'd like and need: small size,
> both HF and VHF, and a reasonable power level. Any suggestions as to other
> rigs with similar features would be appreciated also.
>
> Marty K1FHR

I am using the 706MKII (not G model) mobile and have had great results with it.

I have used it with a Webster Bandspanner antenna and also a hamstick antenna. I am currently using it with the AH-4 antenna tuner and the 20m hamstick and results are good. The advantange, of course, to the tuner, is I can instantly change bands on the antenna system at the push of a button.

I have also used my 706 in a portable operation. Last year, I went to the island of Bonaire on vacation. I packed my 706 in a foam padded briefcase along with a small tuner, a switching power supply, and carried a homemade 20 meter dipole. Had a great time, LOTS of contacts all over the US and Europe.

Andy
WD4KDN

3765. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 12:51:24 UTC
From: richardharrison@webtv.net
Message-ID: <12761-3F44C04C-3@storefull-2317.public.lawson.webtv.net>
Source record: 110109

Dr. Slick wrote:
"And if the permittivity (impedance) of the material surrounding an antenna will affect its input impedance, I think it is something to consider."

The permittivity surrounding our antennas rarely changes and is the same for nearly all antennas.

My dictionary says of permittivity: "See Dielectric Constant".

Velocity can be affected by dielectric constant as is seen in solid-dielectric coax. Fortunately, the dielectric constant of the environment our antennas operate in is nearly constant.

Were matching antennas to 377 ohms significant, it would manifest itself in the century of experience of using many antennas of many differing types.

Best regards, Richard Harrison, KB5WZI

3766. re: Rockwell Collins "PropMan 2000" propagation s/w

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:29:06 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <CO31b.1200$6e5.91003@nnrp1.ptd.net>
Source record: 110110
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.dx

For those of you who have the Rockwell Collins
"PropMan 2000" propagation prediction s/w
package, you may have noticed that the program
no longer retrieves "Space Weather" input from
the internet automatically, but gives error messages.

This is due to the fact that the sources of the data
have changed because of several factors:

1) NOAA has switched satellites for some of the proton
data, due to operational considerations ... this caused
filenames to change (old filenames based on satellite x
are no longer being updated, but the equivalent data is
now available from satellite y)
2) directory structures on the servers have changed

I have created a new "propman.ini" file that contains
the information necessary to retrieve the space wx
data. It is available for amateur use on my personal
web page at http://home.ptd.net/~wk3c

The SSN (smoothed sunspot data) is no longer available
automatically, but can be retrieved and entered manually
from http://www.nwra-az.com/spawx/env_latest.html

use the "NWRA SSNe" data from the rightmost column
for the current date.

I hope this information is helpful. I have been talking with
the engineer at Rockwell Collins and he has verified that
my propman.ini works correctly. They are also considering
modifying the parser that read the old SSN data file to extract
the SSN data from the website above (if they implement this,
it will require another change to propman.ini to point to the
website so the program can "see" and parse the SSN data)

73,
Carl - wk3c

3767. Re: IMPORTANT! Changes to your Cable Internet Service

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:40:28 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <gZ31b.163677$Oz4.44121@rwcrnsc54>
Source record: 110111

We made the transition in June. Very straightforward.

If you are using Internet Explorer/Outlook from Microsoft then simply
click on the Comcast address given, download the program, and restart
your computer on the date specified. It will automatically transfer all
relevant info for the transition.

If you are not using Internet Explorer then you will have to manually
transfer the information for your POP3, email, and newsgroup by hand. I
use Netscape 7.1 and it took about 2 minutes to make the changes.

Comcast will automatically forward email from the ATTBI.com address to
your COMCAST.net address for about 1 to 1 1/2 years.

Comcast switched us, wife and I on LAN, on 1 July without a hiccup. My
wife uses IE/Outlook and I use Netscape.

Deacon Dave, W1MCE
+ + +

JEEPMON wrote:

> HELP!!!
>
> <Comcast Online> wrote in message news:3f0d7ffd@transition.attbi.net...
>
>>Dear Former AT&T Broadband Customer,
>>
>>Comcast has been working to provide you with the same great
>>high-speed Internet service enjoyed by current Comcast customers.
>>
>>You will now need to change some of your news configuration
>>settings on your computer. Your newsgroup subscriptions are
>>still available. Your newsgroups software will display new
>>articles in those newsgroups as soon as it is reconfigured.
>>
>>Comcast has created an automatic process to make these changes as
>>simple as possible. You may also choose to use a manual process.
>>To change your news settings, please click here or go to
>>
>> http://connect.comcast.net
>>
>>and follow the Transition Wizard instructions.
>>
>>Comcast offers the same speed and reliability you've enjoyed with
>>AT&T Broadband, plus a host of exciting features and enhancements

>>to make your broadband experience even better! Here are just a
>>few of the new features you'll enjoy as a Comcast customer:
>>
>>* Comcast.net *
>>Your portable home page. It's all here! Movie trailers, and a
>>daily guide to the hottest news.
>>
>>* Photo Center *
>>A simple way to store, share and get prints of your photos. Plus,
>>you can enter Comcast's Photo of the Day contest, and have your
>>best shot featured on the Comcast home page at www.comcast.net.
>>
>>* Comcast Support *
>>Easily diagnose and solve system problems that may affect your
>>online experience. Use Comcast's live online chat with customer
>>support, or convenient automated troubleshooting tools.
>>
>>
>>Visit http://connect.comcast.net for more information and for
>>answers to questions about the transition. If you need
>>additional assistance, you may contact Comcast High-Speed
>>Internet Customer Care at 1-888-262-6300.
>>
>>Thank you.
>>
>>Comcast Online
>
>
>

3768. Re: Mobile Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:44:19 UTC
From: 0|||||||0 Ray <res009js-nospam-@gte.net>
Message-ID: <T041b.18840$kK4.1736@nwrddc02.gnilink.net>
Source record: 110112

Thanks for the reply, Richard. I will look around for mounting options. I would like to keep it mounted as high as possible because I am often in places where I ford deep water and mud. The higher the better to keep the elements out of the workings.

Ray
0|||||||0

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:rfd7kv8e9eoo777vq385pm9otqokicoo7m@4ax.com...
> On Wed, 20 Aug 2003 17:10:19 GMT, "0|||||||0 Ray"
> <res009js-nospam-@gte.net> wrote:
>
> >New ham antenna questions.... What would be a good antenna, store or
> >homemade, for my vehicle? Where is the best place to locate the antenna
on
> >my vehicle?
> >
> >I drive a Jeep Wrangler and will soon want to add a mobile with a dual
band
> >VHF/UHF antenna. This vehicle has two tops, one fabric and one
fiberglass.
> >I'm guessing I will probably attach the antenna to the light bar, the
> >highest point on the vehicle, across the top of the windshield.
> >
> >Thanks,
> >
> >Ray
> >0|||||||0
> >
>
> Hi Ray,
>
> Welcome!
>
> Ignore the antennas for a moment, and shop for mounting options
> instead. The good antenna vendors have many to choose from and you
> will spend more time with them than the antenna itself (which, if you
> choose a good mounting system, you can then do home brew antennas to
> mate to them far easier than re-inventing the wheel every time).
>
> 73's
> Richard Clark, KB7QHC

3769. Re: 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:45:12 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308210545.1698610b@posting.google.com>
Source record: 110113

Richard Clark <kb7qhc@comcast.net> wrote in message
>
> Use a tuner and forget tuning the radials. You might be tempted to
> build them to "formula" but given that they will no doubt be of the
> drooping variety, then that is an entirely different game. As such,
> add as many as you are comfortable with, as long as you can make them
> without having to bury their tips (a good idea is that their lowest
> point should be out of reach).

Myself, I would tune them, or have them very close. Or at least on the preferred band. Better decoupling from the feedline for one thing. If the radials do not present a low Z for a certain band, they won't work too well at all. I would grount mount if I didn't want to tune the radials. It's going to be very hard to get proper performance on all bands with only one tuning setup, unless maybe he uses an autotuner of some type. "elevated"
I'd pick the most likely used bands and build for those. IE: it will be hard to run 40 and 20 both, with good results on both bands. If I ran 40/17m as the main design, I'd forget about 20m. And visa versa. If not, be prepared for mediocre results on one of the bands. I've never tried feeding an elevated GP/non resonant radials with ladder line and a tuner. I know it can be done, but I wonder about the amount of common mode currents and performance on "non radialed" bands, compared to a normal setup with 1/4 wave radials.
>
> Be aware that as impressive as it may feel, the height may be a
> detriment in the higher HF (too long and radiation will be skyward,
> bound).

Not the height, but the length of the antenna is too tall for the higher HF bands for good low angle performance. IE: 10-12 meters. It will be ok 15m down.
This is probably what you meant...
MK

3770. Re: In the Fractal spirit.... Part II

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:46:04 UTC
From: "Wolfgang K. Meister" <no.mail@please.com>
Message-ID: <jli9kvo90ir0ktp4qpcntnstncd4aethog@4ax.com>
Source record: 110114
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

Lightspeed? Oh yes, you can show kids that they have 11 fingers!

First grade kid is best.

me:
lets count your fingers. You don't mind if we count up or down?
does it matter?

kid:
no

me:
grabbing one hand of the kid
'OK, let's start. (countings slowly) 10, 9, 8, 7, 6'
'you said, doesn't matter counting up or down?'

kid:
no, does n't matter

me:
ok, let's continue, where did we stop, yeah 6,
(grabbing other hand) hmmm, let's count up now!
(counting fast) 7,8,9,10, 11 - oops, you got 11 fingers?

...faster than speed of light!

73's de Wolfgang OE1MWW

3771. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:51:36 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <I741b.6700$B8.2478@newsread2.news.atl.earthlink.net>
Source record: 110115

Not braid for this application. Use solid copper #6 or larger. The
National Electrical Code specifies that all the grounds must be tied
together and how it should be done. There are many good reasons for this,
not the least of which deals with the effects of lightning. If you live in
an area where thunderstorms occur, you really need to look into the
grounding issue. Multiple isolated grounds can be far worse than none at
all! By the way, does that copper baseboard heating pipe really have a
continuous conducting path to earth ground?

K8AC

"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:nWSdnR1oWY4jkdmiXTWJiA@comcast.com...
>
> "Owen Duffy" <owen@oda.com.au> wrote in message
> news:3F4404C9.1000604@oda.com.au...
> > I urge you to check that you have an effective equipotential bond from
> > the shack equipment to the electrical installation earth.
> >
> > Owen
>
> Good advice - I guess I should check the outlet for proper
> installation then run a braid from the electrical ground to the
> copper pipe? My dad owns one of those nifty radio shack
> plug in outlet testers - I think I'll borrow it. :-)
>
> Jeez - lots of good advice on this group! Thanks again....
>
> 72's de Ken KG0WX
>
>

3772. RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:56:02 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <aMudneQWMajuUtmiXTWJkg@comcast.com>
Source record: 110117

Here I am again, probing your minds for advice:

I have 3 swr meters in my station - 1) my FT817, 2)
my MFJ 860 and 3) my Z11 autotuner

All equipment is grounded together then to a baseboard
copper heater pipe with 1/4" tinned copper braid. When
I transmit, I can touch any piece of equipment and none
of the meters show any change.

Antenna is a 36' unverted V without balun (for now), fed
with 12' of rg8x coax. Apex @27', ends @ 6'. Antenna
resonates perfectly @ 10.220 mhz. (It shoud'nt - it's way
too short for that freq)

Here's the issue:

Sometimes my Z11, the last component before the ant.
will indicate a <1.5:1 match after tuning while both the MFJ
tuner and the FT817 indicate a 2:1 swr. A minor tweak
of the Z11 produces a flat match indication on all equipment.
Sometimes the Z11 will show a 2:1 swr while the other
two meters will agree with a flat match. In any case, the
MFJ swr bridge and the FT-817 *always* agree with each
other.

I'm guessing that because I don't have a balun (I'm planning
on buying a 1:1 Van Gordon balun next month), RF is traveling
down the feedline to the Z11 and throwing the match
indication off.

Is this correct? The problem only happens on certain bands:
(I started testing @ 5 mhz & stopped @ 30mhz)

8.000 mhz 20.000 mhz
15.000 mhz 21.000 mhz
17.000 mhz 23.000 mhz
18.000 mhz 26.000 mhz
19.000 mhz 27.000 mhz

Thanks for any advice ya'll can give me.

72's de Ken KG0WX

3773. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 13:56:13 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308210556.34f9c171@posting.google.com>
Source record: 110116

aokd5fxt@aol.com (AO KD5FXT) wrote in message
news:<20030821061923.07473.00000175@mb-m25.aol.com>...
> My 706 has worked great for 2 or 3 years, however, my mkiiG has some problems.
> 1) my ssb power is only 30 watts on 20-160 meters. (AM power and rtty Power is
> ok)

A friend of mine has one that dropped power. Was a loose solder
connection. But forgot exactly where...I'd have to ask him.

> 2) SWR and Power Meters seem to be reversed on 20-160 meters.
> I use an external tuner to verify this.
> 3) 440 does not seem to receive.
> 4) Local service people (Avvid) does not work on the G model

Hummm. I thought Cliff worked on those....Guess not. My friend took
his over to Houston amateur supply or whatever they call it. Spring
TX. "George is the tech" He seemed to be able to fix it..

> 5) Guess it will have to go back to Icom for alignment at $75 / hour

That would be my first choice. Probably costs more, but I like the
idea of the factory working on it. "Mods updates, overall tech
quality, etc.."
I've got a 706mk2g, but no real problems so far after 2.5 years or so,
and that radio is on 24/7 nearly. It's my main casual listening radio.
I've got it on AM-740 right now as I type. :/ MK

3774. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 14:21:36 UTC
From: richardharrison@webtv.net
Message-ID: <12760-3F44D570-7@storefull-2317.public.lawson.webtv.net>
Source record: 110019

Abdullah Eyles wrote:
"The antenna has been assembled, but the elements were not placed as in the photo (see pdf."

I can`t see a pdf, but from the ASCII diagram, the antenna is similar to log periodic antennas Kraus shous in "Antennas", 3rd edition, on page 397. Borrow a copy and read all about it.

Best regards, Richard Harrison, KB5WZI

3775. Re: 2 meter / 440 antenna for sale ***NEW***

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 14:42:59 UTC
From: Dave Bushong <dbushong@adelphia.net>
Message-ID: <TT41b.5330$Nc.3375558@news1.news.adelphia.net>
Source record: 110118

Hmmm..... maybe not so funny :(

Try http://puremail.ironcanucks.com/PureMail.htm

Mea culpa, 73,
Dave

W7TI wrote:

> On Wed, 20 Aug 2003 01:00:57 GMT, Dave Bushong <dbushong@adelphia.net>
> wrote:
>
>
>>No, that's when replies will start being ignored, even if they have the
>>magic key in Subj line. See www.puremail.com
>>
>> [...]
> --
>
> I went to that website and it said: "Puremail is comming soon." and
> that's all. Now *that's* funny. :-)
>

--
This file is PureMail protected. To reply to the sender,
you MUST include this in the subject line:

M321I58DNU 09/06/2003

(without that string in the subject, your
message will be deleted, unread)

3776. Re: In the Fractal spirit...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 15:20:18 UTC
From: oily bird <nospamterd5kello@yahoo.com>
Message-ID: <1061479513.694140@newshost03.voicenet.com>
Source record: 110020
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.misc,alt.usenet.kooks

"k4wge" <k4wge@arrl.net> wrote in message
news:7b671b4e.0308200408.4e226ea6@posting.google.com...
> The World's first Superluminal Radio Transmitter!
>
> http://www.radio-faster-than-light.com/

This was mentioned on Coast to Coast AM?
More BS for geeks and kooks.

Here's a much more nifty site:
http://www.angola.npaid.org/minelist_all_database.htm

Everyhing you always wanted to know about land mines.

3777. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:03:33 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F44ED55.D1C4A0BD@uci.edu>
Source record: 110021

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >
> >>It happens all the time in optics and no optics engineer
> >>would be silly enough to assert that the bright ring energy is trapped
> >>and circulating between the dark rings.
> >
> >
> > Nor would he be silly enough to assert that energy first goes to the
> > dark ring and then turns around and goes to bright ring.
>
> Energy cannot reverse its momentum without reversing its momentum. If
> no other bright rings exist, then it must reverse its momentum.

He wouldn't be silly enough to say that, either. :-)

ac6xg

3778. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:16:53 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308210816.1ac8e8d@posting.google.com>
Source record: 110022

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308210101.5489abf2@posting.google.com>...
...
> A bit angry aren't we? Typical of one who has absolutely lost an
> argument...

Angry? Perhaps you are (the other part of the "we"), but I'm not.
Disappointed in you that you are unwilling to think for yourself and
go through the simple calculations. Understand what Ian wrote: there
IS no argument!

Cheers,
Tom

3779. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:24:36 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308210824.75b688bf@posting.google.com>
Source record: 110023

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308210048.9e4060@posting.google.com>...

> When you can show us your free energy device, we would love to see it!

What free energy device? _I've_ never made any such claims. I don't
recall that Roy, Ian, Reg, George, or even Bill S has made such
claims. I didn't notice that King, Mimno and Wing made such claims,
nor Henry Duckworth, nor... You get the idea?

When you can show me your steps getting from the simple TEM line
equations to Vr/Vf, I'd love to see them. You don't have to be an
expert or authority to do that. It's just simple highschool algebra.

Cheers,
Tom

3780. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:25:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u8s9kv88dvlnk1ihhphk68b46tli63fun6@4ax.com>
Source record: 110024

On 21 Aug 2003 00:37:42 -0700, agulesin@hotmail.com (Abdullah Eyles) wrote:

>
>This is what I think, but how can I explain to our managers, who got
>the lab set up by a contractor, that they (the 'experts') assembled
>the antenna wrongly? what are the possible effects on the measurements
>to be made?
>

Hi Abdullah,

Ask them for a refund, and drop them from your vendors list.

What effect did it have? Sorry to say this, but it sounds like you are going to spend far more money doing it yourself than if you had simply farmed out the job to a real lab that was registered with the FCC.

73's
Richard Clark, KB7QHC

3781. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:30:08 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308210830.2183d25f@posting.google.com>
Source record: 110025

kd1@sympatico.ca wrote in message news:<3F449F91.253174C1@sympatico.ca>...
> Please think carefully about your reply.
>

I always do, unless i hafta take a dump! hehe..

> Energy = Force x Distance
>
> When I push the block in a square pattern, the distance is the sum of
> the sides of the square.
>
> When I push the block in a circle, the distance is the circumference,
> which is 2 x pi x Radius.
>
> If, after reviewing the above, you still think the radius needs
> squaring, please explain why the equation for energy when pushing
> in a circle is different than that for pushing in a square.
>
> As an exercise, consider pushing in a triangle pattern, a square
> pattern, pentagon, hexagon, heptagon, octagon, ...
>
> Each pattern above is getting closer and closer to being a circle;
> at which pattern does the equation for Energy change from being
> the distance moved to being twice the enclosed area?
>
> ...Keith
>

It looks like you are correct. Sorry for the mistake, it's been
too
long since i've done a torque problem! I'm more of a EE!

Look at this page:

http://www.sinclair.net/~ddavis/170_ps10.html

If you agree that torque is in units of N*m, then according to this
page, you have to multiply this by the angular displacement, which
will be 2*pi for a full revolution. I was incorrectly trying to
multiple by the actual circumference traveled, which is incorrect
because we want angular displacement instead.

To me, this kinda shows how torque is closer to work than just
force, because with torque, you just need to and the angular
displacement (dimensionless) to get the work done.

Thanks for the review, Keith.

Slick

3782. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:33:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f44f5ba_3@corp.newsgroups.com>
Source record: 110027

Richard Clark wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>
>>Richard Clark wrote:
>>>And you have yet to confirm it (or refute it) at the bench. Is your
>>>interest more rhetorical than actual?
>>
>>Actually, I confirmed it in my back yard some 15 years ago.
>>It wasn't rocket science.

> I see you haven't got a clue what I wrote. Never mind.

On the contrary, my bench was located in my back yard in Queen
Creek, AZ at the time - during the dry season, of course.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3783. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:35:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f44f62a_3@corp.newsgroups.com>
Source record: 110028

kd1@sympatico.ca wrote:

> Ahhhhh, finally. The not unexpected descent into non-sequitors.
>
> Much safer than actually thinking about questions which might cause
> you to change your world view.

Actually, my Mother just died and her funeral is on Saturday - so angels
are on my mind at the moment. Please forgive my mental lapse. It may
happen to you someday.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3784. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:37:21 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308210837.5b25a91d@posting.google.com>
Source record: 110026

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<12761-3F44C04C-3@storefull-2317.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "And if the permittivity (impedance) of the material surrounding an
> antenna will affect its input impedance, I think it is something to
> consider."
>
> The permittivity surrounding our antennas rarely changes and is the same
> for nearly all antennas.
>
> My dictionary says of permittivity: "See Dielectric Constant".
>
> Velocity can be affected by dielectric constant as is seen in
> solid-dielectric coax. Fortunately, the dielectric constant of the
> environment our antennas operate in is nearly constant.
>
> Were matching antennas to 377 ohms significant, it would manifest itself
> in the century of experience of using many antennas of many differing
> types.
>
> Best regards, Richard Harrison, KB5WZI

I agree with you that almost all antennas are surrounded by air or
something very close to free-space (outer-space).

Many have agreed with me that a water-proof antenna emmersed in
water will change in it's input impedance, because of a different
dielectric constant.

I'm not sure how many antennas are designed for underwater use,
but it doesn't matter for the sake of arguing that the antenna
"matches" to the impedance of the material that surrounds it.

Slick

3785. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:39:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f44f711_3@corp.newsgroups.com>
Source record: 110030

Jim Kelley wrote:

> W5DXP wrote:
>>Energy cannot reverse its momentum without reversing its momentum. If
>>no other bright rings exist, then it must reverse its momentum.
>
> He wouldn't be silly enough to say that, either. :-)

Because he probably wouldn't even bother speaking to someone
who necessitated such an obvious statement. He would probably
just call the guys in the white coats. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3786. Re: RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:43:08 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F44F69C.80D4AF91@cwis.net>
Source record: 110029

Ken,
Only suggestion is to save your money, don't buy
a balun. Wind a choke at the feed point out of the
coaxial feed line. It'll work fine, last a long time,
you'll still have some money in your pocket.
'Doc

3787. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:44:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f44f870_3@corp.newsgroups.com>
Source record: 110032

Reg Edwards wrote:
> INSERTION LOSS due to an electrical network is the additional loss
> dissipated in a load when the network is inserted between a generator and
> its load. It may actually be a gain.

Well Reg, speaking of loads, given all the possible definitions,
does that apply when one (not you) shoves the network up one's
posterior? :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3788. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:48:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <obt9kvsddqcdscmkfvkrp3kdgvqq7gjeo4@4ax.com>
Source record: 110031

On Thu, 21 Aug 2003 06:31:45 -0400, kd1@sympatico.ca wrote:

>
>As an exercise, consider pushing in a triangle pattern, a square
>pattern, pentagon, hexagon, heptagon, octagon, ...
>
>Each pattern above is getting closer and closer to being a circle;
>at which pattern does the equation for Energy change from being
>the distance moved to being twice the enclosed area?
>
>...Keith
>

Hi All,

Just what purpose do the two of you think you are achieving with
Torque and boxing the compass?

73's
Richard Clark, KB7QHC

3789. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:56:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <r5u9kv02ie2m30o7rjdtpcvc9gesg2cse5@4ax.com>
Source record: 110033

On Thu, 21 Aug 2003 11:33:21 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>
>>>Richard Clark wrote:
>>>>And you have yet to confirm it (or refute it) at the bench. Is your
>>>>interest more rhetorical than actual?
>>>
>>>Actually, I confirmed it in my back yard some 15 years ago.
>>>It wasn't rocket science.
>
>> I see you haven't got a clue what I wrote. Never mind.
>
>On the contrary, my bench was located in my back yard in Queen
>Creek, AZ at the time - during the dry season, of course.

Hi Cecil,

Even more remote from the discussion. Will we be regaled about the
splinters in the bench next? So many here that are becoming
data-phobic have got to be related to the approach of Mars.

73's
Richard Clark, KB7QHC

3790. Re: RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 16:59:47 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <V-acnePnJcEZZ9miU-KYgg@comcast.com>
Source record: 110034

"'Doc" <w5lz@cwis.net> wrote in message news:3F44F69C.80D4AF91@cwis.net...
> Ken,
> Only suggestion is to save your money, don't buy
> a balun. Wind a choke at the feed point out of the
> coaxial feed line. It'll work fine, last a long time,
> you'll still have some money in your pocket.
> 'Doc

It's amazing the things one forgets in life......

Why didn't I think of that???

If I remember right, about 6-8 4" dia turns should do it....

Right?

Ken kg0wx

3791. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 17:10:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f44fe70_7@corp.newsgroups.com>
Source record: 110035

Richard Clark wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>On the contrary, my bench was located in my back yard in Queen
>>Creek, AZ at the time - during the dry season, of course.
>
> Even more remote from the discussion. Will we be regaled about the
> splinters in the bench next?

May I remind you, Richard, that it was you who brought up the subject of bench testing (as if testing cannot be done without a bench). I merely responded to your requirement for a bench. My bench was a card table in my back yard. That's exactly where I did my variable length transmission line testing - in my back yard in Queen Creek, AZ on a pleasant spring or fall day (I forget which). It wasn't boiling and it wasn't freezing so it must have been spring or fall. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3792. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 17:19:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f45008b_7@corp.newsgroups.com>
Source record: 110037

kd1@sympatico.ca wrote:
> Ahhhhh, finally. The not unexpected descent into non-sequitors.
>
> Much safer than actually thinking about questions which might cause
> you to change your world view.

Oh, and allow me to add: Like my EE prof at Texas A&M in the 50's, I consider instantaneous power to be a completely useless concept, fully appropriately related to how many angels can dance on the head of a pin. After all, how much power can traverse a point in zero time?
Hint: energy per delta-t if t=0 is zero!

I will never forget my prof's words: "Instantaneous power is about as useful as tits on a boar hog." But I have an open mind - please convince me that you are more brilliant than the head of the EE department at Texas A&M.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3793. how rf leave the antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 17:23:47 UTC
From: george_micheal987@yahoo.com
Message-ID: <91472d9c.0308210923.5a450b85@posting.google.com>
Source record: 110036

If an rf source is applied at the A end of the length of wire from A to B, the wave will travel along the wire until it reaches the B end. Since the B end is free, an open circuit exists and the wave cannot travel . This is a point of high impedance. Then the wave back (reflects) from this point of high impedance and travels toward the starting point, where it is again reflected. The energy of the wave would be gradually dissipated by the resistance of the wire of this back-and-forth motion (oscillation);

rf source A .____wire____.B

So how rf leave the antenna ???!!!!!!

in practical we use this configration :

---------- Antenna
rf source (transmmiter) ----|
---------- dummy load

Thanks

3794. Re: Re-Normalizing the Smith Chart (Changing the SWR intothesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 17:26:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <osv9kvohl2g6t1l4l45kbegd2lmlh56jds@4ax.com>
Source record: 110038

On Thu, 21 Aug 2003 12:10:27 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>On the contrary, my bench was located in my back yard in Queen
>>>Creek, AZ at the time - during the dry season, of course.
>>
>> Even more remote from the discussion. Will we be regaled about the
>> splinters in the bench next?
>
>May I remind you, Richard, that it was you who brought up the subject
>of bench testing (as if testing cannot be done without a bench). I
>merely responded to your requirement for a bench. My bench was a card
>table in my back yard. That's exactly where I did my variable length
>transmission line testing - in my back yard in Queen Creek, AZ on
>a pleasant spring or fall day (I forget which). It wasn't boiling
>and it wasn't freezing so it must have been spring or fall. :-)

Hi Cecil,

Yes, it was me, and you drew on the less than full context of that
message to wander into these aimless amblings.

Notice you've done it again by focusing on the bench and clipping off
the mention of being data-phobic. You continue to evidence that
choice in avoiding the technical with your response here.

This is certainly not your fault, when it shows such a high rate among
the correspondents here.

Perhaps this forum should be re-named rec.radio.ouija.antenna.

73's
Richard Clark, KB7QHC

3795. Re: how rf leave the antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 17:28:25 UTC
From: Ham Dat Am <HDA@pork.com>
Message-ID: <Zi71b.9979$S_.5869@fed1read01>
Source record: 110039

Best look at URL:
http://www.people.fas.harvard.edu/~thayes/15c/antenarticle_EDN.pdf

"dado" <george_micheal987@yahoo.com> wrote in message
news:91472d9c.0308210923.5a450b85@posting.google.com...
> If an rf source is applied at the A end of the length of wire from A
> to B, the wave will travel along the wire until it reaches the B end.
> Since the B end is free, an open circuit exists and the wave cannot
> travel . This is a point of high impedance. Then the wave back
> (reflects) from this point of high impedance and travels toward the
> starting point, where it is again reflected. The energy of the wave
> would be gradually dissipated by the resistance of the wire of this
> back-and-forth motion (oscillation);
>
>
> rf source A .____wire____.B
>
>
> So how rf leave the antenna ???!!!!!!
>
> in practical we use this configration :
>
>
> ---------- Antenna
> rf source (transmmiter) ----|
> ---------- dummy load
>
> Thanks

3796. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 17:44:44 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308210944.5f6bd3b8@posting.google.com>
Source record: 110040

ac6la@arrl.net (Dan) wrote in message
news:<960228f1.0308210110.7e7f49ed@posting.google.com>...
> It is my opinion that the confusion over whether to use Zo or Zo*
> (conjugate of Zo) in the computation for reflection coefficient arises
> because there are two different meanings for the reflection
> coefficient itself: one applies to voltage or current waves and the
> other applies to "power waves." I do not have the Besser text
> mentioned above but a 1965 IEEE paper by Kurokawa also uses the Zo*
> term to calculate the reflection coefficient. However, Kurokawa makes
> it clear that he is referring to "power waves" and not voltage or
> current waves.
>

Whether you find the reflection with Vr/Vi, or (Pr/Pi)**0.5, the
impedances should still be the same.

> The Kurokawa paper was given as the justification for what I believe
> is an erroneous equation in the 19th edition of the ARRL Antenna Book.
> In all previous editions (at least the ones that I have) the formula
> for reflection coefficient uses the normal Zo term. In the 19th
> edition the formula was changed to use the Zo* (Zo conjugate) term.
>

My 1993 70th ed. of the ARRL handbook assumes the Zo to be always
purely real.

I believe the Zo* version is correct. The purely real Zo version
is correct too, but Zo must be purely real.

>
> An -infinitely- long line will have zero reflections (|rho|=0). If a
> line of -finite- length is terminated with a load ZL which is exactly
> equal to the Zo of the line, the situation will not change, there
> should still be zero reflections. So if the formula for rho is
> rho = (ZL-Zo)/(ZL+Zo)
> then |rho| = 0, since the numerator evaluates to 0+j0.
> However, if the formula is
> rho = (ZL-Zo*)/(ZL+Zo)
> then |rho| evaluates to something other than 0, since the
> numerator evaluates to 0-j2Xo.
>
> To use an example with real numbers: RG-174, Ro=50, VF=.66, Freq=3.75
> MHz, matched line loss = 1.511 dB/100 ft (at 3.75 MHz), which yields a
> calculated Zo (at this Freq) of Zo=50-j2.396. If ZL = Zo = 50-j2.396,
> then:
> |rho(Zo)| = 0 [classic formula, Zo in the numerator]

> and
> |rho(Zo*)| = 0.0479 ["conjugate" formula, Zo* in the numerator]
>
> Using SWR=(1+|rho|) / (1-|rho|), these two rho magnitude values
> evaluate to SWR 1:1 and SWR 1.10:1, respectively. So if a line is
> terminated with a load equal to Zo, which is equivalent to an infinite
> line, the "conjugate" formula results in a rho magnitude greater than
> 0 and an SWR greater than 1. This doesn't seem to make intuitive
> sense.
>

I think i does make sense in the sense that if the source
(reference) and the load both have reactance, that there WILL be some
reflections.

If ZL=Zo*=50+j2.396, then the capacitive reactance is indeed
canceled, and you are matching a pure 50 ohms to a pure 50 ohms again,
and the numerator will be zero, as it should be.

This is what impedance matching is all about really, not just
getting the real part of the imedance the same, but cancelling any
reactance.

The conjugate formula is correct.

> This same anomaly may be extended to loads of other than Zo and to
> points other than just the load end of the line. Using the Zo for
> RG-174 as stated above (Zo=50-j2.396), and an arbitrary but totally
> realistic load of ZL=100+j0 ohms (nominal 2:1 SWR), I used the full
> hyperbolic transmission line equation to calculate what the Zin would
> be at points along the line working back from the load from 0ï¿½ to 360ï¿½
> (one complete wavelength) in 15ï¿½ steps. I then calculated the
> magnitude of both rho(Zo) [classic formula] and rho(Zo*) [conjugate
> formula] using the Zin values, and plotted the results. Here's the
> plot:
> http://www.qsl.net/ac6la/adhoc/Rho_Classic_Conjugate.gif
>
> (The scale for rho is on the right. The left scale is normally used
> for R, X, and |Z|, but those plot lines have been intentionally hidden
> in this case just to reduce the chart clutter.) Note that the plot
> line for rho(Zo) [classic formula] progresses downward in a smooth
> fashion as the line length increases, as expected.

This would be due to the losses of the line?

The rho(Zo*)
> [conjugate formula] swings around, and even goes above the value at
> the load point until a line length of about 75ï¿½ is reached. Again,
> this doesn't seem to make intuitive sense, and I can think of no
> physical explanation which would result in the voltage reflection
> coefficient magnitude "swinging around" as the line length is
> increased.

>

I'm not totally sure if you did this right, but if the
transforming transmission line had reactance in it, and you are
measuring everthing from
Zo=50-j2.396, then i would expect the rho to swing up and down the
same way every 1/2 wavelength, as your data shows.

>
> A further example of the importance of making a distinction between
> the voltage reflection coefficient and the power reflection
> coefficient would be the following: Assume a load of ZL=1+j1000 with
> the RG-174 Zo from above, Zo=50-j2.396. Then
>
> |rho| = 1.0047 (voltage wave reflection coefficient)
>
> and
>
> |rho'| = 0.9999 (power wave reflection coefficient)
>

If you had used the conjugate Zo* formula, you get

[rho] = 0.99989 which matches the bottom result.

I stand by the Conjugate formula, even more now.

Slick

3797. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 17:54:33 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F450759.C6C2182A@uci.edu>
Source record: 110041

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>Energy cannot reverse its momentum without reversing its momentum. If
> >>no other bright rings exist, then it must reverse its momentum.
> >
> > He wouldn't be silly enough to say that, either. :-)
>
> Because he probably wouldn't even bother speaking to someone
> who necessitated such an obvious statement. He would probably
> just call the guys in the white coats. :-)

Sorry your mom died.

73, ac6xg

3798. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 18:16:21 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vka33ikimuhifc@corp.supernews.com>
Source record: 110042

A big deal is being made of the general assumption that Z0 is real.

As anyone who has studied transmission lines in any depth knows, Z0 is, in general, complex. It's given simply as

Z0 = Sqrt((R + jwL)/(G + jwC))

where R, L, G, and C are series resistance, inductance, shunt conductance, and capacitance per unit length respectively, and w is the radian frequency, omega = 2*pi*f. This formula can be found in virtually any text on transmission lines, and a glance at the formula shows that Z0 is, in general, complex.

It turns out that R is a function of frequency because of changing skin depth, but it increases only as the square root of frequency. jwL, the inductive reactance per unit length, however, increases in direct proportion to frequency. So as frequency gets higher, jwL gets larger more rapidly. For typical transmission lines at HF and above, jwL >> R, so R + jwL ~ jwL. G represents the loss in the dielectric, and again for typical cables, it's a negligibly small amount up to at least the upper UHF range. Furthermore, G, initially very small, tends to increase in direct proportion to frequency for good dielectrics like the ones used for transmission line insulation. So the ratio of jwC to G stays fairly constant, is remains very large, at just about all frequencies. The approximation that jwC >> G is therefore valid, so G + jwC ~ jwC.

Putting the simplified approximations into the complete formula, we get

Z0 ~ Sqrt(jwL/jwC) = Sqrt(L/C)

This is a familiar formula for transmission line characteristic impedance, and results in a purely real Z0. But it's very important to realize and not forget that it's an approximation. For ordinary applications at HF and above, it's adequately accurate.

Having a purely real Z0 simplifies a lot of the math involving transmission lines. To give just a couple of examples, you'll find that the net power flowing in a transmission line is equal to the "forward power" minus the "reverse power" only if you assume a real Z0. Otherwise, there are Vf*Ir and Vr*If terms that have to be included in the equation. Another is that the same load that gives mininum reflection also absorbs the most power; this is true only if Z0 is assumed purely real. So it's common for authors to derive this approximation early in the book or transmission line section of the book, then use it for further calculations. Many, of course, do not, so in those texts you can find the full consequences of the complex nature of Z0. One very ready reference that gives full equations is _Reference

Data for Radio Engineers_, but many good texts do a full analysis.

Quite a number of the things we "know" about transmission lines are actually true only if the assumption is made that Z0 is purely real; that is, they're only approximately true, and only at HF and above with decent cable. Among them are the three I've already mentioned, the simplified formula for Z0, the relationship between power components, and the optimum load impedance. Yet another is that the magnitude of the reflection coefficient is always <= 1. As people mainly concerned with RF issues, we have the luxury of being able to use the simplifying approximation without usually introducing significant errors. But whenever we deal with formulas or situations that have to apply outside this range, we have to remember that it's just an approximation and apply the full analysis instead.

Tom, Ian, Bill, and most of the others posting on this thread of course know all this very well. We have to know it in order to do our jobs effectively, and all of us have studied and understood the derivation and basis for Z0 calculation. But I hope it'll be of value to some of the readers who might be misled by statements that "authorities" claim that Z0 is purely real.

Roy Lewallen, W7EL

3799. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 18:24:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vka3j2sqm7trcc@corp.supernews.com>
Source record: 110043

One more thing. I've never seen that conjugate formula for voltage reflection coefficient and can't imagine how it might have been derived. I've got a pretty good collection of texts, and none of them show such a thing. If anyone has a reference that shows that formula and its derivation from fundamental principles, I'd love to see it, and discover how the author managed to get from the same fundamental principles as everyone else but ended up with a different formula.

Roy Lewallen, W7EL

3800. #14, stranded

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 18:34:27 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <3F4510B3.B43BC6FB@agilent.com>
Source record: 110044

Hi, Everybody,

No. 14 stranded copper dulls and oxidizes badly after a couple of years up in the air.

Does this have any effect on the RF resistance?

Thank you and regards,

Al W6LX

3801. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 18:39:59 UTC
From: kuzen001@duke.edu
Message-ID: <bi33lv$e40$1@gargoyle.oit.duke.edu>
Source record: 110045
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

In rec.radio.amateur.equipment Martin <marty123@optonline.net> wrote:
> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.

I got one a couple of months ago--they've dropped the price
and I couldn't resist. I got it really to work 6 meters but
wound up putting it in the car instead. I am REALLY impressed
with it. The DSP/auto-noise-reduction stuff seems to work
remarkably well (I've never had it before so I'm not a very
serious judge, though.) The menu system is pretty easy to use
even in the car, and the memories are darned nice--they store
power level among other parameters, so I can switch between the
local repeater and low power, and 70 watts on 20 meters, just with
the flip of the knob. VERY nice. I've only owned 4 HF rigs in my
entire 14 years as a ham, so I'm not very experienced with rigs
in general. But I've been DELIGHTED with the 706 MkIIG. If I
ever get bored with HF mobile I'll probably bring it inside for
my main SSB rig and use my FT-840 for PSK and CW. Feel free to
email me if you have any specific questions .. GOOD LUCK!

____
Ken Kuzenski AC4RD kuzen001 at acpub .duke .edu
____
All disclaimers apply, see? www.duke.edu/~kuzen001

3802. Re: The two sorts of loss

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 18:41:23 UTC
From: tdonaly@aol.com
Message-ID: <20030821144123.29705.00000215@mb-m21.aol.com>
Source record: 110046

```
>
>Reg Edwards wrote:
>> INSERTION LOSS due to an electrical network is the additional loss
>> dissipated in a load when the network is inserted between a generator and
>> its load. It may actually be a gain.
>
>Well Reg, speaking of loads, given all the possible definitions,
>does that apply when one (not you) shoves the network up one's
>posterior? :-)
>--
>73, Cecil http://www.qsl.net/w5dxp
>

Does Reg's rhetoric imply a network suppository may produce
gain? I think medical science should be informed of this.
73,
Tom Donaly, KA6RUH
```

3803. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 18:46:49 UTC
From: tdonaly@aol.com
Message-ID: <20030821144649.29705.00000217@mb-m21.aol.com>
Source record: 110047

>
>Hi All,
>
>Just what purpose do the two of you think you are achieving with
>Torque and boxing the compass?
>
>73's
>Richard Clark, KB7QHC

Circle squarers are ten times worse than flat-earthers,
turtles or not.
73,
Tom Donaly, KA6RUH

3804. Re: RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 18:49:49 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <_VKdnc2TwJrTidiiXTWJhw@comcast.com>
Source record: 110048

"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:V-acnePnJcEZZ9miU-KYgg@comcast.com...
>
> "'Doc" <w5lz@cwis.net> wrote in message news:3F44F69C.80D4AF91@cwis.net...
> > Ken,
> > Only suggestion is to save your money, don't buy
> > a balun. Wind a choke at the feed point out of the
> > coaxial feed line. It'll work fine, last a long time,
> > you'll still have some money in your pocket.
> > 'Doc
>
> It's amazing the things one forgets in life......
>
> Why didn't I think of that???
>
> If I remember right, about 6-8 4" dia turns should do it....
>
> Right?
>
> Ken kg0wx
>
>

For the record I wrapped 6 turns of rg-8x in a 2-5/8"
diameter loop - I used a round glue bottle as a form,
applying superglue to the coax then drying it with
baking soda (cures superglue on contact).

I ended up with a real nice looking coil......

I also lengthened my antenna to 26'7" per leg (that
was all the spare wire I had on hand). The antenna
now resonates at 8 mhz exactly.

Question - if I trim the antenna for resonance on 40m,
will I loose efficiancy on 60m? I think yes but I could
be wrong - nobody's perfect.....

Except maybe Cecil...... ;-)

72's de Ken KG0WX

3805. Re: how rf leave the antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 19:17:22 UTC
From: richardharrison@webtv.net
Message-ID: <8346-3F451AC2-263@storefull-2313.public.lawson.webtv.net>
Source record: 110052

George Micheal wrote:
"So how rf leave the antenna?"

The end-fed wire antenna is a circuit completed by capacitance to ground and its return to the transmitter.

In a good antenna system, only a small percentage of the total r-f is lost in wire, ground, feedline, etc. Nearly all is radiated.

A current-carrying wire is surrounded by magnetic lines of force as exhibited by solenoid magnets, motors, etc.

An electrically charged item radiates an electric force field as exhibited by an Ace comb`s attraction for bits of paper under the right conditions.

A varying magnetic field can induce an electrical potential in a wire. It happens in common electrical generators. Likewise a varying electric field can alternatly attract and repel electrons, thereby producing an slectric current capability.

R-F circulating in the antenna wire produces alternating magnetic (H)-fields and electric (E)-fields around the wire.

The question is what impels these fields to travel to much greater distances than static fields travel. J. C. Maxwell speculated that displacement current of the sort that flows through the dielectric of a capacitor is surrounded by magnetic flux the same as current through a wire is. He was right.

Displacement current requires no electron flow. Note that we have vacuum capacitors where the space between the plates is completely void.

Displacement current makes the radio wave self-perpetuating. An H-field out in space creates an E-field by generating a "potential difference" which produces a "displacement current" which in turn generates a "potential difference" as represented by the E-field, which generates a "displacement current" as represented by the H-field.

This back and forth energy swap between E&H fields just goes on and on.

Best regards, Richard Harrison, KB5WZI

3806. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 19:20:57 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <CI2dnQgr04IChtiiXTWJjA@comcast.com>
Source record: 110049

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308190919.75c67313@posting.google.com...
> You mean change the coax from point 1-2? that wouldn't be the same
> as changing the PAs output impedance and the impedance of the SWR
> meter1.
>
>
> Slick

This is what I did: Icom756 > Coax1 > Kenwood SW2000 > Coax2 > Drake Dummy load. Frequency = 14.25

With Coax1 being 50 Ohm coax (LMR240), the SWR was 1:1.

I then changed coax1 to precisely 1/4 wavelength of 75 Ohm RG59. Clearly the loading changed because the transmitter was now seeing 112 Ohms. When I adjusted the 756 for the same calibration voltage on the SW2000, the SWR was still 1:1.

Next I used a T connector and paralleled 2 dummy loads. The Icom did not like that, and reduced power from my initial 30W to about 22W. The Kenwood should have read 2:1, but instead read 1.7:1 *for both the 50 Ohm and 75 Ohm coax1*
Is this what you are talking about?

Tam/WB2TT

3807. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 19:28:06 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <LJydnXtsnu_RgNiiU-KYvA@comcast.com>
Source record: 110050

I am not going to go around in circles on this. The now obsolete Motorola RF manual is still a good source for the real world. As for the noise figure, it is a well known fact that best NF and maximum gain do not coincide.

Tam/WB2TT
"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308190941.5bd48bd6@posting.google.com...
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<hDqdnct-JaxmA9yiU-KYvg@comcast.com>...
> > "Dr. Slick" <radio913@aol.com> wrote in message
> > news:1d15af91.0308181844.79528c1e@posting.google.com...
> > > tdonaly@aol.com (Tdonaly) wrote in message
> > news:<20030818164814.06584.00000162@mb-m28.aol.com>...
> > > Zo doesn't have to be the coax impedance. It can be any impedance
> > > you want. What about interstage-matching networks between FETs? Do
> > > you think there are no reflections there? Should you attempt to match
> > > impedances there? I would think so.
> >
> > You transform the input impedance of the driven stage to the optimum
load of
> > the driving stage. Whether that results in a conjugate match is
completely
> > immaterial. Trust me, I have done it .
> >
>
>
> Oh really? Did you use MIMP? or ADS? How did you design your
> interstage matching network? what did you start off with? How do you
> know a conjugate match didn't matter? What transistors did you use?
> Can you show us the data sheets?
>
> Can you show us your design notes please?
>
>
>
> > As for the Zo thing, you are trying to misapply the formula.
> >
> > BTW, the one place where you would think conjugate matching should
always
> > apply, antenna to receiver input, does not (always). Lowest noise figure
> > often occurs at SWRs around 1.5
> >
> > Tam/WB2TT
>

>
> Nope. Zo can be anything you want, especially interstage where
> you usually don't have/need a 50 ohm transmission line.
>
> Who told you about the lowest NF at a 1.5 SWR? Can you give us a
> link?
>
> Why would reflected power at the receive end benefit NF?
>
>
> Slick

3808. Re: #14, stranded

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 19:31:42 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vka7gppd3fjjf7@corp.supernews.com>
Source record: 110051

No significant amount. Certainly not enough to measurably reduce the
efficiency of an antenna, with the possible exception of an antenna with
extremely large currents, like a small loop or possibly a close-spaced W8JK.

Roy Lewallen, W7EL

Al Lorona wrote:
> Hi, Everybody,
>
> No. 14 stranded copper dulls and oxidizes badly after a couple of years
> up in the air.
>
> Does this have any effect on the RF resistance?
>
> Thank you and regards,
>
> Al W6LX

3809. Re: A Subtle Detail of Reflection Coefficients (but important to k...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 20:07:35 UTC
From: richardharrison@webtv.net
Message-ID: <14221-3F452687-90@storefull-2315.public.lawson.webtv.net>
Source record: 110054

Roy Lewallen wrote:
"A big deal is being made of the general assumption that Zo is real."

On page 88 of Terman`s 1955 opus he says:
"The electrical properties of the transmission lines enter into the equations of the line through the characteristic impedance Zo and the propagation constant sq,rt. ZY as defined by Egs. (4-5) and (4-7). At radio frequencies it is nearly always possible to assume that 2 pi f L>>R, and

2 pi f C>>G. To the extent that this is true, one can rewrite Eqs. (4-5) and (4-7) as follows.

Zo = sq.rt. L/C

Alpha + R/2Zo + GZo/2

Beta _ (2 pi f) sq.rt. LC

Nearly always is good enough for me in most cases, and Zo is real.

Best regards, Richard Harrison, KB5WZI

3810. Re: skin effect

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 20:09:12 UTC
From: atkes@general2.asu.edu
Message-ID: <bi38t8$s5p$1@news.asu.edu>
Source record: 110053

Roy Lewallen <w7el@eznec.com> wrote:
: As it happens, you've caught me right in the midst of trying to program
: just that calculation. But it turns out to be a toughie. It involves a
: couple of Bessel functions -- which aren't a problem in themselves, but
: the problem is that when the tube diameter is >>> the skin depth, the
: formulas I've come across so far require subtracting two huge numbers of
: limited accuracy (even if the wall itself isn't particularly thick in
: terms of skin depth). So the results I've gotten so far, even with
: double precision math, are garbage. I've been working at reducing and
: rearranging the equations, and using asymptotic approximations, but so
: far no joy.

: Anyway, I believe the phenomenon you mention. I've come across it a
: couple of places. A similar thing happens with the plating of wires,
: where a relatively poorly conductive plating of the right thickness
: actually improves the RF conductivity of the wire. The effect,
: unfortunately, is quite small, as for the case of wall thickness.

: Roy Lewallen, W7EL

: Reg Edwards wrote:
:> Take an ordinary round solid conductor. For well known reasons at
:> alternating currents it will have a higher resistance per unit length that
:> at DC.
:>
:> Now, if a round hole is drilled down the centre of the conductor, ie., its
:> highly-conductive center is removed, the AC resistance will be REDUCED.
:> There are, of course, better ways of producing tubes.
:>
:> The effect is at a maximum when the wall thickness of the tube is about 1.6
:> times skin depth in the material, ie., when an appreciable fraction of the
:> current flows on the internal surface. The reduction in resistance is only a
:> few percent and for a conductor of given dimensions it affects only the
:> lower frequencies.
:>
:> It has something to do with internal inductance and the relative phases of
:> the inside and outside surface currents.
:>
:> It is likely the effect is considered only when transmission line efficiency
:> is of overriding importance, perhaps at power frequencies, the 'hole' in the
:> conductor's center being occupied by a steel tensile strength member.
:>
:> My one and only reference book is Robert Chipman's "Theory and Problems of
:> Transmission Lines", 1968, McGraw Hill, where the effect is described in a
:> little more graphical detail than above. But the likelihood of obtaining a

:> copy of this book is remote
:> ----
:> Reg, G4FGQ

The calculation of the skin effect current in a pipe is straightforward
but has a few numerical problems as Roy noticed. Please note that I have
not checked my results carefully. To get a handle on the problem it
is simplest to analyze something like a coaxial cable with a perfectly
conducting outer conductor and a hollow inner conductor made of a good
conductor like copper. You can then show that the outer conductor does
not change the current distribution measurably. Further since you know
the fields in coaxial cable pretty well it is easy to identify good
approximations.

Perfect coax is a waveguide operating in the transverse electromagnetic (TEM)
mode. With imperfect conductors, there must be an electric field along
the conductors to drive the current from Ohm's law J = sigma E. Therefore
this can no longer be a transverse electromagnetic mode since E is no
longer transverse. The current however is still just in the direction of
the axis, so the magnetic field will still be transverse and the mode
with imperfect conductors is transverse magnetic. The usual waveguide
simplifications can be made. The fields for a wave propagating in the
z direction have an e^{i k z} dependence (I assume e^{- i w t} time
dependence; substitute i=-j everywhere if you prefer e^{j w t} time
dependence). Everything can be calculated in terms of E_z the z component
of the electric field. In particular in SI units it satisfies a Helmholtz
equation,
1/rho d/drho rho d E_z/drho + gamma^2 E_z = 0,
where gamma^2 = mu epsilon w^2 -k^2 and the magnetic field is
H_phi = i epsilon/gamma^2 dE_z/drho.
E_z and H_phi must be continous at the inner conductor boundaries, while
E_z = 0 on the perfect conductor and is well behaved at the origin.
As Roy says the solutions of the Helmholtz equation are combinations of
two Bessel functions in each region. Matching the boundary conditions
then finds the coefficients and the appropriate value of k, and the
solution is complete.

Now let's make some approximations. Since we know the mode is close
to the TEM mode we know that in the vacuum regions, gamma^2 must be
very nearly zero since it would be exactly zero for the TEM mode. In
the conductor epsilon has an imaginary part proportional to sigma/w,
which gives a term enormously bigger than the k^2 term or the real
part. Therefore, we find that the k^2 terms can be dropped from the
calculation. Once that is done, the outer conductor no longer plays a
part in the solution, and we no longer have to consider it.

Look at solution in the interior of the inner pipe. Normally it would be
proportional to the Bessel function J_0(gamma rho), but we saw that gamma
in vacuum for a near TEM mode is very close to zero. J_0(x) goes like
1-x^2/2 for small x, so the electric field inside is nearly constant,
and the magnetic field is nearly zero. Matching boundary conditions at

the inner surface of the inner conductor therefore requires to a good approximation a nonzero E_z with a zero derivative. The current density is simply J = sigma E_z, so the form of the current inside the pipe is
J(rho) = A J_0[(1-i) rho/delta] + B N_0[(1-i) rho/delta]
where J_0 and N_0 are the Bessel and Neuman functions (N_0 is also written Y_0 sometimes) and delta is the skin depth. The coefficients A and B must be chosen so that the rho derivative is zero on the inside of the pipe, and the integral of J gives the total current desired. The power loss is then the integral of |J|^2/2*sigma.

As Roy noticed, for a reasonable size inner conductor, rho is always an enormous number of skin depths so the arguments of the Bessel functions are large, and the Bessel functions have large exponentially growing parts so that it can be numerically difficult to calculate the coefficients A and B. It is therefore best to use the large argument asymptotic expressions:
J_0(x) = sqrt(2/pi x) cos(x-pi/4)
N_0(x) = sqrt(2/pi x) sin(x-pi/4)
and isolate the divergent part. However, in the usual case, we can ignore the curvature of the pipe to a good approximation. That is, if the pipe is many skin depths thick, the result will be the same as a solid pipe, which is B=0. If on the other hand it is only a few skin depths thick, then rho will change very little across the pipe, and we can replace the rho in the square root with the value at the outer radius. In that case, it is easy to satisfy the boundary conditions and the result is approximately:
J(rho) = I [(1-i)/(2 pi b delta)]
[cosh((rho-a)(1-i)/delta)/sinh((b-a)*(1-i)/delta)]
where b and a are the outer and inner radii of the conductor.
The total current is 2*pi*b int_a^b drho J(rho) = I by construction.
Calculating the effective resistance from the power loss gives:

R_effective = R_infinity *(sinh(2*t)+sin(2*t))/(cosh(2*t)-cos(2*t))

where R_infinity is the resistance for a solid pipe, and t is the pipe thickness in skin depths = (b-a)/delta,
R_infinity = 1/(2*pi*sigma*delta*b). The minimum is at t=pi/2 which is approximately 1.6 skin depths as Reg mentioned. It takes the value R_infinity*tanh(pi/2) or about 0.92*R_infinity. For t>3, the difference between the pipe and the solid wire is less than a half a percent.

I would be pleased to hear from Reg if the plot of the equation above agrees with that in his reference.

73 Kevin w9cf@ptolemy.la.asu.edu

3811. Re: A Subtle Detail of Reflection Coefficients (but important to k...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 20:41:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkabitg6dsiof1@corp.supernews.com>
Source record: 110055

Thanks, Richard. It's always a comfort when Terman agrees with me. I'll be glad to furnish a dozen or so other references to anyone who's interested.

Roy Lewallen, W7EL

Richard Harrison wrote:
> Roy Lewallen wrote:
> "A big deal is being made of the general assumption that Zo is real."
>
> On page 88 of Terman`s 1955 opus he says:
> "The electrical properties of the transmission lines enter into the
> equations of the line through the characteristic impedance Zo and the
> propagation constant sq,rt. ZY as defined by Egs. (4-5) and (4-7). At
> radio frequencies it is nearly always possible to assume that 2 pi f
> L>>R, and
>
> 2 pi f C>>G. To the extent that this is true, one can rewrite Eqs. (4-5)
> and (4-7) as follows.
>
> Zo = sq.rt. L/C
>
> Alpha + R/2Zo + GZo/2
>
> Beta _ (2 pi f) sq.rt. LC
>
> Nearly always is good enough for me in most cases, and Zo is real.
>
> Best regards, Richard Harrison, KB5WZI
>

3812. Re: Inverted Vee Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 21:19:37 UTC
From: Matthew and Wendy Plante <mapwam@frontiernet.net>
Message-ID: <JHa1b.102646$RY2.47561@news02.roc.ny>
Source record: 110056

OK, I miss spoke. I want to have one dipole running north south, and the other dipole of the same frequency running east west. I will be using coax and a balun. will this set up work?
Matthew
KC2KEI

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.512 / Virus Database: 309 - Release Date: 8/19/2003

3813. Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 21:20:21 UTC
From: Matthew and Wendy Plante <mapwam@frontiernet.net>
Message-ID: <pla1b.102647$6_2.72018@news02.roc.ny>
Source record: 110057

Is there a significant difference in gain between and inverted Vee and a horizontal dipole antenna?

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.512 / Virus Database: 309 - Release Date: 8/19/2003

3814. HFpack Shootout 2003 Pacificon

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 21:23:18 UTC
From: expeditionradio@aol.com
Message-ID: <20030821172318.02681.00000433@mb-m23.aol.com>
Source record: 110058

===HFpack Events 18 OCT 2003 at Pacificon===
HFpack. The HF Portable Group.
http://www.hfpack.com

HFpack Pedestrian Shootout 2003
HFpack Portable HF Forum
HFpack Snack 'n Drink Session
HFpack Zombie Walk 'n Talk Session

Pacificon 2003 Convention in San Ramon California USA
Friday 17 Oct through Sunday 19 October

HFpackers from all over the world will converge at the annual HFpack events in California. The HFpack Pedestrian Shootout 2003 is different this year, and includes measurements of complete Pedestrian Mobile backpack systems. The new rules will be announced soon. The HFpack Portable HF Forum is a powerpoint presentation and live demo of state-of-the-art portable systems by HFpackers. The HFpack Snack 'n Drink gives everyone a chance to relax and talk together. The HFpack Zombie Walk 'n Talk is a casual evening /PM session with portable gear outside in the beautiful California environment.

See Map and information on HFpack's Website.
http://www.hfpack.com
The HFpack talk-in and intercom frequencies are:
18157.5kHz USB and 144.320 MHz FM Simplex (PL 100)

Saturday 18 October 2003
11:30AM to 2:00PM HFpack Pedestrian Shootout 2003
Location: San Ramon Central Park, Bollinger Canyon Road
Pack a lunch. Bring your best Pedestrian Mobile pack.
Frequencies: 5371.5kHz USB, 14342.5kHz USB.

Saturday 18 October 2003
3:45PM to 4:45PM HFpack Portable HF Forum
Location: San Ramon Marriott, Forum Room "Salon G"
Powerpoint presentation by KQ6XA. Live Demos by HFpackers.

Saturday 18 October 2003
5:30PM HFpack Snack 'n Drink
Location: Pasta Pomodoro restaurant, 146 Sunset Drive,
next to Marriott Hotel
Gather with fellow HFpackers around the patio tables.

Saturday 18 October 2003
8:45PM HFpack Zombie Walk 'n Talk

Location: San Ramon Marriott hotel front lawn.
Frequencies: 5371.5 USB, 7242.5 LSB, 3997.5 LSB

3815. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 22:04:59 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkagfg88bthga3@corp.supernews.com>
Source record: 110059

Roy Lewallen wrote:
> A big deal is being made of the general assumption that Z0 is real.
>
> As anyone who has studied transmission lines in any depth knows, Z0 is,
> in general, complex. It's given simply as
>
> Z0 = Sqrt((R + jwL)/(G + jwC))
>
> where R, L, G, and C are series resistance, inductance, shunt
> conductance, and capacitance per unit length respectively, and w is the
> radian frequency, omega = 2*pi*f. This formula can be found in virtually
> any text on transmission lines, and a glance at the formula shows that
> Z0 is, in general, complex.

A good approximation to Z0 is:

Z0 = R0 sqrt(1-ja/b)

where Ro = sqrt(L/C)
a is matched loss in nepers per meter.
b is propagation constant in radians per meter.

The complex value of Z0 gives improved accuracy in
calculations of input impedance and losses of
coax lines. With Mathcad the complex value is
easily calculated and applied to the various
complex hyperbolic formulas.

Reference: QEX, August 1996

Bill W0IYH

3816. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 22:08:15 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkagmdf2sk825@corp.supernews.com>
Source record: 110060

Yes and no. Gain is a single number, so it's a poor and inadequate description for the three-dimensional pattern of an antenna.

An inverted vee has considerably higher gain off the end than a dipole, at most elevation angles of interest for long distance communication.

Broadside, the pattern of an inverted vee is very much like the pattern of a dipole at a height equal to the height of the inverted vee 1/3 of the way from the center. Consider, for example, an inverted vee whose center is at 50 feet and ends at 20 feet. 1/3 of the way from the center is at 40 feet, so the pattern will look a lot like a dipole that's 40 feet high.

You can see just what the pattern of each antenna looks like in all directions by downloading and using the free EZNEC demo program from http://eznec.com. After installing, start the program, click Help, read the Getting Started section, and go through the Test Drive tutorial. It takes you through the design and analysis of a dipole and an inverted vee.

Look at the azimuth and elevation angles you'll be using for communication, and you'll easily see which one would be better and by how much.

Roy Lewallen, W7EL

Matthew and Wendy Plante wrote:
> Is there a significant difference in gain between and inverted Vee and a
> horizontal dipole antenna?
>
>
> ---
> Outgoing mail is certified Virus Free.
> Checked by AVG anti-virus system (http://www.grisoft.com).
> Version: 6.0.512 / Virus Database: 309 - Release Date: 8/19/2003
>
>

3817. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 22:48:53 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308211448.51e4ef16@posting.google.com>
Source record: 110061

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308201047.7dff6029@posting.google.com>...
> Actually, my first posting was right all along, if Zo is always real.
>
> From Les Besser's Applied RF Techniques:
>
> "For passive circuits, 0<=[rho]<=1,
>
> And strictly speaking: Reflection Coefficient =
> (Zload-Zo*)/(Zload-Zo)
>
> Where * indicates
> conjugate.
>
> But most of the literature assumes that Zo is real, therefore
> Zo*=Zo."

Fascinating... Please have a look at the following reply I got from
Besser... I still wish people would go through the simple math
themselves, and make up their own minds what's correct and what isn't.
I gather that Slick has made up his own mind, though see no evidence
that it's on the basis of the simple calcs from what I believe he
already agrees with. Oh, well, not MY problem. (This is twice now,
recently, that I've followed up on other people's references and found
them to be at best questionable in some way.)

Cheers,
Tom

=-=-=-=-=-=-=-=-= Beginning of quoted material =-=-=-=-=-=-=-=-=-=-=-

Hello Tom-

Thank you for your message. I do not know which specific course was
referenced by the person you mentioned in your message, but I did
check
the notes for our more popular course which covers linear RF circuits.
In the manuals for that course, the formula is given as you described,
except that the Zo term in the numerator is _not_ the complex
conjugate.
Thus the formula in the manual reads:

Gamma = Vr/Vf = (Zl-Zo)/(Zl+Zo)

This is in agreement with Guillermo Gonzalez's text, "Microwave
Transistor Amplifiers," which is one of the references used in writing

the course.

Please let me know if this information addresses your concern.

Have a good day.

Regards,

Rex

From: [mailto:tom_bruhns@agilent.com]
Sent: Thursday, August 21, 2003 11:11 AM
To: info@besserassociates.com
Subject: Other concern/question

Below is the result of your feedback form. It was submitted by
(tom_bruhns@agilent.com) on Thursday, August 21, 2003 at 14:10:53

---

name: Tom Bruhns

body: I have recently seen someone attribute to Besser Associates
training a formula for reflection coefficient at a load Zl as Vr/Vf =
(Zl-Zo*)/(Zl+Zo), where Zo* is the complex conjugate of the line
characteristic impedance Zo. I'm curious if this is actually what you
teach, as it is counter to what is commonly in texts, and is also
counter to the commonly accepted boundary conditions on a TEM line at
such a load.

Yours in the interest of accurate models,
Tom Bruhns

...
Rex Frobenius
Engineering Director
Besser Associates
650-949-3300
650-949-4400 FAX
rfrobenius@besserassociates.com
www.besserassociates.com

=-=-=-=-=-=-=-=-= End of quoted material =-=-=-=-=-=-=-=-=-=-=-

3818. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 23:05:38 UTC
From: "Dan, danl, danny boy, Redbeard, actually Greybeard now" <danlx@execpc.com>
Message-ID: <b0kakv8l7mi5cbu74l63rs41mu1787pab1@4ax.com>
Source record: 110062

On 21 Aug 2003 10:19:23 GMT, aokd5fxt@aol.com (AO KD5FXT) sent into
the ether:

>My 706 has worked great for 2 or 3 years, however, my mkiiG has some problems.
>1) my ssb power is only 30 watts on 20-160 meters. (AM power and rtty Power is
>ok)
>2) SWR and Power Meters seem to be reversed on 20-160 meters.
>I use an external tuner to verify this.
>3) 440 does not seem to receive.
>4) Local service people (Avvid) does not work on the G model
>5) Guess it will have to go back to Icom for alignment at $75 / hour

Try the Icom reflector. It's a great group of people.

List-Subscribe: <http://mailman.qth.net/mailman/listinfo/icom>,
<mailto:icom-request@mailman.qth.net?subject=subscribe>
Dan, N9JBF
Amateur radio - What a hobby!
Remove left x for direct reply

3819. Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 23:14:33 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <kbqdnUpeoaQbz9iiU-KYgw@comcast.com>
Source record: 110063

What effect would a brick wall have on a HF antenna?
I'm talking 1-2" distance from the bricks, folks. The
wire used is 22 ga stranded insulated speaker wire.
Now no lectures about power - I run QRP. :-) The
station is well grounded to a copper baseboard heater
pipe and all components have short runs (12" or less)
of 1/4" braid line going to a common point. From there
it's 1/4" braid (26" long) to the pipe. I can touch any
part of the system while transmitting and see no change
in SWR.

I cut an inverted V 66'7" per leg 133'2" overall. It's fed
with 12' of rg8x coax with a 6 turn 2-5/8" dia coil at the
feedpoint. The apex of the antenna is roughly 25' up. The
ends of the antenna are at chest height. The antenna is bent
around the corner of my building 90 degrees (I'm in a
corner unit). The last 8' of each leg bends again 90 degrees.

The antenna resonates as follows:
============
2.130 2:1 swr
2.715 1:1 swr (flat)
3.620 2:1 swr
============
8.970 2:1 swr
9.210 1.8:1 swr
9.390 2:1 swr
============
12.230 2:1 swr
13.040 1.9:1 swr
13.850 2:1 swr
============
15.930 2:1 swr
============
20.970 2:1 swr
22.745 1.2:1 swr
24.520 2:1 swr
============

If I figure 468/133.1666666667 I get 3.514.393 mhz
for resonance How come the antenna is so far off?
Could it be the height? Not that I'm complaining - I
like the low resonance and my Z11 autotuner will take
this antenna down to 1.8 mhz real easy. Although at
that freq I expect the antenna will radiate a NVIS

signal due to low HAAT.

Any ideas???

72's de Ken KG0WX

3820. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 23:38:19 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <LJc1b.5707$sV.899@newsread1.news.atl.earthlink.net>
Source record: 110064

Roy:

[snip]
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vka3j2sqm7trcc@corp.supernews.com...
> One more thing. I've never seen that conjugate formula for voltage
> reflection coefficient and can't imagine how it might have been derived.
> I've got a pretty good collection of texts, and none of them show such a
> thing.
[snip]

You are absolutely correct Roy, that formula given by "Slick" is just plain
WRONG!

rho = (Z - R)/(Z + R)

Always has been, always will be.

Where does that "Slick" guy get his information? And where does "Slick" get
off with all of his "potifications"??? I dunno... *He* thinks "Besser",
"Pozar" and
ARRL are authoritative sources for transmission line technology!!!

Me?

I have made a living as a professional Engineer designing transmission
equipment over
the past four decades, currently more than $4BB gross shipped to world wide
markets,
where the Zo I used is neither real, nor a constant!

And what is more... I have never consulted any of those three authorities
referenced by
"Slick". I certainly don't think of them as being authoritative, "cream
skimmers"
perhaps, but not certainly not authoritative.

I believe that "Slick" has gotta stop "pontificating" and start reading in
better circles...
much better!

--
Peter K1PO
Indialantic By-the-Sea, FL.

3821. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 23:39:08 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkalvip9lccm46@corp.supernews.com>
Source record: 110065

William E. Sabin wrote:

> Roy Lewallen wrote:
>
>> A big deal is being made of the general assumption that Z0 is real.
>>
>> As anyone who has studied transmission lines in any depth knows, Z0
>> is, in general, complex. It's given simply as
>>
>> Z0 = Sqrt((R + jwL)/(G + jwC))
>>
>> where R, L, G, and C are series resistance, inductance, shunt
>> conductance, and capacitance per unit length respectively, and w is
>> the radian frequency, omega = 2*pi*f. This formula can be found in
>> virtually any text on transmission lines, and a glance at the formula
>> shows that Z0 is, in general, complex.
>
>
> A good approximation to Z0 is:
>
> Z0 = R0 sqrt(1-ja/b)
>
> where Ro = sqrt(L/C)
> a is matched loss in nepers per meter.
> b is propagation constant in radians per meter.
>
> The complex value of Z0 gives improved accuracy in calculations of
> input impedance and losses of coax lines. With Mathcad the complex value
> is easily calculated and applied to the various complex hyperbolic
> formulas.
>
> Reference: QEX, August 1996
>
> Bill W0IYH
>

The usage of complex conjugate Z0* becomes
significant when calculating very large values of
VSWR, according to some authors. But for these
very large values of standing waves, the concept
of VSWR is a useless numbers game anyway. For
values of VSWR less that 10:1 the complex Z0 is
plenty good enough for good quality coax.

W.C. Johnson points out on page 150 that the concept:

Pload = Pforward - Preflected

is strictly correct only when Z0 is pure resistance. But the calculations of real power into the coax and real power into the load are valid and the difference between the two is the real power loss in the coax. For these calculations the complex value Z0 for moderately lossy coax is useful and adequate.

The preoccupation with VSWR values is unfortunate and excruciatingly exact answers involve more nitpicking than is sensible.

Bill W0IYH

3822. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-21 23:58:09 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkan361fn2apdb@corp.supernews.com>
Source record: 110066

William E. Sabin wrote:

> Roy Lewallen wrote:
>
>> A big deal is being made of the general assumption that Z0 is real.
>>
>> As anyone who has studied transmission lines in any depth knows, Z0
>> is, in general, complex. It's given simply as
>>
>> Z0 = Sqrt((R + jwL)/(G + jwC))
>>
>> where R, L, G, and C are series resistance, inductance, shunt
>> conductance, and capacitance per unit length respectively, and w is
>> the radian frequency, omega = 2*pi*f. This formula can be found in
>> virtually any text on transmission lines, and a glance at the formula
>> shows that Z0 is, in general, complex.
>
>
> A good approximation to Z0 is:
>
> Z0 = R0 sqrt(1-ja/b)

Correction: Z0 = R0 (1-ja/b)

>
> where Ro = sqrt(L/C)
> a is matched loss in nepers per meter.
> b is propagation constant in radians per meter.
>
> The complex value of Z0 gives improved accuracy in calculations of
> input impedance and losses of coax lines. With Mathcad the complex value
> is easily calculated and applied to the various complex hyperbolic
> formulas.
>
> Reference: QEX, August 1996
>
> Bill W0IYH
>

3823. Antenna down tilt in pattern

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 00:01:29 UTC
From: antennas@yahoo.com
Message-ID: <e8be44e3.0308211601.668d319a@posting.google.com>
Source record: 110067

I was looking at a 2.4 GHz antenna that had 20 1/2 waves in phase.
Then there was the same antenna, almost, except it said it had a 3
degree downtilt to it. How would the antenna be made to give it this 3
degree downltilt? It stated it also had 20 1/2 waves to it also and
was same length overall.
Andrew VE8AE

3824. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 00:33:14 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi3oca$ej1$1@hercules.btinternet.com>
Source record: 110068

"Tom Bruhns" wrote
> "Reg Edwards" wrote
> > > >Magid has the most rigorous derivation of power and energy flow on
> > > >transmission lines,
> > ==========
> > The following short question is adressed to all contributors to this
> > newsgroup who feel impelled to bolster their lack of self-confidence by
> > dragging in the chapter and verse of their favourite worshipped authors
and
> > Gurus, most of whom nobody has ever heard of and highly unlikely ever to
get
> > their hands on.
> >
> > How do you know that?
==========

> Gee, Reg, since you took that out of context, it seems a bit unfair.
> Roy wrote it, and after the comma was, "I've seen." I don't know it,
> but I'm willing to take Roy at his word on the matter.
==========

The question asked was -

"How do you know that Magid has the most rigorous derivation of . . . . . .
".

Of what the derivation was was of no consequence. It was a matter of
judgement of Magid's (or anybody else's) qualifications and authority. What
was the purpose of referring to somebody hardly anybody has ever heard of?

Reg.

3825. Re: #14, stranded

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 00:36:21 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <3F456585.615ECAB7@agilent.com>
Source record: 109969

Roy Lewallen wrote:
>
> No significant amount.

Great! Thanks, Roy. I have always wondered about this, because it's not intuitive to me. Eventually, every single strand becomes oxidized over it's entire circumference and length, and that would seem to affect the RF conductivity at the surfaces, but apparently not nearly enough to worry about it.

This is good, because #14 stranded is my preferred wire. Paranoia had led me to use #14 solid enameled the last time I put up an antenna, but it's not as compliant, of course.

Thanks again,

Al W6LX

3826. Re: Antenna down tilt in pattern

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 00:57:54 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <eUd1b.219110$o%2.101278@sccrnsc02>
Source record: 109970

ARRL Antenna Handbook, 18th Edition, Chapter 17 page 2.

"Vertical-beam [antenna pattern] downtilt is generally produced by
feeding the elements of a collinear array slightly out of phase with
each other." [NOTE: Collinear not Yagi]

See "L. Barrett, "Repeater Antenna Beam Tilting", Ham Radio, May 1983,
pps 29-35. Correction issued Ham Radio, July 1983, p 80."

All of above from ARRL Antenna Handbook.

Deacon Dave, W1MCE
+ + +

VE8AE Andrew wrote:

> I was looking at a 2.4 GHz antenna that had 20 1/2 waves in phase.
> Then there was the same antenna, almost, except it said it had a 3
> degree downtilt to it. How would the antenna be made to give it this 3
> degree downltilt? It stated it also had 20 1/2 waves to it also and
> was same length overall.
> Andrew VE8AE

3827. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 01:27:08 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkasbd5uc59uc3@corp.supernews.com>
Source record: 109971

Gee, Reg, if all references had to be by someone you've heard of, we'd be pretty much restricted to Heaviside and Edwards.

The purpose was to let people know that there's a derivation which looks to me to be rigorous and which comes to an interesting conclusion -- the same conclusion I reached some time ago with my own analysis, in fact.

A valid analysis is a valid analysis regardless of who did it. But for anyone who is interested, Magid taught at M.I.T. and Brooklyn Polytechnic Institute. In the introduction, the author states:

"I wish to express my profound indebtedness and thanks to Professors Richard B. Adler, Lan Jen Chu, and Robert M. Fano of the Electrical Engineering Department of M.I.T., both for their continued support and encouragement in this project and for their and their present publisher's (The M.I.T. Press) permission to draw freely on many of their concepts, ideas, and even, in a few cases, some well-chosen words from their abovementioned textbooks. I owe a special debt of gratitude to Professor Chu for the innumerable hours that he unselfishly devoted to assisting me in organizing this book."

I know this is meaningless to you, Reg, since you undoubtedly haven't heard of any of those professors, either, let alone read any of their classic papers. Perhaps you haven't heard of M.I.T., either, or at least disdain it due to its location on the wrong side of the Atlantic. That's fine. Thankfully, good engineering will continue to get done without your approval. If you're interested only in analyses by people you've heard of, that's fine. It's obviously a very short list, so you'll be able to continue to reject just about anything out of hand.

Seeing something written certainly doesn't make it so. But seeing it in a text that's undergone considerable scrutiny by very knowledgeable people makes it worthy, to me, of careful consideration. Certainly it deserves a lot more respect than off-hand comments from people with little constructive or rational to offer. And certainly a lot more than conclusions stated with great fan-fare and authority but not backed up by any development or evidence.

Roy Lewallen, W7EL

Reg Edwards wrote:
>
> The question asked was -
>
> "How do you know that Magid has the most rigorous derivation of . . . . . .
> ".

>
> Of what the derivation was was of no consequence. It was a matter of
> judgement of Magid's (or anybody else's) qualifications and authority. What
> was the purpose of referring to somebody hardly anybody has ever heard of?
> ---
> Reg.
>
>

3828. Re: RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 01:28:52 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F4571D4.F85F21FD@cwis.net>
Source record: 109972

Ken,
With RG-8 size coax I'd make the diameter of the coils
larger than 2 - 4 inches. A small diameter can make the
center conductor migrate to the 'outside' of the coil and
eventually short out (may take awhile). Something like a
3 pound coffe can makes a good form for RG-8. If you have
to force the bend, the diameter is too small.
If you tune the antenna for 40 meters it won't work as
well on 60 meters. The difference may not be all that much
though. I'd make it resonant on whichever band I planned
to use the most, and then 'put up' with it's performance on
other bands.
Something else you might consider. Extend the antenna the
rest of the way around the building and make it into a loop.
That should give you 80 meters and maybe even 160 meters...
'Doc

3829. Re: Inverted Vee Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 01:31:07 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F45725B.9354762B@cwis.net>
Source record: 109973

Matthew,
Yes, basically the same antenna as before.
'Doc

3830. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 01:43:24 UTC
From: Rich <rk911@ANTISPAM.yahoo.com>
Message-ID: <v4takvojpdrslolgh4lo1q5sfis2h0hqb4@4ax.com>
Source record: 109974
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

On Wed, 20 Aug 2003 17:55:35 GMT, "Martin" <marty123@optonline.net>
wrote:

>I'd appreciate any comments, pro and con, from actual users of the
>IC-706MKIIG. Performance, reliability, service problems, etc.
>
>As it's described it seems to have features I'd like and need: small size,
>both HF and VHF, and a reasonable power level. Any suggestions as to other
>rigs with similar features would be appreciated also.
>
>Marty K1FHR
>
hi, marty. i've got a MKIIG in my camper and use it when
camping...not as often as i'd like. no problems with it at all. it
performs well. i guess the only "complaint' i'd have is trying to
remember all of the functions. but that's a problem with most moden
rigs.

73,
rich, n9dko

3831. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:05:52 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308211805.51ffab02@posting.google.com>
Source record: 109975

Roy Lewallen <w7el@eznec.com> wrote in message news:<vk5b5s6rit0c0a@corp.supernews.com>...
> W5DXP wrote:
> > Roy Lewallen wrote:
> >
> >> p(t) = v(t) * i(t). Period. No phase, no vectors, no cross products.
> >
> >
> > Millions of power engineers have been taught that V*I*cos(theta) is power.
> > Are you disagreeing with that teaching?
>
> Yes.

Yes, indeed. The power engineers who have to deal with electronic
power supply loads are quick to realize that sine waves aren't enough
for them. Things have changed in that regard since the 50's. It
became such a problem that there are now requirements for power factor
correction (or more accurately, for a maximum power factor, and
maximum harmonic content).

Cheers,
Tom

3832. Re: RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:12:08 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <1PKcnapz2-9k5tiiXTWJiw@comcast.com>
Source record: 109976

"'Doc" <w5lz@cwis.net> wrote in message news:3F4571D4.F85F21FD@cwis.net...
> Ken,
> With RG-8 size coax I'd make the diameter of the coils
> larger than 2 - 4 inches. A small diameter can make the
> center conductor migrate to the 'outside' of the coil and
> eventually short out (may take awhile). Something like a
> 3 pound coffe can makes a good form for RG-8. If you have
> to force the bend, the diameter is too small.
> If you tune the antenna for 40 meters it won't work as
> well on 60 meters. The difference may not be all that much
> though. I'd make it resonant on whichever band I planned
> to use the most, and then 'put up' with it's performance on
> other bands.
> Something else you might consider. Extend the antenna the
> rest of the way around the building and make it into a loop.
> That should give you 80 meters and maybe even 160 meters...
> 'Doc

Thanks for the good info, Doc!

I made the coil 2-5/8" in diameter after trying to make the coil
on a coffee can and had problems with the lip and ribs of the
can preventing me from removing the finished coil. BTW the
2-5/8" is measured from the center of the coax.

Later I went to rat shack and bought 50' of 2 conductor
speaker wire, cut 10 feet off then added the 40 foot pieces
to my inverted V. It now measures 133'2" long and resonates
at 2.715 mhz. my new little Z11 tuner can easily take it down
the rest of the way to 1.800. If I wanted to I could add more
wire and go completly around the building, ending up with
a 200' loop (guestimate)

For the first time in my ham life I've got a 160 meter cap-
able antenna! I'm looking forward to winter.....

As I'm writing this I'm listening to the 3905 Century Club
net on 40 meters. Man - net control and others are booming
in here!

Also, is conductor migration really an issue with solid
dielectric coax?

72's de Ken KG0WX

3833. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:17:48 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308211817.fa8f5bb@posting.google.com>
Source record: 109977

Roy Lewallen <w7el@eznec.com> wrote in message news:<vka33ikimuhifc@corp.supernews.com>...
>
> Quite a number of the things we "know" about transmission lines are
> actually true only if the assumption is made that Z0 is purely real;
> that is, they're only approximately true, and only at HF and above with
> decent cable. Among them are the three I've already mentioned, the
> simplified formula for Z0, the relationship between power components,
> and the optimum load impedance. Yet another is that the magnitude of the
> reflection coefficient is always <= 1.

That would be only into a passive network.

As people mainly concerned with
> RF issues, we have the luxury of being able to use the simplifying
> approximation without usually introducing significant errors. But
> whenever we deal with formulas or situations that have to apply outside
> this range, we have to remember that it's just an approximation and
> apply the full analysis instead.
>
> Tom, Ian, Bill, and most of the others posting on this thread of course
> know all this very well. We have to know it in order to do our jobs
> effectively, and all of us have studied and understood the derivation
> and basis for Z0 calculation. But I hope it'll be of value to some of
> the readers who might be misled by statements that "authorities" claim
> that Z0 is purely real.
>
> Roy Lewallen, W7EL

No one ever said that Zo is always purely real. But many texts do
approximate it this way. Even the ARRL "bible".

Slick

3834. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:22:03 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308211822.2740b335@posting.google.com>
Source record: 109978

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<LJydnXtsnu_RgNiiU-KYvA@comcast.com>...
> I am not going to go around in circles on this. The now obsolete Motorola RF
> manual is still a good source for the real world. As for the noise figure,
> it is a well known fact that best NF and maximum gain do not coincide.
>

That's what i thought. You've never designed anything in your life.

Slick

3835. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:25:56 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <Uaf1b.29366$Vx2.13299264@newssvr28.news.prodigy.com>
Source record: 109980
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Well, Martin, I use mine in my Semi truck, getting beat up by the Arkansas, Michigan, Pennsylvania, New Mexico, Arizona, and California roads all the time as I roll on delivering freight. It's never let me down once. One comment, though, if you plan on using it while rolling, the narrow SSB filter is almost a MUST. Makes listening through the "tire static" (yes, it really does exist. I have proof.) much easier.

73 de AI8W, Chris

Martin wrote:

> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>
> As it's described it seems to have features I'd like and need: small size,
> both HF and VHF, and a reasonable power level. Any suggestions as to other
> rigs with similar features would be appreciated also.
>
> Marty K1FHR
>
>

3836. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:26:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308211826.51ca9a4a@posting.google.com>
Source record: 109979

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308210824.75b688bf@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308210048.9e4060@posting.google.com>...
>
> > When you can show us your free energy device, we would love to see it!
>
> What free energy device? _I've_ never made any such claims. I don't
> recall that Roy, Ian, Reg, George, or even Bill S has made such
> claims. I didn't notice that King, Mimno and Wing made such claims,
> nor Henry Duckworth, nor... You get the idea?
>

If you claim the [rho] into a passive network can be greater than
one, indeed this would be a free energy device!

Slick

3837. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:27:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkavt1gqtvhg9c@corp.supernews.com>
Source record: 109981

Y'all gotta r'call things are taught kinda differnt in Texas. I never had a professor tell me that any concept was "useless as tits on a boar hog", as Cecil's professor told him about instantaneous power. And that admonition sure did stick with him, you might say like a fly on . . .

Roy Lewallen, W7EL

Tom Bruhns wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vk5b5s6rit0c0a@corp.supernews.com>...
>
>>W5DXP wrote:
>>
>>>Roy Lewallen wrote:
>>>
>>>
>>>>p(t) = v(t) * i(t). Period. No phase, no vectors, no cross products.
>>>
>>>
>>>Millions of power engineers have been taught that V*I*cos(theta) is power.
>>>Are you disagreeing with that teaching?
>>
>>Yes.
>
>
> Yes, indeed. The power engineers who have to deal with electronic
> power supply loads are quick to realize that sine waves aren't enough
> for them. Things have changed in that regard since the 50's. It
> became such a problem that there are now requirements for power factor
> correction (or more accurately, for a maximum power factor, and
> maximum harmonic content).
>
> Cheers,
> Tom

3838. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:30:32 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <cff1b.29369$Vx2.13300593@newssvr28.news.prodigy.com>
Source record: 109982

Roy:

Isn't that "Stank on...."? Or did we live in different parts of Texas?
::grin::

73 de AI8W, Chris

Roy Lewallen wrote:

> Y'all gotta r'call things are taught kinda differnt in Texas. I never
> had a professor tell me that any concept was "useless as tits on a boar
> hog", as Cecil's professor told him about instantaneous power. And that
> admonition sure did stick with him, you might say like a fly on . . .
>
> Roy Lewallen, W7EL
>
> Tom Bruhns wrote:
>
>> Roy Lewallen <w7el@eznec.com> wrote in message
>> news:<vk5b5s6rit0c0a@corp.supernews.com>...
>>
>>> W5DXP wrote:
>>>
>>>> Roy Lewallen wrote:
>>>>
>>>>
>>>>> p(t) = v(t) * i(t). Period. No phase, no vectors, no cross products.
>>>>
>>>>
>>>>
>>>> Millions of power engineers have been taught that V*I*cos(theta) is
>>>> power.
>>>> Are you disagreeing with that teaching?
>>>
>>>
>>> Yes.
>>
>>
>>
>> Yes, indeed. The power engineers who have to deal with electronic
>> power supply loads are quick to realize that sine waves aren't enough
>> for them. Things have changed in that regard since the 50's. It
>> became such a problem that there are now requirements for power factor
>> correction (or more accurately, for a maximum power factor, and
>> maximum harmonic content).

>>
>> Cheers,
>> Tom
>
>

3839. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:35:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <87uakvoe873taq1e44ksju892rltver3vh@4ax.com>
Source record: 109983

On Tue, 19 Aug 2003 14:47:58 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>I find this most interesting. As a P.E. licensed by the state of Oregon
>(since 1981), I'm aware that I'm subject to state laws governing the
>code of conduct of Professional Engineers, and all other applicable
>state laws. I didn't realize that I had legal obligations to NIST, or
>that any other federal agency has requirements for P.E.s of all states.
>Would you please provide some reference where I can further research
>this obligation and the rules it has imposed that I'm legally required
>to comply with?
>
>Roy Lewallen, W7EL, P.E.

Hi Roy,

"RCW 19.94.150
Standards recognized.
The system of weights and measures in customary use in the United
States and the metric system of weights and measures are jointly
recognized, and either one or both of these systems shall be used
for all commercial purposes in this state. The definitions of
basic units of weight and measure and weights and measures
equivalents, as published by the national institute of standards
and technology or any successor organization, are recognized and
shall govern weighing or measuring instruments or devices used in
commercial activities and other transactions involving weights and
measures within this state."

This is from the state of Washington, I will leave it to you to
research your own particular point of liability in Oregon.

I would add what the IEEE offers into the matter of observing
standards in the development of software and confirming your
disclaimers with:

"The Legal Standard of Professionalism"

"One curious fact from the legal perspective decries a serious
lack: there is no such thing as software malpractice. Why?
A peek into the legal mind provides a disturbing explanation.
There is insufficient evidence to show that programmers
know how to learn from each other, much less from the rest of
the world."

I, for one, could envision you having interest in both, but as I
stated before, I could not see you bothered with the first - seeing

that you have not volunteered any additional details of your trade
aside from software, that stands to good reason.

73's
Richard Clark, KB7QHC

3840. Re: 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:36:18 UTC
From: k9sqg@aol.com
Message-ID: <20030821223618.01725.00000320@mb-m22.aol.com>
Source record: 109984

Ideally the counterpoise should have 3-4 radials per band, sloping down at about a 30-45 deg angle.

3841. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:40:28 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkb0kssr0s4f01@corp.supernews.com>
Source record: 109985

I'd guess that a brick wall would lower the resonance somewhat (due to the brick's dielectric constant), but not introduce a significant amount of loss. But that's a guess.

What I'd do, of course, is model the antenna with EZNEC (the free demo program would be adequate). That would tell me where the antenna would be resonant without the brick wall. Any major deviation from that could be attributed to the brick wall. Of course, you'd have to include your coil in the model, including its loss if you want to determine the antenna loss, and the feedline to account for its impedance transformation and consequent effect on resonance. To determine the antenna loss I'd look at the bandwidth with EZNEC and compare it to the measured bandwidth -- if the real antenna is considerably broader, there's extra loss from somewhere that's not in the model.

If you don't think it's worth the effort to model, you might just try doubling the distance from the wall and remeasuring. I'm not sure that would be enough to really tell, but if the resonance changes noticeably, then the bricks are having an effect. And if the bandwidth decreases appreciably, then the bricks are contributing loss.

Roy Lewallen, W7EL

Ken Bessler wrote:
> What effect would a brick wall have on a HF antenna?
> I'm talking 1-2" distance from the bricks, folks. The
> wire used is 22 ga stranded insulated speaker wire.
> Now no lectures about power - I run QRP. :-) The
> station is well grounded to a copper baseboard heater
> pipe and all components have short runs (12" or less)
> of 1/4" braid line going to a common point. From there
> it's 1/4" braid (26" long) to the pipe. I can touch any
> part of the system while transmitting and see no change
> in SWR.
>
> I cut an inverted V 66'7" per leg 133'2" overall. It's fed
> with 12' of rg8x coax with a 6 turn 2-5/8" dia coil at the
> feedpoint. The apex of the antenna is roughly 25' up. The
> ends of the antenna are at chest height. The antenna is bent
> around the corner of my building 90 degrees (I'm in a
> corner unit). The last 8' of each leg bends again 90 degrees.
>
> The antenna resonates as follows:
> ============
> 2.130 2:1 swr

> 2.715 1:1 swr (flat)
> 3.620 2:1 swr
> ============
> 8.970 2:1 swr
> 9.210 1.8:1 swr
> 9.390 2:1 swr
> ============
> 12.230 2:1 swr
> 13.040 1.9:1 swr
> 13.850 2:1 swr
> ============
> 15.930 2:1 swr
> ============
> 20.970 2:1 swr
> 22.745 1.2:1 swr
> 24.520 2:1 swr
> ============
>
> If I figure 468/133.1666666667 I get 3.514.393 mhz
> for resonance How come the antenna is so far off?
> Could it be the height? Not that I'm complaining - I
> like the low resonance and my Z11 autotuner will take
> this antenna down to 1.8 mhz real easy. Although at
> that freq I expect the antenna will radiate a NVIS
> signal due to low HAAT.
>
> Any ideas???
>
> 72's de Ken KG0WX
>
>

3842. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 02:47:54 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi408qnjf1@titan.btinternet.com>
Source record: 109986

"Matthew and Wendy Plante" wrote -
> Is there a significant difference in gain between an
> inverted Vee and a horizontal dipole antenna?
>
==========

Gain is not an appropriate term to use in a performance comparison.

The power radiating efficiency of an inverted-vee is typically 3 to 5 decibels worse than a horizontal half-wave dipole at the same height as the apex of the vee. Less than an S-unit. This is due entirely to extra loss induced in the soil under the antenna, the average height of the wire in a vee being roughly half the height of the dipole.

The radiating pattern of a vee is very little different from a horizontal dipole at the same average height. It is a little more omni-directional which may be considered an advantage. But in practice the difference is not noticeable.

If you took both antennas up to a height of a wavelength above ground there would be no difference between the two.

Installation advice - keep the ends of the vee as high as possible above ground level.

To relate antenna-plus-feedline performance to all dimensions and ground conditions, download in a few seconds and run immediately, program INV_VEE from website below.

Dimensions and angles can be smoothly varied from the keyboard. Optimise performance on what will fit into your backyard.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

3843. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 03:03:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkb20eid1t2of0@corp.supernews.com>
Source record: 109987

Richard Clark wrote:
> On Tue, 19 Aug 2003 14:47:58 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
>
>
>>I find this most interesting. As a P.E. licensed by the state of Oregon
>>(since 1981), I'm aware that I'm subject to state laws governing the
>>code of conduct of Professional Engineers, and all other applicable
>>state laws. I didn't realize that I had legal obligations to NIST, or
>>that any other federal agency has requirements for P.E.s of all states.
>>Would you please provide some reference where I can further research
>>this obligation and the rules it has imposed that I'm legally required
>>to comply with?
>>
>>Roy Lewallen, W7EL, P.E.
>
>
> Hi Roy,
>
> "RCW 19.94.150
> Standards recognized.
> The system of weights and measures in customary use in the United
> States and the metric system of weights and measures are jointly
> recognized, and either one or both of these systems shall be used
> for all commercial purposes in this state. The definitions of
> basic units of weight and measure and weights and measures
> equivalents, as published by the national institute of standards
> and technology or any successor organization, are recognized and
> shall govern weighing or measuring instruments or devices used in
> commercial activities and other transactions involving weights and
> measures within this state."
>
> This is from the state of Washington, I will leave it to you to
> research your own particular point of liability in Oregon.

Wow, thanks for the heads-up. I'll be more careful to specify circuit board trace line widths in furlongs, and volumes of radar detection regions in bushels, those being duly recognized customary units of measure here in Oregon. I'll no longer use lakj;ofs and mapeurqak!pys, which I had previously been using.

> I would add what the IEEE offers into the matter of observing
> standards in the development of software and confirming your
> disclaimers with:
>

> "The Legal Standard of Professionalism"
>
> "One curious fact from the legal perspective decries a serious
> lack: there is no such thing as software malpractice. Why?
> A peek into the legal mind provides a disturbing explanation.
> There is insufficient evidence to show that programmers
> know how to learn from each other, much less from the rest of
> the world."
>
> I, for one, could envision you having interest in both, but as I
> stated before, I could not see you bothered with the first - seeing
> that you have not volunteered any additional details of your trade
> aside from software, that stands to good reason.

As I'm afraid so often happens with your postings, I haven't a clue what you're trying to say. It sounds vaguely like a complaint, but I can't for the life of me fathom what about, except that it seems to be some sort of objection to the legal disclaimers which accompany my software. Could you please try to rephrase it in a way that can be understood by an engineer with a sadly deficient liberal arts education?

If you feel that the legal disclaimers which accompany my software are unduly restrictive or otherwise too onerous for you, or you're not fully satisfied with EZNEC in any way, all you need do is so state in peasant-level plain language so I can understand it, and I'll promptly refund the full purchase price. Just as it says clearly in the EZNEC manual (Help/Contents/Introduction/Guarantee).

Roy Lewallen, W7EL

3844. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 03:25:17 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <fb2bkvgulm8s7f24k876mkjlmrev2ab34i@4ax.com>
Source record: 109988

On Thu, 21 Aug 2003 20:03:41 -0700, Roy Lewallen <w7el@eznec.com>
wrote:

>Richard Clark wrote:
>> On Tue, 19 Aug 2003 14:47:58 -0700, Roy Lewallen <w7el@eznec.com>
>> wrote:
>>
>>
>>>I find this most interesting. As a P.E. licensed by the state of Oregon
>>>(since 1981), I'm aware that I'm subject to state laws governing the
>>>code of conduct of Professional Engineers, and all other applicable
>>>state laws. I didn't realize that I had legal obligations to NIST, or
>>>that any other federal agency has requirements for P.E.s of all states.
>>>Would you please provide some reference where I can further research
>>>this obligation and the rules it has imposed that I'm legally required
>>>to comply with?
>>>
>>>Roy Lewallen, W7EL, P.E.
>>
>>
>> Hi Roy,
>>
>> "RCW 19.94.150
>> Standards recognized.
>> The system of weights and measures in customary use in the United
>> States and the metric system of weights and measures are jointly
>> recognized, and either one or both of these systems shall be used
>> for all commercial purposes in this state. The definitions of
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>> equivalents, as published by the national institute of standards
>> and technology or any successor organization, are recognized and
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>> commercial activities and other transactions involving weights and
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>> This is from the state of Washington, I will leave it to you to
>> research your own particular point of liability in Oregon.
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>Wow, thanks for the heads-up. I'll be more careful to specify circuit
>board trace line widths in furlongs, and volumes of radar detection
>regions in bushels, those being duly recognized customary units of
>measure here in Oregon. I'll no longer use lakj;ofs and mapeurqak!pys,
>which I had previously been using.

Uh-huh.

...
>Could you please try to rephrase it in a way that can be understood by
>an engineer with a sadly deficient liberal arts education?

Hi Roy,

Probably not.

73's
Richard Clark, KB7QHC

3845. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 03:41:22 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f459213_2@news1.prserv.net>
Source record: 109990

Ken:

I've not run HF measurements on bricks, but I can tell you that a brick wall is extremely lossy at 1 GHz and above, by measurement. Their water (dielectric constant = 80) content is relatively high unless recently baked and sealed, and depending on the particular clay they were fired from, they are somewhat conductive. So, placing your antenna close is like putting it next to a high dielectric RF absorber. Not a good choice.

--
Crazy George
Remove NO and SPAM from return address
"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:kbqdnUpeoaQbz9iiU-KYgw@comcast.com...
> What effect would a brick wall have on a HF antenna?
> I'm talking 1-2" distance from the bricks, folks. The
> wire used is 22 ga stranded insulated speaker wire.
> Now no lectures about power - I run QRP. :-) The
> station is well grounded to a copper baseboard heater
> pipe and all components have short runs (12" or less)
> of 1/4" braid line going to a common point. From there
> it's 1/4" braid (26" long) to the pipe. I can touch any
> part of the system while transmitting and see no change
> in SWR.
>
> I cut an inverted V 66'7" per leg 133'2" overall. It's fed
> with 12' of rg8x coax with a 6 turn 2-5/8" dia coil at the
> feedpoint. The apex of the antenna is roughly 25' up. The
> ends of the antenna are at chest height. The antenna is bent
> around the corner of my building 90 degrees (I'm in a
> corner unit). The last 8' of each leg bends again 90 degrees.
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> The antenna resonates as follows:
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> 2.130 2:1 swr
> 2.715 1:1 swr (flat)
> 3.620 2:1 swr
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> 8.970 2:1 swr
> 9.210 1.8:1 swr
> 9.390 2:1 swr
> ============
> 12.230 2:1 swr
> 13.040 1.9:1 swr
> 13.850 2:1 swr

> ============
> 15.930 2:1 swr
> ============
> 20.970 2:1 swr
> 22.745 1.2:1 swr
> 24.520 2:1 swr
> ============
>
> If I figure 468/133.1666666667 I get 3.514.393 mhz
> for resonance How come the antenna is so far off?
> Could it be the height? Not that I'm complaining - I
> like the low resonance and my Z11 autotuner will take
> this antenna down to 1.8 mhz real easy. Although at
> that freq I expect the antenna will radiate a NVIS
> signal due to low HAAT.
>
> Any ideas???
>
> 72's de Ken KG0WX
>
>

3846. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 03:41:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkb4844h52sgbf@corp.supernews.com>
Source record: 109989

Since this isn't true except under particular circumstances, I'd hate to see it become an unqualified rule of thumb. For example, here are some values for the total ground loss from an inverted vee and dipole, with the apex of the inverted vee the same as the height of the dipole. Modeling was done at 14 MHz over average ground.

Ht (ft) Inv Vee Dipole
12 5.77 2.05
20 2.08 1.18
30 1.47 1.18
40 1.65 1.4
45 1.72 1.39
50 1.63 1.27

As you can see, the difference is less than 1 dB except for the lowest height.

At an apex height of 12 feet, the ends of the inverted vee were about 2 inches off the ground, so that was as low as it could have been constructed with a 90 degree apex angle. Interestingly, the loss of the inverted vee reached a maximum at 45 feet. The dipole did likewise, at about 40 feet.

I mentioned that an "equivalent height" for a dipole is 1/3 of the way out from the center. This is based on the current distribution, and when a dipole is put at that height, it has about the same elevation pattern as the inverted vee. Putting a dipole at the "equivalent height" of the lowest inverted vee (i.e. 8 foot high dipole) shows 3.55 dB ground loss, still 2 dB greater than the inverted vee at 12 feet.

Scaling for 3.5 MHz shows 4.5 dB for an inverted vee with apex at 48 feet and ends about 9 inches above the ground, vs 1.35 dB for a dipole at 48 feet. So the difference is just slightly less than the corresponding antennas at 14 MHz.

My conclusion is that the rule holds only for antennas very close to the ground. But the actual difference will depend on the frequency and ground charactersitics as well as the inverted vee's apex angle.

Anyone wanting to compare particular antennas can easily do so with EZNEC. The free demo program is adequate. Simply specify Real, High Accuracy ground and a 3D plot. Make sure wire loss is zero and there are no lossy (resistive) loads in the model. Then run the 3D plot and look at the "average gain". It'll represent the total ground loss. For the values above, I used example files BYDipole.EZ and BYVee.EZ. In both models, I changed the ground type to Real, High Accuracy, the ground

description to Average (0.005 S/m conductivity, 13 dielectric constant),
and the plot type to 3D. Height was then changed as required using the
Change Height feature in the Wires Window.

Although this is academically interesting, I don't see any immediate
practical use for the information. It doesn't tell you how strong a
signal your antenna will produce in a given direction, which is usually
what you want to know.

Roy Lewallen, W7EL

Reg Edwards wrote:
> "Matthew and Wendy Plante" wrote -
>
>>Is there a significant difference in gain between an
>>inverted Vee and a horizontal dipole antenna?
>>
>
> ==========
>
> Gain is not an appropriate term to use in a performance comparison.
>
> The power radiating efficiency of an inverted-vee is typically 3 to 5
> decibels worse than a horizontal half-wave dipole at the same height as the
> apex of the vee. Less than an S-unit. This is due entirely to extra loss
> induced in the soil under the antenna, the average height of the wire in a
> vee being roughly half the height of the dipole.
> . . .

3847. Re: Supporting theory that Antennas "Match" to 377 Ohms (Free space)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 03:49:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkb4mgjhd3id7e@corp.supernews.com>
Source record: 109991

Richard Clark wrote:
> On Thu, 21 Aug 2003 20:03:41 -0700, Roy Lewallen <w7el@eznec.com>
> wrote:
> ...
>
>>Could you please try to rephrase it in a way that can be understood by
>>an engineer with a sadly deficient liberal arts education?
>
>
> Hi Roy,
>
> Probably not.
>
> 73's
> Richard Clark, KB7QHC

Surely, then, one of the more educated but earthy readers understood it and can translate for me. Anyone? Here it is again in case it was missed the first time:

----- Text to translate:

I would add what the IEEE offers into the matter of observing standards in the development of software and confirming your disclaimers with:

"The Legal Standard of Professionalism"

"One curious fact from the legal perspective decries a serious lack: there is no such thing as software malpractice. Why? A peek into the legal mind provides a disturbing explanation. There is insufficient evidence to show that programmers know how to learn from each other, much less from the rest of the world."

I, for one, could envision you having interest in both, but as I stated before, I could not see you bothered with the first - seeing that you have not volunteered any additional details of your trade aside from software, that stands to good reason.

What's the point? Can someone clue me in?

Roy Lewallen, W7EL

3848. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 03:53:40 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkb4u5hk3phnde@corp.supernews.com>
Source record: 109992

Hm, woops. My guess that they wouldn't be lossy was based on the assumption that they don't contain much water. In light of what George has said, I retract my guess. Putting your antenna close to anything containing water is bad news from a loss standpoint, as George says.

Roy Lewallen, W7EL

Crazy George wrote:
> Ken:
>
> I've not run HF measurements on bricks, but I can tell you that a brick wall
> is extremely lossy at 1 GHz and above, by measurement. Their water
> (dielectric constant = 80) content is relatively high unless recently baked
> and sealed, and depending on the particular clay they were fired from, they
> are somewhat conductive. So, placing your antenna close is like putting it
> next to a high dielectric RF absorber. Not a good choice.
>
> --
> Crazy George

3849. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 03:59:13 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi44eh$t0n$1@titan.btinternet.com>
Source record: 109993

Has it not yet occurred to you the impedance of the usual amateur's transmitter changes when the load impedance is changed?

In the present context this not only makes a mess of maximum-power theorems, conjugate matches, and referrals to renounced authors, it also reduces the years and gigabtres of 'learned' arguments on this newsgroup to nonsense.

However, it's been great entertainment. Long may it contiunue. ;o)

Reg, G4FGQ

3850. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 04:09:10 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <li5bkv42dr5dns3lqbkv5090lvlgt493vo@4ax.com>
Source record: 109994

On Fri, 22 Aug 2003 03:59:13 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Has it not yet occurred to you the impedance of the usual amateur's
>transmitter changes when the load impedance is changed?
>

Few seem willing to put a -um- a number to it. They could then
respond coyly "change from what?"

The assembled throng not only didn't give you quarter, they didn't
even give you ha' pence. ;-)

I share your amusement tho' and if I had a glass of wine, I would
click it to the monitor in front of me.

73's
Richard Clark, KB7QHC

3851. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 05:08:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi48gd$83l$1@hercules.btinternet.com>
Source record: 109995

```
>
> Few seem willing to put a -um- a number to it.
>
==========================

Rich, As a qualified engineer, and someone who has participated in futile
discussions, how would YOU obtain a number for it?

Such a number must exist.
```

3852. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 05:39:22 UTC
From: agulesin@hotmail.com
Message-ID: <62155ce7.0308212139.2fb48e49@posting.google.com>
Source record: 109996

"Crazy George" <munschNO@attglobal.net.SPAM> wrote in message
news:<3f4441be_1@news1.prserv.net>...
> Richard:
>
> Don't you consider it a little frightening that this is a guy setting up a
> lab to do EMC measurements, probably for EU certification, and asks a
> question like this?

OK Thanks George...

It would be worse if I didn't ask, wouldn't it????

I am learning these subjects newly, I am not the one responsible for
the lab, but I can see that something is wrong (or appears to be
wrong)...

3853. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 05:50:17 UTC
From: agulesin@hotmail.com
Message-ID: <62155ce7.0308212150.7a1d87@posting.google.com>
Source record: 109997

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<u8s9kv88dvlnk1ihhphk68b46tli63fun6@4ax.com>...
>
> Ask them for a refund, and drop them from your vendors list.
>
> What effect did it have? Sorry to say this, but it sounds like you
> are going to spend far more money doing it yourself than if you had
> simply farmed out the job to a real lab that was registered with the
> FCC.
>

Our company is *setting up* a lab that will provide an EMC testing service for other companies. We are in Turkey, so I don't think FCC covers here... (and it's not as easy as "drop them from your vendor list", there aren't that many companies or specialists that we can "pick and choose")

I wish someone would answer the question "what would the effect of this mistake be?" If there is no effect, then I'm wasting my (and your) time... Thanks!

3854. Re: 32 FT VERTICAL -- counterpoise length??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 05:53:59 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308212153.547d8ad0@posting.google.com>
Source record: 109998

k9sqg@aol.com (K9SQG) wrote in message
news:<20030821223618.01725.00000320@mb-m22.aol.com>...
> Ideally the counterpoise should have 3-4 radials per band, sloping down at
> about a 30-45 deg angle.

I guess would depend on what you would call ideal, and the freq and
height in wavelength of the antenna. 3 or 4 radials could range from
practically optimum, if at 1/2 wave, to fairly mediocre if the antenna
were for a low band, and the height in wavelength were much below a
1/4 wave. In doing casual testing on this, with pretty much exactly
the same setup, "32 ft whip and sloping radials,", once you drop to a
1/8 wave or lower, 3 or 4 radials is not so hot. Ask Cecil. He will
verify. :) I could easily run my mast up and down to test different
heights. But at 1/4 wave up, the performance starts to approach the
level you'd really expect. "about 50-60 radials worth, if compared to
ground mounted". I ran mine at 36 ft, with four sloping radials. At
that height in wl, 4 radials do pretty well. But I'd need about 8-10
to equal 120 on the ground at 1/4 wave up. The sad part about low
GP's, is as you get lower to the ground, the number of radials needed
jumps quickly by great amounts to keep the same performance. At 1/8
wave up, you need 50-60 radials to equal 4 at 1/2 wave up.
Thats a pretty good incentive to get the antenna as high as you can.
But of course, I'm talking about first rate, dx busting performance.
For lower modes of performance, this will not be as important. But
once you use a good one, you'll never go back. I still miss my 40m GP
late at night. It's laying on the side of my house...Not doing much
good there. It's like an energy free amplifier when working long haul
compared to my dipole at the same appx height. :/ MK

3855. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 06:00:47 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308212200.4d51b9ac@posting.google.com>
Source record: 109999
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

sideband <AINO8SPAMW@cac.net> wrote in message Makes listening through the
> "tire static" (yes, it really does exist. I have proof.) much easier.
>
> 73 de AI8W, Chris

Yes it does exist. I bet the greater bulk of the noise I get at road speeds is tire static. If I stop, even with the engine running, it's pretty quiet. But at highway speeds, my noise will jump up a good bit. I've heard of various cures, ranging from anti-static powder in the tires, to springs you insert in the wheel bearing caps to make a better electrical connection across the bearings I presume. I've never bothered trying any of them yet. I just turn on the NB... MK

3856. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 06:10:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qn9bkv4aapup59fb70qhcbv68vqr9pn71s@4ax.com>
Source record: 110000

On Fri, 22 Aug 2003 05:08:29 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>>
>> Few seem willing to put a -um- a number to it.
>>
>==========================
>
>Rich, As a qualified engineer, and someone who has participated in futile
>discussions, how would YOU obtain a number for it?
>
>Such a number must exist.
>

Shirley you jest,

Me, a qualified engineer? A futile one perhaps (another clown), but
none here would say qualified. I only do it for work when
prostituting myself with software designing dries up.

Directly or indirectly? Let me count the ways....

I've used a bridge (GR) where the rig was connected as the "unknown"
once (children, this should not be done at home). I keyed down and
made sure the excitation was disconnected (mama di'n't raise no fool).
The results are close at hand, but what the hey, no one here pays any
attention to data anyway. Seems to me with some 10-12A pouring
through the finals, that I came up with (normalized to 50):

Freq. 0Ohms 25Ohms 50Ohms 100Ohms TS430
10 0 0.49ï¿½j0 0.99ï¿½j0 1.96-j0.1 1.48-j1.18
14 0 0.49ï¿½j0 0.99ï¿½j0 1.96-j0.14 1.48+j0.56
18 0 0.49ï¿½j0 0.99ï¿½j0 1.94-j0.19 1.2-j0.11
21 0 0.49ï¿½j0 0.98ï¿½j0 1.94-j0.23 0.74-j0.19
25 0 0.49ï¿½j0 0.96ï¿½j0 1.94-j0.26 0.70-j0.14
28 0 0.49ï¿½j0 0.94ï¿½j0 1.88-j0.28 0.96+j0.56

I've done it by others' methods (enumerated by them here to similar
results as theirs). These results are certainly not as tight (a lot
of reactance) but it sure beats reporting splinters one has gotten
from bench work. ;-)

At first glance it would prove for this strained condition that, yes,
the characteristic Z of the port is NOT 50 Ohms. -Whew!- That was
easy to say. It also says what it WAS, which seems infinitely harder
for many to even speculate.

73's
Richard Clark, KB7QHC

3857. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 06:26:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <i1dbkvcdhakju3on4ldg6rjg9id28698c8@4ax.com>
Source record: 110001

On 21 Aug 2003 22:50:17 -0700, agulesin@hotmail.com (Abdullah Eyles)
wrote:

>Richard Clark <kb7qhc@comcast.net> wrote in message
news:<u8s9kv88dvlnk1ihhphk68b46tli63fun6@4ax.com>...
>>
>> Ask them for a refund, and drop them from your vendors list.
>>
>> What effect did it have? Sorry to say this, but it sounds like you
>> are going to spend far more money doing it yourself than if you had
>> simply farmed out the job to a real lab that was registered with the
>> FCC.
>>
>
>Our company is *setting up* a lab that will provide an EMC testing
>service for other companies. We are in Turkey, so I don't think FCC
>covers here... (and it's not as easy as "drop them from your vendor
>list", there aren't that many companies or specialists that we can
>"pick and choose")

Someone, I am sure, would deliver equal performance for less. How
much did the right answer cost here?

>
>I wish someone would answer the question "what would the effect of
>this mistake be?" If there is no effect, then I'm wasting my (and
>your) time... Thanks!

Hi Abdullah,

That's about the gist of it. Yes, you are wasting your time trying to
obtain that specific answer. For one, you haven't really offered any
data. What is there to answer for? A general yes or no would be
useless as a response.

You have no FCC. A point well taken. But you do have a Standards
Laboratory in Turkey. Consult:
Dr. Huseyin Ugur, Director of National Metrology Institute,
Kocaeli, Turkey
P.O. Box 21 41470 Gebze-Kocaeli Phone: +90 262 643 6093

I am sure they have a list of qualified vendors, and labs performing
your sort of work.

73's
Richard Clark, KB7QHC

3858. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 06:45:23 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308212245.2ecb8f7a@posting.google.com>
Source record: 110002

So another way for the lurkers to check all this: assume a line Zo = 50-j5, and a load Zload = 1+j100. Assume some convenient Vf at the load. Calculate rho = Vr/Vf from the equation quoted below. Now find Vr, and from the line impedance and Vf and Vr, find If and Ir. Add the V terms and I terms to get the net line voltage and current at the load. Does that correspond to the expected load current for the given Zload? If so, fine; if not, where does the difference in current come from? If you assume the line current is correct from your If and Ir calcs, and the load current is correct as the net line voltage = net load voltage, and use Zload to get Iload, does the line power dissipation plus the load power dissipation equal the power fed in from a generator? Try all those calcs after revising the Vr/Vf formula to match what Besser is now teaching, and see if things line up a bit better.

The truth is all there to be seen with just a bit of work.

Cheers,
Tom

(yeah, I've done it, as you might guess. And so have a lot of others.)

radio913@aol.com (Dr. Slick) wrote in message news:<1d15af91.0308201047.7dff6029@posting.google.com>...
> Actually, my first posting was right all along, if Zo is always real.
>
> From Les Besser's Applied RF Techniques:
>
> "For passive circuits, 0<=[rho]<=1,
>
> And strictly speaking: Reflection Coefficient =
> (Zload-Zo*)/(Zload-Zo)
>
> Where * indicates
> conjugate.
>
> But most of the literature assumes that Zo is real, therefore
> Zo*=Zo."
>
>
> And then i looked at the trusty ARRL handbook, 1993, page 16-2,
> and lo and behold, the reflection coefficient equation doesn't have a
> term for line reactance, so both this book and Pozar have indeed
> assumed that the Zo will be purely real.

>
> That doesn't mean Zload cannot have reactance (be complex).
>
> Try your calculation again, and you will see that you can never
> have a [rho] (magnitude of R.C.)greater than 1 for a passive network.
>
> How could you get more power reflected than what you put in (do
> you believe in conservation of energy, or do you think you can make
> energy out of nothing)? If you guys can tell us, we could fix our
> power problems in CA!
>
> But thanks for checking my work, and this is a subtle detail that
> is good to know.
>
>
> Slick

3859. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 09:09:35 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308220109.47513881@posting.google.com>
Source record: 110003

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308211448.51e4ef16@posting.google.com>...
>
> Fascinating... Please have a look at the following reply I got from
> Besser... I still wish people would go through the simple math
> themselves, and make up their own minds what's correct and what isn't.
> I gather that Slick has made up his own mind, though see no evidence
> that it's on the basis of the simple calcs from what I believe he
> already agrees with. Oh, well, not MY problem. (This is twice now,
> recently, that I've followed up on other people's references and found
> them to be at best questionable in some way.)
>

I have no problem admitting i am wrong, when i am wrong. But you
haven't given me any reason to think so.

What is your definition of a conjugate match? When do you think
max. power transfer occurs?

Slick

3860. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 09:12:41 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308220112.6010ed16@posting.google.com>
Source record: 110004

Roy Lewallen <w7el@eznec.com> wrote in message news:<vka3j2sqm7trcc@corp.supernews.com>...
> One more thing. I've never seen that conjugate formula for voltage
> reflection coefficient and can't imagine how it might have been derived.
> I've got a pretty good collection of texts, and none of them show such a
> thing. If anyone has a reference that shows that formula and its
> derivation from fundamental principles, I'd love to see it, and discover
> how the author managed to get from the same fundamental principles as
> everyone else but ended up with a different formula.
>
> Roy Lewallen, W7EL

The conjugate formula is correct. If you believe in cancellation
of reactance. Why else would the magnitude rho (numerator of
Reflection Coefficient) be zero when Zload=Zo*???

Slick

3861. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 10:09:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f45ed40_4@corp.newsgroups.com>
Source record: 110005

Roy Lewallen wrote:
> Y'all gotta r'call things are taught kinda differnt in Texas. I never
> had a professor tell me that any concept was "useless as tits on a boar
> hog", as Cecil's professor told him about instantaneous power.

Back then, Texas A&M was an all-male military military college. We
just didn't have any spare time to spend on trivial subjects. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

3862. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 10:24:32 UTC
From: kd1@sympatico.ca
Message-ID: <3F45EF60.B249918F@sympatico.ca>
Source record: 110006

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Ahhhhh, finally. The not unexpected descent into non-sequitors.
> >
> > Much safer than actually thinking about questions which might cause
> > you to change your world view.
>
> Oh, and allow me to add: Like my EE prof at Texas A&M in the 50's, I
> consider instantaneous power to be a completely useless concept, fully
> appropriately related to how many angels can dance on the head of a pin.
> After all, how much power can traverse a point in zero time?
> Hint: energy per delta-t if t=0 is zero!
>
> I will never forget my prof's words: "Instantaneous power is about as
> useful as tits on a boar hog." But I have an open mind - please convince
> me that you are more brilliant than the head of the EE department at
> Texas A&M.

Are you sure you want to discard instantaneous power?

For consistency you will also have to discard:

instantaneous velocity - distance per time
instantaneous current - charge per time. It will be difficult to have
sine waves if the instantaneous current is always 0.
and inumerable other examples

And for consistency, you will also have to toss calculas, the art of
the infinitesimal, which will make solving most engineering problems
significantly more difficult, if not impossible.

Even your oft quoted expression, P = V * I * cos(theta), was derived
using calculus from the instantaneous P(t) = V(t) * I(t).

Are you sure you want to discard all thoughts of the instantaneous?

As to 'the head of the EE department at Texas A&M', he has either
been mis-interpreted or he is wrong. Not wishing to cast aspersions
on his brilliance, I suspect the former.

...Keith

3863. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 11:29:04 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <DcycncKFepMcY9iiXTWJhw@comcast.com>
Source record: 110007

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vkb4u5hk3phnde@corp.supernews.com...
> Hm, woops. My guess that they wouldn't be lossy was based on the
> assumption that they don't contain much water. In light of what George
> has said, I retract my guess. Putting your antenna close to anything
> containing water is bad news from a loss standpoint, as George says.
>
> Roy Lewallen, W7EL
>
> Crazy George wrote:
> > Ken:
> >
> > I've not run HF measurements on bricks, but I can tell you that a brick
wall
> > is extremely lossy at 1 GHz and above, by measurement. Their water
> > (dielectric constant = 80) content is relatively high unless recently
baked
> > and sealed, and depending on the particular clay they were fired from,
they
> > are somewhat conductive. So, placing your antenna close is like putting
it
> > next to a high dielectric RF absorber. Not a good choice.
> >
> > --
> > Crazy George
>

Well, that expains the wide bandwidth between the 2:1 swr points
(1490 khz)......

Still, I am VERY limited as to my options - I rent here - so this
antenna is it or else I go with a Superantennas MP1 stuck out
the window. While the MP1 is a superb performer for it's size,
I don't think it could do any better than what I've got. Then there
is the fact that I'd have to have the window open to make room
for the MP1 - not a good idea in january in colorado.

Now I haven't had a chance yet to see how good the antenna
works on 160 aside from SWR/bandwith weasuring but tonight
on 80 the antenna seemed to hear pretty well - I'm hearing a lot
of 1, 2, 3 & 6 calls all over the band. If the bricks are absorbing
signals they're not doing too much damage. I'm hearing WWVH
on 5 mhz ok, also and I'm hearing a lot of DX AM broadcast
band stations - It's amazing how crowded that band is at 4 am!

Now I do have the option of taking 1 leg and running it away from the bricks to a nearby tree but the other has to stay where it is - that leg runs most of it's length about 5' away from the wall due to the shape of the building. Problem is that the tree is on the neighbor's property so that's probably out.

Anyways, the performance seems nominal and I don't have many choices so I guess I'll have to be satisfied with what I've got.

72's de Ken KG0WX

3864. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 11:41:50 UTC
From: Bob Cook <captcook@compuserve.com>
Message-ID: <bi4vi3$7en$1@ngspool-d02.news.aol.com>
Source record: 110008
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Re 20 meter hamstick and AH-4:

Do you mean you are using an AH-4 to tune the 20 m hamstick
to other bands? If so, to which bands and what kind of SWR's?

Bob K9KKY

3865. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 11:51:00 UTC
From: Martin <marty123@optonline.net>
Message-ID: <Esn1b.151256$_R5.57854050@news4.srv.hcvlny.cv.net>
Source record: 110009
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Thanks for all of the comments and references. Obviously it's a well thought of rig. I think it will suit my needs nicely.

After 41 years of hamming I decided give it up and recently sold, gave away and junked a 50+ year accumulation of stuff. Made the xyl deliriously happy.

Here we go again!

Marty K1FHR

"Martin" <marty123@optonline.net> wrote in message news:rCO0b.129974$_R5.50384707@news4.srv.hcvlny.cv.net...
> I'd appreciate any comments, pro and con, from actual users of the
> IC-706MKIIG. Performance, reliability, service problems, etc.
>
> As it's described it seems to have features I'd like and need: small size,
> both HF and VHF, and a reasonable power level. Any suggestions as to other
> rigs with similar features would be appreciated also.
>
> Marty K1FHR
>
>

3866. Re: Help:Tower installation/repair Long Island

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 12:04:59 UTC
From: airwavesmith@aol.com
Message-ID: <20030822080459.29741.00000346@mb-m21.aol.com>
Source record: 110010

To fjx,
Call Woody ay 631 462-1970. Tell him CIRIO sent you. 73's
airwavesmith@aol.com

3867. Re: HB9CV doesn't tune up

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 12:05:24 UTC
From: Claus Waldraff <df8gh@darc.de>
Message-ID: <3F460704.6070204@darc.de>
Source record: 110011

HB9CV:

4.2 dBi gain <-- 4,2 dBd, of course
~20 dB F/R

3868. HF Vertical design(s)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 12:08:19 UTC
From: MAS <panman_uk@hotmail.com>
Message-ID: <KKn1b.162$L4.182057@newsfep1-win.server.ntli.net>
Source record: 110012

Hi People,

I have been looking around at "off the shelf" HF vertical antennas and because of the price I am now considering home building one myself.

The only HF antenna I have at the moment is a half size G5RV so there is room for change ;-)

I guess my main area of interest at the moment is 20m so the vertical antenna would be mainly for that band.

Can anyone point me in the direction of any good home brew designs to save me re-inventing the wheel so to speak?

The antenna can be mounted anywhere from ground level to the top of a 20 ft pole at the bottom of the garden. I will be running upto 100w into it from an FT-920 via it's built in ATU.

Cost is only an issue in as much I begrudge paying £300 + for an off the shelf unit so don't restrict your designs on that front..

I am a bit of a dab hand with the tools too but have no fancy antenna tuning devices, so any design will need to be almost resonant from the off if you see what I mean.

Here is hoping for some good proven designs.

M.

3869. Re: Tarheel screwdriver Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 12:11:48 UTC
From: airwavesmith@aol.com
Message-ID: <20030822081148.29741.00000347@mb-m21.aol.com>
Source record: 110013

To Bill,
Yeah, I,ts a good idea but they will cost you a bundle. Why not put up a hamstick which performs better than screwdrivers and a good used one will cost only $5-10 the most compared to a $300-500 screwdrivers. You can dedicate each stick to one specific band or put one vice-versa and it is less bulky too!
73's
airwavesmith@aol

3870. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 13:09:50 UTC
From: Nitespark <nitespark@cox.net>
Message-ID: <mCo1b.13110$uh6.6296@lakeread05>
Source record: 110014
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Bob Cook wrote:
> Re 20 meter hamstick and AH-4:
>
> Do you mean you are using an AH-4 to tune the 20 m hamstick
> to other bands? If so, to which bands and what kind of SWR's?
>
> Bob K9KKY

I have used it on 40 meters successfully and on 15 and 10. The SWR is perfect. The efficiency of the system is not so good. I can do the same thing with my Webster BandSpanner. My biggest problem is being mobile when there is a band opening. Havn't found that many on 15 & 10 recently....at least when I have been in the car.

With the AH-4, it really doesn't matter what I put back on the antenna mount. It will find he L/C combination and match it to the radio (within reason of course...obviously can't use a 1/4 wave UHF spike on 40 meters). I have been looking around for a 102" CB whip. That would work as well as anything.

3871. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 13:17:00 UTC
From: pez <pez7sv@hotmail.com>
Message-ID: <bi554o$r1l$1@nic.grnet.gr>
Source record: 110015

```
|"Dr. Slick" <radio913@aol.com> wrote in message
| ...
| And strictly speaking:
| Reflection Coefficient = (Zl-Zo*)/(Zl-Zo)
| Where * indicates conjugate.
|...

Obviously by mistake.

pez
SV7BAX
```

3872. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 13:33:32 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f461c3a$1_2@127.0.0.1>
Source record: 110016

kd1@sympatico.ca wrote:
> Are you sure you want to discard all thoughts of the instantaneous?

Certainly not! Just thoughts of instantaneous power.

What you are attempting to do is called mind f__king. Please don't
do that.
--
73, Cecil, W5DXP

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http://www.newsfeed.com The #1 Newsgroup Service in the World! >100,000 Newsgroups
---= 19 East/West-Coast Specialized Servers - Total Privacy via Encryption =---

3873. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 13:45:31 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <%7p1b.225463$uu5.42230@sccrnsc04>
Source record: 110017

Reg Edwards wrote:

> Has it not yet occurred to you the impedance of the usual amateur's
> transmitter changes when the load impedance is changed?

[SNIP] Heck Reg! It changes as you modulate! The impedance of my ICOM 746 changes every time I say 'Hello'. It changes from High impedance before 'Hello', to dynamically varying impedance during 'Hello', then back to high impedance as I grab a diet soda.

You are correct in that a constant source impedance exists only in two places: 1) in a perfectly linear amplifier, 2) in our heads as we take exams on circuit theory. All other amplifiers are really non-linear with dynamically varying output impedance.

But it surely uses a lot of bandwidth :-)

DD, W1MCE
>
> In the present context this not only makes a mess of maximum-power theorems,
> conjugate matches, and referrals to renouned authors, it also reduces the
> years and gigabtres of 'learned' arguments on this newsgroup to nonsense.
>
> However, it's been great entertainment. Long may it contiunue. ;o)
> ---
> Reg, G4FGQ
>
>
>

3874. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 14:02:35 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <%np1b.224646$Ho3.28584@sccrnsc03>
Source record: 110018

Richard's numbers are average for what seems to be the RF component of the waveform. It does not include any variations cause by modulation characteristics.

A single number does not exist!! An average value for my voice characteristics will be different from an average value with your voice characteristics, etc.

The spectral and intensity characteristics of each voice is different and will cause the instantaneous and average V/I ratio in the finals to vary. Therefore, a single number does not exist.

It may be possible to develop an equation with variable functions for spectral and intensity density functions to modulate the output but each solution would be unique.

A nice thevinin model would be a constant voltage, example 12 volts dc, with a dynamically varying source resistor. The source resistor has two components in the modulation scheme: 1) the RF frequency variation, constant frequency, 2) and the second term the audio spectral power density of my voice. This would be loaded by a constant 50 ohm load.

Anyway, it's nice to think about. Averages are much easier to work with though!

DD, W1MCE

Reg Edwards wrote:

>>Few seem willing to put a -um- a number to it.
>>
>

[SNIP]

> Such a number must exist.
>
>

3875. Re: Tarheel screwdriver Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 14:25:07 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <rq9ckv42aq1h164f82mag1l9br729nlvgd@4ax.com>
Source record: 109919

On 22 Aug 2003 12:11:48 GMT, airwavesmith@aol.com (Airwavesmith)
wrote:

>To Bill,
> Yeah, I,ts a good idea but they will cost you a bundle. Why not put up a
>hamstick which performs better than screwdrivers and a good used one will cost
>only $5-10 the most compared to a $300-500 screwdrivers. You can dedicate each
>stick to one specific band or put one vice-versa and it is less bulky too!
>73's
> airwavesmith@aol

Please define "perform". In other words why do you think (or know)
that a hamstick "performs" better than a screwdriver?

Danny, K6MHE

3876. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 14:48:56 UTC
From: richardharrison@webtv.net
Message-ID: <15831-3F462D58-40@storefull-2315.public.lawson.webtv.net>
Source record: 109922

Richard Clark wrote:
"I keyed down and made sure the excitation was disconnected---."

Supposing you were measuring the impedance the source shunts its output with, and supposing your amplifier is linear so it can be used for AM and SSB, and supposing that it is Class AB or Class B for more efficiency than Class A, and supposing that it has a small amount of forward bias to reduce crossover distortion, you should measure a much higher impedance while idling than when the transmitter puts full power into a load.

The output impedance has a meaning at maximum power output. This can be determined by trying different loads to find the load that gets the most power from the transmitter. The source impedance is its conjugate.

Best regards, Richard Harrison, KB5WZI

3877. Re: Antenna down tilt in pattern

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 14:58:46 UTC
From: Atlas <shf@pandora.eb>
Message-ID: <Gcq1b.540$QP6.96521289@hestia.telenet-ops.be>
Source record: 109921

From an article for a colinear antenne for 23 cm,the author (wa6stv) said
to get a downtilt you have to cut the elements 2% shorter for 3° downtilt.
I presume the same applies for 13 cm.

3878. Re: RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 15:08:34 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F4631F2.8BB154EE@cwis.net>
Source record: 109920

Ken,
Migration and solid dialectric insulation, sure, but
it all depends on the diameter of the coil. If you really
wrap the thing tight there's more chance than in a 'looser'
coil. Even in foam dialectric migration isn't a quick thing,
in the solid stuff, it's even slower but it does happen.
Don't count on much performance for your antenna on 160
meters. It may load like crazy, but that doesn't say how it's
efficiency/performance will be. Sort of like a 2" rubber duck
on 2 meters, it works, but not much. But, anything is better
than nothing!
The Century Club is a good place to test how an antenna
works,
lots of stations in all parts of the country. I used to 'live'
on the Century Club when I was working (slow shifts, kept me
from being bored to death).
Good luck with it!
'Doc

3879. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 15:24:17 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <BAq1b.29668$Vx2.13458773@newssvr28.news.prodigy.com>
Source record: 109923
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Try Radio Shack for the 102" whip.. they still sell em

Oh, and for kicks, you might want to chuckle at my insanity while
looking at a similar setup at http://www.csotbs.org/ai8w/TruckPics

I sold that truck, and haven't had a chance to reconstruct that system
on the new truck yet, but it's coming.

73 de AI8W, Chris

Nitespark wrote:

>
>
> Bob Cook wrote:
>
>> Re 20 meter hamstick and AH-4:
>>
>> Do you mean you are using an AH-4 to tune the 20 m hamstick
>> to other bands? If so, to which bands and what kind of SWR's?
>>
>> Bob K9KKY
>
>
> I have used it on 40 meters successfully and on 15 and 10. The SWR is
> perfect. The efficiency of the system is not so good. I can do the
> same thing with my Webster BandSpanner. My biggest problem is being
> mobile when there is a band opening. Havn't found that many on 15 & 10
> recently....at least when I have been in the car.
>
> With the AH-4, it really doesn't matter what I put back on the antenna
> mount. It will find he L/C combination and match it to the radio
> (within reason of course...obviously can't use a 1/4 wave UHF spike on
> 40 meters). I have been looking around for a 102" CB whip. That would
> work as well as anything.
>

3880. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 15:44:14 UTC
From: richardharrison@webtv.net
Message-ID: <28311-3F463A4E-28@storefull-2312.public.lawson.webtv.net>
Source record: 109930

Keith wrote:
"Are you sure you want to discard all thoughts of the instantaneous?

Certainly not, but it has little application to power in transmission line problems.

Power is the rate of transferring energy or the rate of doing work. Electrical power is measured in joules per seconds or more succinctly in watts.

What is the value in watts or joules per second when seconds equal zero? I venture an answer: It is the V x I x cos. theta at that instant, but since work is power x time, it won`t do anything for you in zero seconds.

Best regards, Richard Harrison, KB5WZI

3881. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 15:53:45 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <HYScnWdhZZQSoduiXTWJkA@comcast.com>
Source record: 109924

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308211822.2740b335@posting.google.com...
> That's what i thought. You've never designed anything in your life.
>
>
> Slick

I just don't buy into your BS. The one transmitter was for 6m SSB, and was good enough to work Alaska from FN20. The other was a 6m linear amp of which about 200 were built. Now, do you want to tell us who the hell you are?

Tam/WB2TT

3882. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 15:59:27 UTC
From: richardharrison@webtv.net
Message-ID: <28313-3F463DDF-14@storefull-2312.public.lawson.webtv.net>
Source record: 109929

Abdullah Eyles wrote:
"What would the effect of this mistake be?"

Detrimental. There is no way the antenna can perform as expected if the elements are different and misplaced. So, you should demand as-built be as-designed. Then, if it doesn`t perform, take it up with the supplier and designer.

Best regards, Richard Harrison, KB5WZI

3883. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:03:47 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <58fckvskbru7988okfarj5i2r3a8sl3m4r@4ax.com>
Source record: 109925

On Fri, 22 Aug 2003 14:02:35 GMT, Dave Shrader
<david.shrader@comcast.net> wrote:

>A single number does not exist!! An average value for my voice
>characteristics will be different from an average value with your voice
>characteristics, etc.

Hi Dave,

Are you one of those who whistles, hums, and recites the Gettysburg
Address into the mike while tuning up? Many on the band would offer
you as an example of Infernal Resistance. ;-)

73's
Richard Clark, KB7QHC

3884. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:08:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rrfckv0m3ulirvdvbb8gkq51reccg79q6n@4ax.com>
Source record: 109926

On Fri, 22 Aug 2003 05:09:24 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>Back then, Texas A&M was an all-male military military college. We
>just didn't have any spare time to spend on trivial subjects. :-)
>--

Hi Cecil,

military military? Sounds like symptoms of testosterone poisoning.

73's
Richard Clark, KB7QHC

3885. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:09:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4640ca$1_2@127.0.0.1>
Source record: 109927

Richard Clark wrote:
> military military? Sounds like symptoms of testosterone poisoning.

Presently, it's just scrambled brains. But it was a long while until
I realized that A&M didn't stand for Atheletic and Military. :-)
--
73, Cecil, W5DXP

3886. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:17:18 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u7gckv8mbcsa4s9sfqp2eo1uend7b9kgj3@4ax.com>
Source record: 109928

On Fri, 22 Aug 2003 09:48:56 -0500 (CDT), richardharrison@webtv.net
(Richard Harrison) wrote:

>Richard Clark wrote:
>"I keyed down and made sure the excitation was disconnected---."
>
>Supposing you were measuring the impedance the source shunts its output
>with, and supposing your amplifier is linear so it can be used for AM
>and SSB, and supposing that it is Class AB or Class B for more
>efficiency than Class A, and supposing that it has a small amount of
>forward bias to reduce crossover distortion, you should measure a much
>higher impedance while idling than when the transmitter puts full power
>into a load.

This would be true of commercial equipment (that is for commercial
stations, not equipment sold commercially in the retail trade).

>
>The output impedance has a meaning at maximum power output. This can be
>determined by trying different loads to find the load that gets the most
>power from the transmitter. The source impedance is its conjugate.
>
>Best regards, Richard Harrison, KB5WZI

Hi Richard,

And that too was performed, as I described, consistent with others'
reports to their methods (much as you describe).

73's
Richard Clark, KB7QHC

3887. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:23:18 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <Wrr1b.29760$Vx2.13472578@newssvr28.news.prodigy.com>
Source record: 109931
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Bah.. Forgot I'd moved the page to qsl.net

the correct URL is http://www.qsl.net/ai8w/TruckPics/

Sorry about that.

73 de AI8W, Chris

sideband wrote:

> Try Radio Shack for the 102" whip.. they still sell em
>
> Oh, and for kicks, you might want to chuckle at my insanity while
> looking at a similar setup at http://www.csotbs.org/ai8w/TruckPics
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> I sold that truck, and haven't had a chance to reconstruct that system
> on the new truck yet, but it's coming.
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> 73 de AI8W, Chris
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> Nitespark wrote:
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>> Bob Cook wrote:
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>>> Re 20 meter hamstick and AH-4:
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>>> Do you mean you are using an AH-4 to tune the 20 m hamstick
>>> to other bands? If so, to which bands and what kind of SWR's?
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>>> Bob K9KKY
>>
>>
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>> I have used it on 40 meters successfully and on 15 and 10. The SWR is
>> perfect. The efficiency of the system is not so good. I can do the
>> same thing with my Webster BandSpanner. My biggest problem is being
>> mobile when there is a band opening. Havn't found that many on 15 &
>> 10 recently....at least when I have been in the car.
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>> With the AH-4, it really doesn't matter what I put back on the antenna
>> mount. It will find he L/C combination and match it to the radio
>> (within reason of course...obviously can't use a 1/4 wave UHF spike on
>> 40 meters). I have been looking around for a 102" CB whip. That would

>> work as well as anything.
>>
>

3888. Re: RF still in the shack?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:36:59 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <jVidnVsvhZwx29uiXTWJhg@comcast.com>
Source record: 109932

"'Doc" <w5lz@cwis.net> wrote in message news:3F4631F2.8BB154EE@cwis.net...
> Ken,
> Migration and solid dialectric insulation, sure, but
> it all depends on the diameter of the coil. If you really
> wrap the thing tight there's more chance than in a 'looser'
> coil. Even in foam dialectric migration isn't a quick thing,
> in the solid stuff, it's even slower but it does happen.
> Don't count on much performance for your antenna on 160
> meters. It may load like crazy, but that doesn't say how it's
> efficiency/performance will be. Sort of like a 2" rubber duck
> on 2 meters, it works, but not much. But, anything is better
> than nothing!
> The Century Club is a good place to test how an antenna
> works,
> lots of stations in all parts of the country. I used to 'live'
> on the Century Club when I was working (slow shifts, kept me
> from being bored to death).
> Good luck with it!
> 'Doc

You're right about CC - I used to operate a GAP Titan at
my old QTH in Wichita, KS and I NEVER heard anything
beyond the central plains states. Now In Denver I was hearing
stations in So Cal and New Jersey.

As to 160, I'm not expecting much - I may add my leftover
10 foot wires to the antenna and see what happens......

<pause 20 minutes>

Well, just got back in from adding the 2 10' wires... Let's see:

2:1 swr range & resonant freqs:

1.990 - 2.640, 1:1 @ 2.330 mhz (was 2.715)
minor dip to 2:1 @ 8.070 mhz
11.680 - 14.390, 1.2:1 @ 13.610 mhz
21.630 - 25.250, 1.2:1 @ 23.640 mhz

Total antenna length 153'2"

At this point I'm out of wire and really out of room - there
is only 1 point on the far wall where the ends of the antenna
can tied off to and 1 leg is only 5 feet away from it. So, while
I can add 50 feet to one leg to get to that point, I can only
add 5 feet to the other leg. The antenna would not be even
so I'll call it "done".

Thanks all for the tips and advice..... :-)

73's de Ken KG0WX

3889. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:40:08 UTC
From: richardharrison@webtv.net
Message-ID: <10578-3F464768-19@storefull-2318.public.lawson.webtv.net>
Source record: 109935

Cecil wrote:
"---A&M didn`t stand for Atheletic and Military."

The Agricultural & Mechanical College of Texas graduated more Army officers than West Point. Although it was all-male until the Femanazis prevailed, it had a chick ranch nearby until Marvin Zindler threw a monkey wench in the works.

Best regards, Richard Harrison, KB5WZI

3890. Re: Mobile Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 16:44:32 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <bi5h9g$13q0$1@news1.tribune.com>
Source record: 109933

I have a Tracker.

I put the (2 meter) antenna where it clears my garage, and is above the car body.

http://user.mc.net/~jdewey/sleeve_dipole/

KA9CAR

"0|||||||0 Ray" <res009js-nospam-@gte.net> wrote in message news:%XN0b.15970$kK4.9396@nwrddc02.gnilink.net...
> New ham antenna questions.... What would be a good antenna, store or
> homemade, for my vehicle? Where is the best place to locate the antenna on
> my vehicle?
>
> I drive a Jeep Wrangler and will soon want to add a mobile with a dual band
> VHF/UHF antenna. This vehicle has two tops, one fabric and one fiberglass.
> I'm guessing I will probably attach the antenna to the light bar, the
> highest point on the vehicle, across the top of the windshield.
>
> Thanks,
>
> Ray
> 0|||||||0
>
>

3891. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:01:50 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308220901.508b401a@posting.google.com>
Source record: 109934

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308220109.47513881@posting.google.com>...
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308211448.51e4ef16@posting.google.com>...
> >
> > Fascinating... Please have a look at the following reply I got from
> > Besser... I still wish people would go through the simple math
> > themselves, and make up their own minds what's correct and what isn't.
> > I gather that Slick has made up his own mind, though see no evidence
> > that it's on the basis of the simple calcs from what I believe he
> > already agrees with. Oh, well, not MY problem. (This is twice now,
> > recently, that I've followed up on other people's references and found
> > them to be at best questionable in some way.)

> >
>
> I have no problem admitting i am wrong, when i am wrong. But you
> haven't given me any reason to think so.

Well, you may not think I have, but...
>
> What is your definition of a conjugate match? When do you think
> max. power transfer occurs?

I'd be happy to answer this more directly after you show us the steps,
as I suggested, to get from the basic TEM transmission line relations
and the load boundary conditions to Vr/Vf. But for now, I'll let you
consider, if you wish, the case where you have a long transmission
line with reactive Zo, terminated so you have no reflected wave. Rho =
0. SWR = 1:1. I trust you'll agree you "see" an impedance equal to
Zo looking into the source-end of the line. Now imagine that you have
cut this line at some point; you also see Zo looking into that cut,
right? (The side with the load attached, that is.) So, can you
simply connect those two pieces back up and still see no reflection on
the piece on the source side? I _do_ believe that the line can't tell
whether the impedance it's connected to is a load right there, or the
impedance presented by another length of line, so it should be obvious
from that what I believe the line must be connected to, to get rho=0.

Cheers,
Tom

3892. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:18:29 UTC
From: richardharrison@webtv.net
Message-ID: <28311-3F465065-58@storefull-2312.public.lawson.webtv.net>
Source record: 109942

Dr. Slick wrote:
"Does the SWR change as you change the source impedance?"

"SWR" as Reg notes is an indication of match condition when measured at the transmitter output. There may not be enough line for maxima and minima.

Loading a transmitter usually increases the current drawn by the final amplifier. This lowers
its output impedance in most cases. As "SWR" is an indication of mismatch, you can`t change one impedance without changing the "SWR", unless you make a corresponding change in the other impedance in the match. Corresponding is a significant word.

Best regards, Richard Harrison, KB5WZI

3893. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:18:36 UTC
From: tdonaly@aol.com
Message-ID: <20030822131836.28312.00000403@mb-m18.aol.com>
Source record: 109936

>
>Keith wrote:
>"Are you sure you want to discard all thoughts of the instantaneous?
>
>Certainly not, but it has little application to power in transmission
>line problems.
>
>Power is the rate of transferring energy or the rate of doing work.
>Electrical power is measured in joules per seconds or more succinctly in
>watts.
>
>What is the value in watts or joules per second when seconds equal
>zero? I venture an answer: It is the V x I x cos. theta at that instant,
>but since work is power x time, it won`t do anything for you in zero
>seconds.
>
>Best regards, Richard Harrison, KB5WZI
>

If Zeno were around today, he could prove that - based on Cecil's idea
that, as dt goes to zero, energy transfer also goes to zero - there
can be no transfer of energy in a transmission line, since any number
times zero is still zero. Of course, we can all see the fallacy in
that argument, can't we?

3894. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:23:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi5ji7$r5u$1@titan.btinternet.com>
Source record: 109937

"Richard Clark" said
> Are you one of those who whistles, hums, and recites the Gettysburg
> Address into the mike while tuning up?

==========

"Patriotism is not enough". (Nurse Edith Cavel)

3895. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:31:07 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308220931.4c3d3f48@posting.google.com>
Source record: 109938

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308211826.51ca9a4a@posting.google.com>...

> If you claim the [rho] into a passive network can be greater than
> one, indeed this would be a free energy device!

I say it would not be, in the specific examples I proposed. Since you say otherwise, prove it. (Hint: if you use the model correctly to calculate the power dissipated in the load and in the line, their sum will be exactly equal to the power supplied to the (load+line). That will be true for any length of line. |rho|>1 doesn't change that.)

Cheers,
Tom

3896. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:31:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f465403_2@127.0.0.1>
Source record: 109939

Richard Harrison wrote:
> The Agricultural & Mechanical College of Texas graduated more Army
> officers than West Point.

Gen. Patton once said something like: Give me a bunch of West Point Graduates
and I will win some battles. Give me a bunch of Texas Aggie Graduates
and I'll win the G-d damned war.

> Although it was all-male until the Femanazis
> prevailed, it had a chick ranch nearby until Marvin Zindler threw a
> monkey wench in the works.

La Grange, TX, the Texas Aggie's favorite remote campuss.
--
73, Cecil, W5DXP

3897. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:36:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f465539$1_2@127.0.0.1>
Source record: 109940

Tdonaly wrote:
> If Zeno were around today, he could prove that - based on Cecil's idea
> that, as dt goes to zero, energy transfer also goes to zero - there
> can be no transfer of energy in a transmission line, since any number
> times zero is still zero. Of course, we can all see the fallacy in
> that argument, can't we?

What's the fallacy? If dt=0, then time stands still,
and of course, nothing happens and nothing moves.
--
73, Cecil, W5DXP

3898. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:42:35 UTC
From: Nitespark <nitespark@cox.net>
Message-ID: <3Cs1b.13132$uh6.12095@lakeread05>
Source record: 109941
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

I am sure RS sells them. I was just looking for one at a flea market,
or hamfest or something for a few bucks. I am not in desperate need of
one just looking to try it out for comparison purposes.

Tried the link below and it does not work.

sideband wrote:
> Try Radio Shack for the 102" whip.. they still sell em
>
> Oh, and for kicks, you might want to chuckle at my insanity while
> looking at a similar setup at http://www.csotbs.org/ai8w/TruckPics
>
> I sold that truck, and haven't had a chance to reconstruct that system
> on the new truck yet, but it's coming.
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> 73 de AI8W, Chris
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> Nitespark wrote:
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>> Bob Cook wrote:
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>>> Re 20 meter hamstick and AH-4:
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>>> Do you mean you are using an AH-4 to tune the 20 m hamstick
>>> to other bands? If so, to which bands and what kind of SWR's?
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>>> Bob K9KKY
>>
>>
>>
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>> perfect. The efficiency of the system is not so good. I can do the
>> same thing with my Webster BandSpanner. My biggest problem is being
>> mobile when there is a band opening. Havn't found that many on 15 &
>> 10 recently....at least when I have been in the car.
>>
>> With the AH-4, it really doesn't matter what I put back on the antenna
>> mount. It will find he L/C combination and match it to the radio
>> (within reason of course...obviously can't use a 1/4 wave UHF spike on
>> 40 meters). I have been looking around for a 102" CB whip. That would
>> work as well as anything.
>>

>

3899. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:47:28 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <QGs1b.29780$Vx2.13489820@newssvr28.news.prodigy.com>
Source record: 109944
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Yeah... I moved the page, and for some reason the old URL came flowing
out of my fingers... try http://www.qsl.net/ai8w/TruckPics/

73 de AI8W, Chris

Nitespark wrote:

> I am sure RS sells them. I was just looking for one at a flea market,
> or hamfest or something for a few bucks. I am not in desperate need of
> one just looking to try it out for comparison purposes.
>
> Tried the link below and it does not work.
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> sideband wrote:
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>> Try Radio Shack for the 102" whip.. they still sell em
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>> Oh, and for kicks, you might want to chuckle at my insanity while
>> looking at a similar setup at http://www.csotbs.org/ai8w/TruckPics
>>
>> I sold that truck, and haven't had a chance to reconstruct that system
>> on the new truck yet, but it's coming.
>>
>> 73 de AI8W, Chris
>>
>> Nitespark wrote:
>>
>>>
>>>
>>> Bob Cook wrote:
>>>
>>>> Re 20 meter hamstick and AH-4:
>>>>
>>>> Do you mean you are using an AH-4 to tune the 20 m hamstick
>>>> to other bands? If so, to which bands and what kind of SWR's?
>>>>
>>>> Bob K9KKY
>>>
>>>
>>>
>>>
>>> I have used it on 40 meters successfully and on 15 and 10. The SWR
>>> is perfect. The efficiency of the system is not so good. I can do
>>> the same thing with my Webster BandSpanner. My biggest problem is

>>> being mobile when there is a band opening. Havn't found that many on
>>> 15 & 10 recently....at least when I have been in the car.
>>>
>>> With the AH-4, it really doesn't matter what I put back on the
>>> antenna mount. It will find he L/C combination and match it to the
>>> radio (within reason of course...obviously can't use a 1/4 wave UHF
>>> spike on 40 meters). I have been looking around for a 102" CB whip.
>>> That would work as well as anything.
>>>
>>
>

3900. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 17:49:05 UTC
From: Nitespark <nitespark@cox.net>
Message-ID: <8Is1b.13133$uh6.12971@lakeread05>
Source record: 109943
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

sideband wrote:

> Bah.. Forgot I'd moved the page to qsl.net
>
> the correct URL is http://www.qsl.net/ai8w/TruckPics/
>
> Sorry about that.
>

Got the correct URL. Interesting config. I notice the antenna is pinned over, looks like either wire or string. If its wire, is that part of the radiating element???

The pic made me think of my first computer/radio setup. It was a Commodore Vic 20 with a Kantronics TU. This was when interfacing computers to radios was the newest thing. I invited a friend to the shack showing him the RTTY and CW capabilities. I tuned into a 20 meter CW QSO. As we sat there watching the message on the screen at 20 wpm, the operator was in an 18-wheeler on the interstate (somewhere). A week later, my friend had a computer hooked to his system.

3901. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 18:00:05 UTC
From: tdonaly@aol.com
Message-ID: <20030822140005.28604.00000459@mb-m18.aol.com>
Source record: 109945

>
>
>Tdonaly wrote:
>> If Zeno were around today, he could prove that - based on Cecil's idea
>> that, as dt goes to zero, energy transfer also goes to zero - there
>> can be no transfer of energy in a transmission line, since any number
>> times zero is still zero. Of course, we can all see the fallacy in
>> that argument, can't we?
>
>What's the fallacy? If dt=0, then time stands still,
>and of course, nothing happens and nothing moves.
>--
>73, Cecil, W5DXP
>

So you think it's impossible to send energy from one
place to another via a transmission line? Hmmm. I
guess Achilles never did catch that turtle.
73,
Tom Donaly, KA6RUH

3902. Re: HF Vertical design(s)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 18:05:29 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkcmr4gc8k7l89@corp.supernews.com>
Source record: 109946

For 20 meters, all you need is a piece of wire or tubing that's about 16-1/2 feet high (adjust as necessary). I've done it with aluminum tubing (you'll have to use aluminium, of course :)), with a wire hung vertically from a tree, and a wire spaced from a 2 X 4 inch or lighter piece of lumber with TV twinlead standoff insulators. Shouldn't run over ï¿½10 or so, and it will work every bit as well as, or better than, any one you can buy -- on 20 meters. Feed directly with 50 ohm coax. If you mount it at ground level, bury up to a dozen or so wires extending radially outward from the antenna if possible. (I just stretch them along the ground, "stapling" down where necessary with a short piece of wire, and let the grass grow over them.) Make them as long as you can, but there's no point in making them any longer than about 20 feet. If you mount the antenna above ground, you can use fewer radials -- if the base is 20 feet up, four will be plenty. If the radials are above ground, you should make them pretty close to 16 - 1/2 feet long, and adjust if necessary to get an adequately good match.

Roy Lewallen, W7EL

MAS wrote:
> Hi People,
>
> I have been looking around at "off the shelf" HF vertical antennas and
> because of the price I am now considering home building one myself.
>
> The only HF antenna I have at the moment is a half size G5RV so there is
> room for change ;-)
>
> I guess my main area of interest at the moment is 20m so the vertical
> antenna would be mainly for that band.
>
> Can anyone point me in the direction of any good home brew designs to save
> me re-inventing the wheel so to speak?
>
> The antenna can be mounted anywhere from ground level to the top of a 20 ft
> pole at the bottom of the garden. I will be running upto 100w into it from
> an FT-920 via it's built in ATU.
>
> Cost is only an issue in as much I begrudge paying ï¿½300 + for an off the
> shelf unit so don't restrict your designs on that front..
>
> I am a bit of a dab hand with the tools too but have no fancy antenna tuning
> devices, so any design will need to be almost resonant from the off if you
> see what I mean.
>

> Here is hoping for some good proven designs.
>
> M.
>
>
>

3903. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 18:16:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f465e6a_2@127.0.0.1>
Source record: 109947

Tdonaly wrote:
> So you think it's impossible to send energy from one
> place to another via a transmission line?

In zero time, yes. Isn't that what the speed of light
limit is all about?
--
73, Cecil, W5DXP

3904. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 18:25:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <usnckvgcadp25d4cfsrr7clp1ophj26co8@4ax.com>
Source record: 109948

On Fri, 22 Aug 2003 11:16:03 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Tdonaly wrote:
>> So you think it's impossible to send energy from one
>> place to another via a transmission line?
>
>In zero time, yes. Isn't that what the speed of light
>limit is all about?

Hi Cecil,

At the speed of light (in any media) power is transferred in zero time
by definition.

Of course if you are Achilles, outside of the power's frame of
reference, you have already lost the chase. :-)

73's
Richard Clark, KB7QHC

3905. Re: Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 18:39:00 UTC
From: Helmut Wabnig <hXXXwabnig@aXXXon.at>
Message-ID: <4kockvcte3919l7qanda8f1j5egcvtsrgt@4ax.com>
Source record: 109949

On Tue, 19 Aug 2003 17:43:39 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Maximum power is dissipated in the load when the length of the line is 0
>metres.
>
>Am I right, Helmut ?
>

Right, if the question were:
how to optimize the cable length,
Let me suggest the following answer:

****
The correct length of a feed line is from
the antenna jack of your transceiver straight up
to the connector at the antenna feedpoint or balun,
no more no less.

****

Imagine an antenna cable 1 meter too short,
the tranceiver hanging in mid-air above your desk,
otherwise, too long cables tend to cause unecessary
losses and comprise man-traps.

Hope that settles the never ending dispute about
length-of-feedline.
Add some grain of salt :-)

w.

3906. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 18:54:24 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4666E0.54F10149@uci.edu>
Source record: 109950

Richard Harrison wrote:
> What is the value in watts or joules per second when seconds equal
> zero? I venture an answer: It is the V x I x cos. theta at that instant,
> but since work is power x time, it won`t do anything for you in zero
> seconds.

I think you have a slight misconception about the meaning of instantaneous power. AC power is a pseudo-sinusoidal function with respect to time, like that of full-wave rectifier. The function has a value, an instantaneous amplitude, at any time t which represents the rate at which energy in Joules is moving past a point x at time t. It may not be a terribly useful thing to know, but it isn't a ficticious quantity.

73, ac6xg

3907. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 19:03:21 UTC
From: sideband <AINO8SPAMW@cac.net>
Message-ID: <ZNt1b.29837$Vx2.13504879@newssvr28.news.prodigy.com>
Source record: 109951
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Yes.. If you would read the description paragraphs, you would have found out that from the feedpoint of the one 102" whip, to the end of the other 102" whip (insulated from ground) is 40' of wire. it was all part of the radiating element.

de AI8W, Chris

Nitespark wrote:

>
>
> sideband wrote:
>
>> Bah.. Forgot I'd moved the page to qsl.net
>>
>> the correct URL is http://www.qsl.net/ai8w/TruckPics/
>>
>> Sorry about that.
>>
>
> Got the correct URL. Interesting config. I notice the antenna is
> pinned over, looks like either wire or string. If its wire, is that
> part of the radiating element???
>
> The pic made me think of my first computer/radio setup. It was a
> Commodore Vic 20 with a Kantronics TU. This was when interfacing
> computers to radios was the newest thing. I invited a friend to the
> shack showing him the RTTY and CW capabilities. I tuned into a 20 meter
> CW QSO. As we sat there watching the message on the screen at 20 wpm,
> the operator was in an 18-wheeler on the interstate (somewhere). A week
> later, my friend had a computer hooked to his system.
>

3908. 40 Foot Lengths of Irrigation Tubing - FREE

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 19:23:23 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308221123.f56795a@posting.google.com>
Source record: 109952

I have two unused forty foot lengths of aluminum irrigation tubing I need to unload. One is 4" in diameter and the other is 3" in diameter. Wall thickneses are around 0.060". A number of years ago I built several fullsize 40M yagis for fellow club members and I used this tubing for the booms, etc. I've been storing these "leftover" tubes ever since but now I have to either find a home for them or scrap them. I'll give them away gratis to anyone who will pick them up. The 4" tube would make a nice light-duty easy-up guyed tower for instance. The location is Clifton Heights PA in the southeastern suburbs of Philadelphia. E-mail w3rv to <kelly@dvol.com>

3909. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 19:35:40 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308221135.10f4e992@posting.google.com>
Source record: 109953

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:<LJc1b.5707$sV.899@newsread1.news.atl.earthlink.net>...
> Roy:
>
> [snip]
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vka3j2sqm7trcc@corp.supernews.com...
> > One more thing. I've never seen that conjugate formula for voltage
> > reflection coefficient and can't imagine how it might have been derived.
> > I've got a pretty good collection of texts, and none of them show such a
> > thing.
> [snip]
>
> You are absolutely correct Roy, that formula given by "Slick" is just plain
> WRONG!
>
> rho = (Z - R)/(Z + R)
>
> Always has been, always will be.
>

As long as they are all purely real. Roy disagrees even when he
is wrong, because too many people read this NG, and it might make him
look bad (i.e., Not the All-Knowing Guru he pretends to be).

> Where does that "Slick" guy get his information? And where does "Slick" get
> off with all of his "potifications"??? I dunno... *He* thinks "Besser",
> "Pozar" and
> ARRL are authoritative sources for transmission line technology!!!
>

Bwa! HAah! Much, much, MUCH more than you will ever be!

> Me?
>
> I have made a living as a professional Engineer designing transmission
> equipment over
> the past four decades, currently more than $4BB gross shipped to world wide
> markets,
> where the Zo I used is neither real, nor a constant!
>

I feel sorry for your customers...

> And what is more... I have never consulted any of those three authorities
> referenced by

> "Slick". I certainly don't think of them as being authoritative, "cream
> skimmers"
> perhaps, but not certainly not authoritative.
>

Dr. Besser kicks your ass backwards when it comes to RF knowledge.

And the ARRL is extremely well known. Pozar not so much, but the
guy is out there on the PhD level. I don't give a Sh** who you think
is an authority.

Look them up, they have way more credentials than either you or I.

> I believe that "Slick" has gotta stop "pontificating" and start reading in
> better circles...
> much better!

Much better than the likes of you, then yes, you would certainly
be correct!

The conjugate formula is correct. If you believe in cancellation
of reactance. Why else would the magnitude rho (numerator of
Reflection Coefficient) be zero when Zload=Zo*???

Slick

3910. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 19:36:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkcs67l7brta19@corp.supernews.com>
Source record: 109954

In circuits involving purely sinusoidal V and I of the same frequency, the power waveform is actually a true sinusoidal function, except with a D.C. offset. It doesn't at all resemble the output from a full wave rectifier. The D.C. offset is the average value, and the frequency of the sine portion is twice the frequency of V or I.

Roy Lewallen, W7EL

Jim Kelley wrote:
>
> Richard Harrison wrote:
>
>>What is the value in watts or joules per second when seconds equal
>>zero? I venture an answer: It is the V x I x cos. theta at that instant,
>>but since work is power x time, it won`t do anything for you in zero
>>seconds.
>
>
> I think you have a slight misconception about the meaning of
> instantaneous power. AC power is a pseudo-sinusoidal function with
> respect to time, like that of full-wave rectifier. The function has a
> value, an instantaneous amplitude, at any time t which represents the
> rate at which energy in Joules is moving past a point x at time t. It
> may not be a terribly useful thing to know, but it isn't a ficticious
> quantity.
>
> 73, ac6xg

3911. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 19:44:00 UTC
From: tdonaly@aol.com
Message-ID: <20030822154400.28386.00000366@mb-m18.aol.com>
Source record: 109955

>
>Tdonaly wrote:
>> So you think it's impossible to send energy from one
>> place to another via a transmission line?
>
>In zero time, yes. Isn't that what the speed of light
>limit is all about?
>--
>73, Cecil, W5DXP

Cecil,
as delta t goes to zero, the quantity dx/dt doesn't necessarily
also go to zero. If it did, no one would ever again have to get a permanent
headache studying calculus.
73,
Tom Donaly, KA6RUH

3912. Re: HF Vertical design(s)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 19:46:49 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <b$uMQoJpMnR$EANV@ifwtech.co.uk>
Source record: 109961

MAS wrote:
>Hi People,
>
>I have been looking around at "off the shelf" HF vertical antennas and
>because of the price I am now considering home building one myself.
>
>The only HF antenna I have at the moment is a half size G5RV so there is
>room for change ;-)
>
>I guess my main area of interest at the moment is 20m so the vertical
>antenna would be mainly for that band.
>
>Can anyone point me in the direction of any good home brew designs to save
>me re-inventing the wheel so to speak?
>
>The antenna can be mounted anywhere from ground level to the top of a 20 ft
>pole at the bottom of the garden. I will be running upto 100w into it from
>an FT-920 via it's built in ATU.
>
>Cost is only an issue in as much I begrudge paying ï¿½300 + for an off the
>shelf unit so don't restrict your designs on that front..
>
>I am a bit of a dab hand with the tools too but have no fancy antenna tuning
>devices, so any design will need to be almost resonant from the off if you
>see what I mean.
>
>Here is hoping for some good proven designs.

Try a 33ft whip, insulated at the base. You could perhaps make this
using an old CB whip on top of your 20ft pole.

This will act as a half-wave vertical on 20m. It requires a matching
network at the base (one L and one C) but only a very modest ground -
just an earth spike would probably do.

However, if you put in some ground radials and adapt the matching
network slightly, you can have a very effective 40m antenna thrown in
free. That will give you something to do on those winter nights when 20m
is closed. No remote band-switching is required - we discussed the
network here a few weeks ago, and someone kindly sent me the scanned
page from QST if you're interested.

Further down the line, save up for a remote ATU, and then all the middle
HF bands - 7, 10, 14 and 18MHz - will be yours with this simple antenna.
It will also get you out on 3.5MHz (where it's rather short) and

21/24/28MHz (where it's rather long, so it loses gain in useless high-angle lobes).

If the pole is at the bottom of the garden, consider beefing-up the top section so that you can string a horizontal wire from the top, back towards the house. With appropriate matching at the base (and again you can do a two-band automatic network) you can make that work on 40 and 80.

The whole thing makes a very useful "progressive" system for the smaller British garden.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

3913. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 19:50:01 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4673E9.71FB015D@uci.edu>
Source record: 109956

Roy Lewallen wrote:
>
> In circuits involving purely sinusoidal V and I of the same frequency,
> the power waveform is actually a true sinusoidal function, except with a
> D.C. offset. It doesn't at all resemble the output from a full wave
> rectifier. The D.C. offset is the average value, and the frequency of
> the sine portion is twice the frequency of V or I.

Yes, thanks Roy. I've had absolute value circuits on the brain all this
week.

Nevertheless, instantaneous power is simply the instantaneous amplitude
at time t of the (sin^2(wt))/2 function.

73, ac6xg

> Roy Lewallen, W7EL
>
> Jim Kelley wrote:
> >
> > Richard Harrison wrote:
> >
> >>What is the value in watts or joules per second when seconds equal
> >>zero? I venture an answer: It is the V x I x cos. theta at that instant,
> >>but since work is power x time, it won`t do anything for you in zero
> >>seconds.
> >
> >
> > I think you have a slight misconception about the meaning of
> > instantaneous power. AC power is a pseudo-sinusoidal function with
> > respect to time, like that of full-wave rectifier. The function has a
> > value, an instantaneous amplitude, at any time t which represents the
> > rate at which energy in Joules is moving past a point x at time t. It
> > may not be a terribly useful thing to know, but it isn't a ficticious
> > quantity.
> >
> > 73, ac6xg

3914. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 20:24:11 UTC
From: Nitespark <nitespark@cox.net>
Message-ID: <zZu1b.13149$uh6.8487@lakeread05>
Source record: 109957
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

I didn't even see the rest of the pics. When I scrolled down, I saw
them. Guess you get a lot of comments at the truckstops from the other
drivers????

Certainly not an antenna configuration for someone driving a Ford Focus.

sideband wrote:
> Yes.. If you would read the description paragraphs, you would have found
> out that from the feedpoint of the one 102" whip, to the end of the
> other 102" whip (insulated from ground) is 40' of wire. it was all part
> of the radiating element.
>
> de AI8W, Chris
>
> Nitespark wrote:
>
>>
>>
>> sideband wrote:
>>
>>> Bah.. Forgot I'd moved the page to qsl.net
>>>
>>> the correct URL is http://www.qsl.net/ai8w/TruckPics/
>>>
>>> Sorry about that.
>>>
>>
>> Got the correct URL. Interesting config. I notice the antenna is
>> pinned over, looks like either wire or string. If its wire, is that
>> part of the radiating element???
>>
>> The pic made me think of my first computer/radio setup. It was a
>> Commodore Vic 20 with a Kantronics TU. This was when interfacing
>> computers to radios was the newest thing. I invited a friend to the
>> shack showing him the RTTY and CW capabilities. I tuned into a 20
>> meter CW QSO. As we sat there watching the message on the screen at
>> 20 wpm, the operator was in an 18-wheeler on the interstate
>> (somewhere). A week later, my friend had a computer hooked to his
>> system.
>>
>

3915. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 20:49:42 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Ms-cncxHGod3HNuiU-KYuQ@comcast.com>
Source record: 109958

What kind of SWR did you get on frequencies not in your table? I would
expect to see some 10:1 and 30:1 type numbers.

Tam/WB2TT
"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:kbqdnUpeoaQbz9iiU-KYgw@comcast.com...
>
> The antenna resonates as follows:
> ============
> 2.130 2:1 swr
> 2.715 1:1 swr (flat)
> 3.620 2:1 swr
> ============
> 8.970 2:1 swr
> 9.210 1.8:1 swr
> 9.390 2:1 swr
> ============
> 12.230 2:1 swr
> 13.040 1.9:1 swr
> 13.850 2:1 swr
> ============
> 15.930 2:1 swr
> ============
> 20.970 2:1 swr
> 22.745 1.2:1 swr
> 24.520 2:1 swr
> ============
>
> If I figure 468/133.1666666667 I get 3.514.393 mhz
> for resonance How come the antenna is so far off?
> Could it be the height? Not that I'm complaining - I
> like the low resonance and my Z11 autotuner will take
> this antenna down to 1.8 mhz real easy. Although at
> that freq I expect the antenna will radiate a NVIS
> signal due to low HAAT.
>
> Any ideas???
>
> 72's de Ken KG0WX
>
>

3916. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 20:51:24 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkd0i9167nq004@corp.supernews.com>
Source record: 109959

Jim Kelley wrote:
>
> Roy Lewallen wrote:
>
>>In circuits involving purely sinusoidal V and I of the same frequency,
>>the power waveform is actually a true sinusoidal function, except with a
>>D.C. offset. It doesn't at all resemble the output from a full wave
>>rectifier. The D.C. offset is the average value, and the frequency of
>>the sine portion is twice the frequency of V or I.
>
>
> Yes, thanks Roy. I've had absolute value circuits on the brain all this
> week.
>
> Nevertheless, instantaneous power is simply the instantaneous amplitude
> at time t of the (sin^2(wt))/2 function.
>
> 73, ac6xg

Only if the voltage and current are in phase. Here's the more general solution (cosines could be used instead with equal validity):

Given that v = V * sin(wt + phiv)
i = I * sin(wt + phii)

Then p = v * i = VI * sin(wt + phiv) * sin(wt + phii)

The product of the sines can be transformed via a simple trig identity to give

p = VI * 1/2[cos(phiv - phii) - cos(2wt + phiv + phii)]

The first term in the brackets is D.C. -- it's time-independent. The second term is a pure sine wave. So the result is a pure sine wave with a D.C. offset.

I've described the meaning and significance of the power waveform in at least one earlier posting on this newsgroup. If anyone is interested who can't find it on Google, I'll look it up and post the subject and date.

Roy Lewallen, W7EL

3917. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:04:11 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f468655_2@news1.prserv.net>
Source record: 109960

Ken:

With a short attention span, I'm not sure I understand the tree option you mention, but if you can run one leg away from the wall, at near a right angle, then put 2,3, 4 or more wires on the wall and call that your counterpoise. Feed the wire against that. Picture a ground plane turned on its side with the driven element running horizontal. That will get most of the field away from the bricks.

--
Crazy George
Remove NO and SPAM from return address
"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:DcycncKFepMcY9iiXTWJhw@comcast.com...
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vkb4u5hk3phnde@corp.supernews.com...
> > Hm, woops. My guess that they wouldn't be lossy was based on the
> > assumption that they don't contain much water. In light of what George
> > has said, I retract my guess. Putting your antenna close to anything
> > containing water is bad news from a loss standpoint, as George says.
> >
> > Roy Lewallen, W7EL
> >
> > Crazy George wrote:
> > > Ken:
> > >
> > > I've not run HF measurements on bricks, but I can tell you that a
brick
> wall
> > > is extremely lossy at 1 GHz and above, by measurement. Their water
> > > (dielectric constant = 80) content is relatively high unless recently
> baked
> > > and sealed, and depending on the particular clay they were fired from,
> they
> > > are somewhat conductive. So, placing your antenna close is like
putting
> it
> > > next to a high dielectric RF absorber. Not a good choice.
> > >
> > > --
> > > Crazy George
> >
>
> Well, that expains the wide bandwidth between the 2:1 swr points

> (1490 khz)......
>
> Still, I am VERY limited as to my options - I rent here - so this
> antenna is it or else I go with a Superantennas MP1 stuck out
> the window. While the MP1 is a superb performer for it's size,
> I don't think it could do any better than what I've got. Then there
> is the fact that I'd have to have the window open to make room
> for the MP1 - not a good idea in january in colorado.
>
> Now I haven't had a chance yet to see how good the antenna
> works on 160 aside from SWR/bandwith weasuring but tonight
> on 80 the antenna seemed to hear pretty well - I'm hearing a lot
> of 1, 2, 3 & 6 calls all over the band. If the bricks are absorbing
> signals they're not doing too much damage. I'm hearing WWVH
> on 5 mhz ok, also and I'm hearing a lot of DX AM broadcast
> band stations - It's amazing how crowded that band is at 4 am!
>
> Now I do have the option of taking 1 leg and running it away
> from the bricks to a nearby tree but the other has to stay where
> it is - that leg runs most of it's length about 5' away from the
> wall due to the shape of the building. Problem is that the tree
> is on the neighbor's property so that's probably out.
>
> Anyways, the performance seems nominal and I don't have
> many choices so I guess I'll have to be satisfied with what
> I've got.
>
> 72's de Ken KG0WX
>
>

3918. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:12:36 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f468930_2@news1.prserv.net>
Source record: 109962

Roy:

I get the impression that building materials survive by being full of water. I had the chance to measure cinder blocks which had been dehydrated (poor RF) and watch them gather moisture over a year or so (really, really bad after a year). And that was inside an air conditioned lab. I suspect the process would have taken only days outside in our 90%+ humidity.

Sheetrock = bad, moisture
Clay tile = better, glazed to prevent moisture penetration
wood = bad, moisture, even after years in 100 degree attics, interestingly enough.
Styrofoam with a thin polymer coating (various proprietary wall systems), = pretty good, unless the interface wicks moisture in because the wrong glue is used.
ad nauseum
--
Crazy George
Remove NO and SPAM from return address

3919. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:23:54 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308221323.56884299@posting.google.com>
Source record: 109963

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<HYScnWdhZZQSoduiXTWJkA@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308211822.2740b335@posting.google.com...
> > That's what i thought. You've never designed anything in your life.
> >
> >
> > Slick
>
> I just don't buy into your BS. The one transmitter was for 6m SSB, and was
> good enough to work Alaska from FN20. The other was a 6m linear amp of which
> about 200 were built. Now, do you want to tell us who the hell you are?
>
> Tam/WB2TT

Someone who has helped design more output matching networks than
you, that's certain.

Slick

3920. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:23:54 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308221323.4408923d@posting.google.com>
Source record: 109964

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<HYScnWdhZZQSoduiXTWJkA@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308211822.2740b335@posting.google.com...
> > That's what i thought. You've never designed anything in your life.
> >
> >
> > Slick
>
> I just don't buy into your BS. The one transmitter was for 6m SSB, and was
> good enough to work Alaska from FN20. The other was a 6m linear amp of which
> about 200 were built. Now, do you want to tell us who the hell you are?
>
> Tam/WB2TT

Someone who has helped design more output matching networks than
you, that's certain.

Slick

3921. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same load)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:28:16 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308221328.db58b6f@posting.google.com>
Source record: 109965

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308220931.4c3d3f48@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308211826.51ca9a4a@posting.google.com>...
>
> > If you claim the [rho] into a passive network can be greater than
> > one, indeed this would be a free energy device!
>
> I say it would not be, in the specific examples I proposed. Since you
> say otherwise, prove it. (Hint: if you use the model correctly to
> calculate the power dissipated in the load and in the line, their sum
> will be exactly equal to the power supplied to the (load+line). That
> will be true for any length of line. |rho|>1 doesn't change that.)
>
> Cheers,
> Tom

Hint: the impedance of the generator on the input to a port will
be the same before and after you send the incident wave down the line.

If the reflected RMS voltage is greater than the incident, there
is theoretically greater power in the reflected wave than the
incident. If you get this with a passive network, you have free
energy.

If you can't understand this basic concept, well, i can't help you
then...

Cheers,

Slick

3922. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:32:35 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308221332.30599db3@posting.google.com>
Source record: 109966

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<28311-3F465065-58@storefull-2312.public.lawson.webtv.net>...
> Dr. Slick wrote:
> "Does the SWR change as you change the source impedance?"
>
> "SWR" as Reg notes is an indication of match condition when measured at
> the transmitter output. There may not be enough line for maxima and
> minima.
>
> Loading a transmitter usually increases the current drawn by the final
> amplifier. This lowers
> its output impedance in most cases. As "SWR" is an indication of
> mismatch, you can`t change one impedance without changing the "SWR",
> unless you make a corresponding change in the other impedance in the
> match. Corresponding is a significant word.
>
> Best regards, Richard Harrison, KB5WZI

Well, like i said, the SWR will change as you change the source
Z, but you have to measure it before the reflection occurs (the SWR
must be the same Z as the source, and must be right at the output), or
you won't measure it "downstream".

Slick

3923. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:36:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkd363rtfomg93@corp.supernews.com>
Source record: 109967

Very interesting.

There's a little data on the RF properties of such things, but it's pretty sparse and limited in scope.

Seems to me that the thing to do would be wind a big air core coil, and measure its inductance and Q. Compare that to the inductance and Q with the material under test inserted into the center of the coil. Given similar size samples, that should at least give an indication of comparitive loss and dielectric constant of the materials. Quantitative results could probably be had with a bit of thought and calculation.

Or maybe just stick a plate on each side of the sample to make a capacitor, and measure the capacitance and Q. One method would probably work better for some materials and the other for others.

There's no doubt that water is really bad stuff at HF.

Roy Lewallen, W7EL

Crazy George wrote:
> Roy:
>
> I get the impression that building materials survive by being full of water.
> I had the chance to measure cinder blocks which had been dehydrated (poor
> RF) and watch them gather moisture over a year or so (really, really bad
> after a year). And that was inside an air conditioned lab. I suspect the
> process would have taken only days outside in our 90%+ humidity.
>
> Sheetrock = bad, moisture
> Clay tile = better, glazed to prevent moisture penetration
> wood = bad, moisture, even after years in 100 degree attics, interestingly
> enough.
> Styrofoam with a thin polymer coating (various proprietary wall systems), =
> pretty good, unless the interface wicks moisture in because the wrong glue
> is used.
> ad nauseum
> --
> Crazy George
> Remove NO and SPAM from return address
>
>

3924. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:44:54 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <5l6dnbDQ1-5KE9uiXTWJkw@comcast.com>
Source record: 109968

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:Ms-cncxHGod3HNuiU-KYuQ@comcast.com...
> What kind of SWR did you get on frequencies not in your table? I would
> expect to see some 10:1 and 30:1 type numbers.

My only current way to measure SWR is with a bridge and a low
power transmitter. The limit of this device is 5:1. At times, the SWR
inicated 4-4.5:1 but never higher......

I've since added 10' to each leg and here are the latest numbers:

2:1 swr bandwidth and resonance points:
1.990 - 2.640, 1:1 @ 2.330 mhz (was 2.715)
minor dip to 2:1 @ 8.070 mhz
11.680 - 14.390, 1.2:1 @ 13.610 mhz
21.630 - 25.250, 1.2:1 @ 23.640 mhz

Total antenna length 153'2" (76'7" per leg)

73's de Ken KG0WX

3925. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:48:43 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308221348.2a10c454@posting.google.com>
Source record: 109869

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308220901.508b401a@posting.google.com>...
> >
> > I have no problem admitting i am wrong, when i am wrong. But you
> > haven't given me any reason to think so.
>
> Well, you may not think I have, but...

You certainly have not..

> >
> > What is your definition of a conjugate match? When do you think
> > max. power transfer occurs?
>
> I'd be happy to answer this more directly after you show us the steps,
> as I suggested, to get from the basic TEM transmission line relations
> and the load boundary conditions to Vr/Vf. But for now, I'll let you
> consider, if you wish, the case where you have a long transmission
> line with reactive Zo, terminated so you have no reflected wave. Rho =
> 0. SWR = 1:1. I trust you'll agree you "see" an impedance equal to
> Zo looking into the source-end of the line. Now imagine that you have
> cut this line at some point; you also see Zo looking into that cut,
> right? (The side with the load attached, that is.) So, can you
> simply connect those two pieces back up and still see no reflection on
> the piece on the source side? I _do_ believe that the line can't tell
> whether the impedance it's connected to is a load right there, or the
> impedance presented by another length of line, so it should be obvious
> from that what I believe the line must be connected to, to get rho=0.
>
> Cheers,
> Tom

Contrary to popular belief, you will still have reflections going
from Zo=50-j5 to Zload=50-j5.

This is what impedance matching is all about: getting rid of the
reactance in the line and load, and making sure the resistive
impedances left are equivalent.

Only when Zload=Zo*, will this happen. I.E.: Zo=50-j5 and
Zload=50+j5.

If you plug these into Reflection Coefficient =

(Zload-Zo*)/(Zload-Zo)

Where * indicates conjugate, you will see that the reactances cancel to zero, and the numerator is zero.

This doesn't happen with the regular (Zload-Zo)/(Zload-Zo).

It almost time for me to leave this to others to prove to you, as the communication here is almost non-existant.

Slick

3926. Change the Subject Line When You Start a New Thread?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 21:54:16 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308221354.29e42481@posting.google.com>
Source record: 109870

Hello,

Some good activity on this NG, as usual. Lot's of fire
in the typing, i like it...

And i don't mind it when people off-spring a new thread from an
old one that is getting way to long to know where it is going,

But could you all please Change the Subject line when you do
this? It would make it easier to follow a particular argument.

Slick

3927. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 22:01:31 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308221401.55fafa94@posting.google.com>
Source record: 109871

Ah, thanks for the humor! The last couple days haven't been all that
wonderful, and some levity always helps.

Although there are cosines in Roy's example, I'd like to point out
that t does not stay zero all the time. Gee, surprise. But the
beauty of it is that it works just fine no matter what the waveform.
It doesn't need to be sinusoidal. Life can be easier when we don't
have to deal with differential equations all the time, and for sure we
electronics types have it very easy because our systems are generally
linear enough that we can assume linearity. Then we can take
advantage of things like transforms to resolve an arbitrary waveform
into sinusoids. And we get to sell lots of FFT-based signal analysis
equipment, but please buy more of it.

i=C*dv/dt+v*dC/dt
v=L*di/dt+i*dL/dt
v=i*R
power = v*i
energy = integral(power)dt

If you give me waveforms that are simple sinusoids, then of course my
calcs will have sinusoids in them, and there are a lot of nice
simplifications that leads to so that I can work out the answers in my
head. But the underlying model before the simplifications lets me do
it for any waveform, some easy and some rather difficult.

Cheers,
Tom

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f430920$1_4@corp.newsgroups.com>...
> Roy Lewallen wrote:
> > Goodness, didn't you do this at Texas A & M?
> > = 100 cos(2wt + 90).
>
> I thought you said there wasn't a cos(90) in there anywhere.
> If t=0, there's a cos(90) term.
>
> > What you have here is a sinusoidal waveform of radian frequency 2w,
> > centered about zero. Cos(90) is zero. The result above, the power, or
> > rate of energy transfer, is not zero. It shows that energy moves back
> > and forth at twice the rate of v and i, and that the same amount that
> > moves one way moves back on the alternating cycle.
>
> And exactly why is that information important?

3928. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 22:04:37 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F469375.BB7FD3EE@uci.edu>
Source record: 109872

Roy Lewallen wrote:
>
> Jim Kelley wrote:
> >
> > Roy Lewallen wrote:
> >
> >>In circuits involving purely sinusoidal V and I of the same frequency,
> >>the power waveform is actually a true sinusoidal function, except with a
> >>D.C. offset. It doesn't at all resemble the output from a full wave
> >>rectifier. The D.C. offset is the average value, and the frequency of
> >>the sine portion is twice the frequency of V or I.
> >
> >
> > Yes, thanks Roy. I've had absolute value circuits on the brain all this
> > week.
> >
> > Nevertheless, instantaneous power is simply the instantaneous amplitude
> > at time t of the (sin^2(wt))/2 function.
> >
> > 73, ac6xg
>
> Only if the voltage and current are in phase. Here's the more general
> solution (cosines could be used instead with equal validity):

You seem to be looking for an argument any way you can, Roy. ;-)
Sin^2(wt)/2 is the general form of any equation with the shape you
described in your previous post. Furthermore, instantaneous power can
be evaluated at any time t, irrespective of relative phase. The point
is simply that instantaneous power isn't necessarily zero as a result of
delta t's approaching zero.

> Given that v = V * sin(wt + phiv)
> i = I * sin(wt + phii)
>
> Then p = v * i = VI * sin(wt + phiv) * sin(wt + phii)
>
> The product of the sines can be transformed via a simple trig identity
> to give
>
> p = VI * 1/2[cos(phiv - phii) - cos(2wt + phiv + phii)]
>
> The first term in the brackets is D.C. -- it's time-independent. The
> second term is a pure sine wave. So the result is a pure sine wave with
> a D.C. offset.
>

> I've described the meaning and significance of the power waveform in at
> least one earlier posting on this newsgroup. If anyone is interested who
> can't find it on Google, I'll look it up and post the subject and date.

Yes. It's also in my first year college electronics book.

Thanks and 73,

AC6XG

3929. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 22:28:49 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkd68ur6qhue1f@corp.supernews.com>
Source record: 109873

I apologize if my response seemed argumentative. It wasn't intended that way. Certainly, sin^2(wt) has the same shape as the power waveform I derived -- the only difference is its fixed D.C. term. And I certainly agree that letting delta t approaching zero doesn't make any function of t become zero at that point. And just as the analysis I've presented is in your first year college electronics book, so is the point about delta t in everyone's high school or first semester college calculus book. But it's evident that some number of participants in this thread have either forgotten, never seen, or never understood those basic principles. And quite a few people either don't have any textbooks, don't understand them, or are unwilling to open and read them. Hence the postings containing information that you or I could find in moments.

Roy Lewallen, W7EL

Jim Kelley wrote:
>
> You seem to be looking for an argument any way you can, Roy. ;-)
> Sin^2(wt)/2 is the general form of any equation with the shape you
> described in your previous post. Furthermore, instantaneous power can
> be evaluated at any time t, irrespective of relative phase. The point
> is simply that instantaneous power isn't necessarily zero as a result of
> delta t's approaching zero.
>
>
>>Given that v = V * sin(wt + phiv)
>> i = I * sin(wt + phii)
>>
>>Then p = v * i = VI * sin(wt + phiv) * sin(wt + phii)
>>
>>The product of the sines can be transformed via a simple trig identity
>>to give
>>
>> p = VI * 1/2[cos(phiv - phii) - cos(2wt + phiv + phii)]
>>
>>The first term in the brackets is D.C. -- it's time-independent. The
>>second term is a pure sine wave. So the result is a pure sine wave with
>>a D.C. offset.
>>
>>I've described the meaning and significance of the power waveform in at
>>least one earlier posting on this newsgroup. If anyone is interested who
>>can't find it on Google, I'll look it up and post the subject and date.
>
>
> Yes. It's also in my first year college electronics book.

>
> Thanks and 73,
>
> AC6XG

3930. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 23:14:34 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <jNScnUiWLtpCPtuiXTWJkg@comcast.com>
Source record: 109874

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308221323.4408923d@posting.google.com...
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<HYScnWdhZZQSoduiXTWJkA@comcast.com>...
> > "Dr. Slick" <radio913@aol.com> wrote in message
> > news:1d15af91.0308211822.2740b335@posting.google.com...
> > > That's what i thought. You've never designed anything in your
life.
> > >
> > >
> > > Slick
> >
> > I just don't buy into your BS. The one transmitter was for 6m SSB, and
was
> > good enough to work Alaska from FN20. The other was a 6m linear amp of
which
> > about 200 were built. Now, do you want to tell us who the hell you are?
> >
> > Tam/WB2TT
>
>
> Someone who has helped design more output matching networks than
> you, that's certain.
>
>
> Slick

I didn't *help* design anything. I designed the transmitter from mic input
to ant output.

Tam/WB2TT

3931. Re: Internal Resistance (?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-22 23:36:29 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <0Ox1b.228459$o%2.104725@sccrnsc02>
Source record: 109875

Nope! I'm not one of those tuner-uppers! I have a non-radiating carbon resistor immersed in a gallon of oil inside a metal enclosure.

I adjust my tuner with a whopping 0.02 watts from an MFJ 259B.

Darn INFERNAL Resistance! However it is possible to see the difference caused by bias differences if you have an amplifier. Tune for maximum output. Then reduce drive by 50%. You have to readjust the amplifier for maximum output. [Example there is a difference in tuning between 500 watts and 1000 watts output.]

DD, W1MCE
+ + +
Richard Clark wrote:

> On Fri, 22 Aug 2003 14:02:35 GMT, Dave Shrader
> <david.shrader@comcast.net> wrote:
>
>
>>A single number does not exist!! An average value for my voice
>>characteristics will be different from an average value with your voice
>>characteristics, etc.
>
>
> Hi Dave,
>
> Are you one of those who whistles, hums, and recites the Gettysburg
> Address into the mike while tuning up? Many on the band would offer
> you as an example of Infernal Resistance. ;-)
>
> 73's
> Richard Clark, KB7QHC

3932. Re: Antenna down tilt in pattern

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 00:26:00 UTC
From: antennas@yahoo.com
Message-ID: <e8be44e3.0308221626.7e4ccffa@posting.google.com>
Source record: 109876

YARG!! I have the CD and never even thought abuot looking in there,
do not know why, as I really like it.
Thanks for info I read the article.
Andrew VE8AE

Dave Shrader <david.shrader@comcast.net> wrote in message
news:<eUd1b.219110$o%2.101278@sccrnsc02>...
> ARRL Antenna Handbook, 18th Edition, Chapter 17 page 2.
>
> "Vertical-beam [antenna pattern] downtilt is generally produced by
> feeding the elements of a collinear array slightly out of phase with

> each other." [NOTE: Collinear not Yagi]
>
> See "L. Barrett, "Repeater Antenna Beam Tilting", Ham Radio, May 1983,
> pps 29-35. Correction issued Ham Radio, July 1983, p 80."
>
> All of above from ARRL Antenna Handbook.
>
> Deacon Dave, W1MCE
> + + +
>
> VE8AE Andrew wrote:
>
> > I was looking at a 2.4 GHz antenna that had 20 1/2 waves in phase.
> > Then there was the same antenna, almost, except it said it had a 3
> > degree downtilt to it. How would the antenna be made to give it this 3
> > degree downltilt? It stated it also had 20 1/2 waves to it also and
> > was same length overall.
> > Andrew VE8AE

3933. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 00:53:22 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F46BA9A.C8CA62C2@shaw.ca>
Source record: 109877

Ken Bessler wrote:
>
> What effect would a brick wall have on a HF antenna?
> I'm talking 1-2" distance from the bricks, folks. The
> wire used is 22 ga stranded insulated speaker wire.
> Now no lectures about power - I run QRP. :-) The
> station is well grounded to a copper baseboard heater
> pipe and all components have short runs (12" or less)
> of 1/4" braid line going to a common point. From there
> it's 1/4" braid (26" long) to the pipe. I can touch any
> part of the system while transmitting and see no change
> in SWR.
>
> I cut an inverted V 66'7" per leg 133'2" overall. It's fed
> with 12' of rg8x coax with a 6 turn 2-5/8" dia coil at the
> feedpoint. The apex of the antenna is roughly 25' up. The
> ends of the antenna are at chest height. The antenna is bent
> around the corner of my building 90 degrees (I'm in a
> corner unit). The last 8' of each leg bends again 90 degrees.
>
> The antenna resonates as follows:
> ============
> 2.130 2:1 swr
> 2.715 1:1 swr (flat)
> 3.620 2:1 swr
> ============
> 8.970 2:1 swr
> 9.210 1.8:1 swr
> 9.390 2:1 swr
> ============
> 12.230 2:1 swr
> 13.040 1.9:1 swr
> 13.850 2:1 swr
> ============
> 15.930 2:1 swr
> ============
> 20.970 2:1 swr
> 22.745 1.2:1 swr
> 24.520 2:1 swr
> ============
>
> If I figure 468/133.1666666667 I get 3.514.393 mhz
> for resonance How come the antenna is so far off?
> Could it be the height? Not that I'm complaining - I

> like the low resonance and my Z11 autotuner will take
> this antenna down to 1.8 mhz real easy. Although at
> that freq I expect the antenna will radiate a NVIS
> signal due to low HAAT.
>
> Any ideas???
>
> 72's de Ken KG0WX

I used to run a 40M dipole which lay along a rock wall 3 feet
off the ground. I cut it for the center of the band, laid it
out (held in place with a few bricks), and worked the world!

It was just a few bricks short of a full load! Seriously, though,
it worked well.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

3934. Re: HF Vertical design(s)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 01:16:34 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <RcedndXGONf4XduiXTWJkw@comcast.com>
Source record: 109878

Given a choice between mounting the vertical on the ground with many radials and putting it 20 feet up with four radials, which has the lower radiation angle? What are the other likely effects on performance - noise, RFI on the neighbors, etc.?

Tom, N3IJ

"Roy Lewallen" <w7el@eznec.com> wrote in message news:vkcmr4gc8k7l89@corp.supernews.com...
> For 20 meters, all you need is a piece of wire or tubing that's about
> 16-1/2 feet high (adjust as necessary). I've done it with aluminum
> tubing (you'll have to use aluminium, of course :)), with a wire hung
> vertically from a tree, and a wire spaced from a 2 X 4 inch or lighter
> piece of lumber with TV twinlead standoff insulators. Shouldn't run over
> ~10 or so, and it will work every bit as well as, or better than, any
> one you can buy -- on 20 meters. Feed directly with 50 ohm coax. If you
> mount it at ground level, bury up to a dozen or so wires extending
> radially outward from the antenna if possible. (I just stretch them
> along the ground, "stapling" down where necessary with a short piece of
> wire, and let the grass grow over them.) Make them as long as you can,
> but there's no point in making them any longer than about 20 feet. If
> you mount the antenna above ground, you can use fewer radials -- if the
> base is 20 feet up, four will be plenty. If the radials are above
> ground, you should make them pretty close to 16 - 1/2 feet long, and
> adjust if necessary to get an adequately good match.
>
> Roy Lewallen, W7EL
>
> MAS wrote:
> > Hi People,
> >
> > I have been looking around at "off the shelf" HF vertical antennas and
> > because of the price I am now considering home building one myself.
> >
> > The only HF antenna I have at the moment is a half size G5RV so there is
> > room for change ;-)
> >
> > I guess my main area of interest at the moment is 20m so the vertical
> > antenna would be mainly for that band.
> >
> > Can anyone point me in the direction of any good home brew designs to
save
> > me re-inventing the wheel so to speak?
> >

> > The antenna can be mounted anywhere from ground level to the top of a 20
ft
> > pole at the bottom of the garden. I will be running upto 100w into it
from
> > an FT-920 via it's built in ATU.
> >
> > Cost is only an issue in as much I begrudge paying £300 + for an off the
> > shelf unit so don't restrict your designs on that front..
> >
> > I am a bit of a dab hand with the tools too but have no fancy antenna
tuning
> > devices, so any design will need to be almost resonant from the off if
you
> > see what I mean.
> >
> > Here is hoping for some good proven designs.
> >
> > M.
> >
> >
> >
>

3935. Re: HF Vertical design(s)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 01:30:20 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vkdh03s6fk46d1@corp.supernews.com>
Source record: 109879

I have never had a vertical without RFI problems.
Quarter wave, half wave, ground or in the air. Until now.
But......
My BiggIR Fluidmotion vertical is on a 4000 foot metal fence and is about
200 feet from the shack (I live in the country).
So I'm not surprised the alarms don't go off.
I'm about to mount it on the 3500 sq ft Al roof and ground it well.
We shall see,
As far as inexpensive and effective on 20, build a resonant dipole and mount
it however you can.
As high as you can.
If you can go straight up, great.
Coaxial antennas come to mind as well.
You certainly can't beat simple wire antennas for cost-effectiveness.
73 es gud dx
H.
NQ5H

"Tom Coates" <tecoates@comcast.net> wrote in message
news:RcedndXGONf4XduiXTWJkw@comcast.com...
> Given a choice between mounting the vertical on the ground with many
radials
> and putting it 20 feet up with four radials, which has the lower radiation
> angle? What are the other likely effects on performance - noise, RFI on
the
> neighbors, etc.?
>
> Tom, N3IJ
>
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vkcmr4gc8k7l89@corp.supernews.com...
> > For 20 meters, all you need is a piece of wire or tubing that's about
> > 16-1/2 feet high (adjust as necessary). I've done it with aluminum
> > tubing (you'll have to use aluminium, of course :)), with a wire hung
> > vertically from a tree, and a wire spaced from a 2 X 4 inch or lighter
> > piece of lumber with TV twinlead standoff insulators. Shouldn't run over
> > ?10 or so, and it will work every bit as well as, or better than, any
> > one you can buy -- on 20 meters. Feed directly with 50 ohm coax. If you
> > mount it at ground level, bury up to a dozen or so wires extending
> > radially outward from the antenna if possible. (I just stretch them
> > along the ground, "stapling" down where necessary with a short piece of
> > wire, and let the grass grow over them.) Make them as long as you can,
> > but there's no point in making them any longer than about 20 feet. If
> > you mount the antenna above ground, you can use fewer radials -- if the

> > base is 20 feet up, four will be plenty. If the radials are above
> > ground, you should make them pretty close to 16 - 1/2 feet long, and
> > adjust if necessary to get an adequately good match.
> >
> > Roy Lewallen, W7EL
> >
> > MAS wrote:
> > > Hi People,
> > >
> > > I have been looking around at "off the shelf" HF vertical antennas and
> > > because of the price I am now considering home building one myself.
> > >
> > > The only HF antenna I have at the moment is a half size G5RV so there
is
> > > room for change ;-)
> > >
> > > I guess my main area of interest at the moment is 20m so the vertical
> > > antenna would be mainly for that band.
> > >
> > > Can anyone point me in the direction of any good home brew designs to
> save
> > > me re-inventing the wheel so to speak?
> > >
> > > The antenna can be mounted anywhere from ground level to the top of a
20
> ft
> > > pole at the bottom of the garden. I will be running upto 100w into it
> from
> > > an FT-920 via it's built in ATU.
> > >
> > > Cost is only an issue in as much I begrudge paying £300 + for an off
the
> > > shelf unit so don't restrict your designs on that front..
> > >
> > > I am a bit of a dab hand with the tools too but have no fancy antenna
> tuning
> > > devices, so any design will need to be almost resonant from the off if
> you
> > > see what I mean.
> > >
> > > Here is hoping for some good proven designs.
> > >
> > > M.
> > >
> > >
> > >
> >
>
>

3936. Re: HF Vertical design(s)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 02:07:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkdj341lh6o09c@corp.supernews.com>
Source record: 109880

Radiation angle is essentially the same for both. Mounting it higher will make it more immune to losses from low, nearby objects. An elevated one will also probably receive and deliver less interference -- provided you keep the radials well away from, and not parallel to, mains, telephone, and other wiring.

Roy Lewallen, W7EL

Tom Coates wrote:
> Given a choice between mounting the vertical on the ground with many radials
> and putting it 20 feet up with four radials, which has the lower radiation
> angle? What are the other likely effects on performance - noise, RFI on the
> neighbors, etc.?
>
> Tom, N3IJ

3937. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 02:30:42 UTC
From: pic_nic@cox.net
Message-ID: <bfd8d8ce.0308221830.3c86b501@posting.google.com>
Source record: 109881

What about mismatch loss?

Assuming 50 ohm coax, the vee should be closer to 50 ohms.

The 73 ohms of the dipole would result in a small mismatch loss.

One could droop the dipole down about two-thirds along the way to get
close to 50 ohms - at least that's what my EZNEC says - been a user
since the first version.

Roy Lewallen <w7el@eznec.com> wrote in message news:<vkb4844h52sgbf@corp.supernews.com>...
> Since this isn't true except under particular circumstances, I'd hate to
> see it become an unqualified rule of thumb. For example, here are some
> values for the total ground loss from an inverted vee and dipole, with
> the apex of the inverted vee the same as the height of the dipole.
> Modeling was done at 14 MHz over average ground.
>
> Ht (ft) Inv Vee Dipole
> 12 5.77 2.05
> 20 2.08 1.18
> 30 1.47 1.18
> 40 1.65 1.4
> 45 1.72 1.39
> 50 1.63 1.27
>
> As you can see, the difference is less than 1 dB except for the lowest
> height.
>
> At an apex height of 12 feet, the ends of the inverted vee were about 2
> inches off the ground, so that was as low as it could have been
> constructed with a 90 degree apex angle. Interestingly, the loss of the
> inverted vee reached a maximum at 45 feet. The dipole did likewise, at
> about
40 feet.
>
> I mentioned that an "equivalent height" for a dipole is 1/3 of the way
> out from the center. This is based on the current distribution, and when
> a dipole is put at that height, it has about the same elevation pattern
> as the inverted vee. Putting a dipole at the "equivalent height" of the
> lowest inverted vee (i.e. 8 foot high dipole) shows 3.55 dB ground loss,
> still 2 dB greater than the inverted vee at 12 feet.
>
> Scaling for 3.5 MHz shows 4.5 dB for an inverted vee with apex at 48
> feet and ends about 9 inches above the ground, vs 1.35 dB for a dipole
> at 48 feet. So the difference is just slightly less than the

> corresponding antennas at 14 MHz.
>
> My conclusion is that the rule holds only for antennas very close to the
> ground. But the actual difference will depend on the frequency and
> ground charactersitics as well as the inverted vee's apex angle.
>
> Anyone wanting to compare particular antennas can easily do so with
> EZNEC. The free demo program is adequate. Simply specify Real, High
> Accuracy ground and a 3D plot. Make sure wire loss is zero and there are
> no lossy (resistive) loads in the model. Then run the 3D plot and look
> at the "average gain". It'll represent the total ground loss. For the
> values above, I used example files BYDipole.EZ and BYVee.EZ. In both
> models, I changed the ground type to Real, High Accuracy, the ground
> description to Average (0.005 S/m conductivity, 13 dielectric constant),
> and the plot type to 3D. Height was then changed as required using the
> Change Height feature in the Wires Window.
>
> Although this is academically interesting, I don't see any immediate
> practical use for the information. It doesn't tell you how strong a
> signal your antenna will produce in a given direction, which is usually
> what you want to know.
>
> Roy Lewallen, W7EL
>
> Reg Edwards wrote:
> > "Matthew and Wendy Plante" wrote -
> >
> >>Is there a significant difference in gain between an
> >>inverted Vee and a horizontal dipole antenna?
> >>
> >
> > ==========
> >
> > Gain is not an appropriate term to use in a performance comparison.
> >
> > The power radiating efficiency of an inverted-vee is typically 3 to 5
> > decibels worse than a horizontal half-wave dipole at the same height as the
> > apex of the vee. Less than an S-unit. This is due entirely to extra loss
> > induced in the soil under the antenna, the average height of the wire in a
> > vee being roughly half the height of the dipole.
> > . . .

3938. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 02:46:37 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308221846.2b50d0a8@posting.google.com>
Source record: 109882

Oh, my! I really should be changing the name on the thread, as you suggest, to something about viewing r.r.a.a. as a wonderful source of humor! Thank you very much for your contribution.

radio913@aol.com (Dr. Slick) wrote in message news:<1d15af91.0308221348.2a10c454@posting.google.com>...

> Contrary to popular belief, you will still have reflections going
> from Zo=50-j5 to Zload=50-j5.

So, you can't even connect a line to another piece of the same impedance line without getting reflections? :-) Wonderful!
>
> This is what impedance matching is all about: getting rid of the
> reactance in the line and load, and making sure the resistive
> impedances left are equivalent.
>
> Only when Zload=Zo*, will this happen. I.E.: Zo=50-j5 and
> Zload=50+j5.
>
> If you plug these into Reflection Coefficient =
>
> (Zload-Zo*)/(Zload-Zo)
>
> Where * indicates conjugate, you will see that the reactances cancel
> to zero, and the numerator is zero.

Um, you should try that in your equation above for Zo=50-j5 and Zload=50-j4. What magnitude rho do you get for that, hmmm?? Oh, this is great fun!
>
> This doesn't happen with the regular (Zload-Zo)/(Zload-Zo).

No, of course that one never gets larger than unity. Nor does it get smaller. It doesn't evaluate well at Zload=Zo, but we might surmise it stays unity there too.
>
> It almost time for me to leave this to others to prove to you, as
> the communication here is almost non-existant.

Seems to be, indeed, though you never know. The lurkers may well have learned a thing or two. The one reference you did post now disavows the form you posted. You've been invited to do some simple math that would show you the truth and you apparently refuse. You are posting any number of ideas contrary to what's easy to show from fundamentals and what's in a large number of published papers and texts and what

has been posted here by many contributors recently and over the years. It's been done with both symbolic math and specific examples. Several inconsistencies demonstrate clearly that Vr/Vf does NOT equal (Zload-Zo*)/(Zload+Zo), and of course most certainly a (Zload-Zo) denominator is going to get you quickly into trouble. The inconsistencies have been pointed out here by me and by others, but apparently you've missed them. I'm sure it's apparent to most lurking where the communications is breaking down. But the formulas you posted above have given me a good laugh tonight, at least! Thanks!

Cheers,
Tom

3939. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 02:50:51 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <b4mdnZ2_aZ-jStuiXTWJiA@ctc.net>
Source record: 109883

> What about mismatch loss?
>
> Assuming 50 ohm coax, the vee should be closer to 50 ohms.
>
> The 73 ohms of the dipole would result in a small mismatch loss.
>

The loss in the mismatch of 50 to 75 ohms is not worth worring about .

3940. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 03:09:57 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f46ddb0_3@news1.prserv.net>
Source record: 109885

Abdullah:

I appreciate that you are not an EMC expert, nor a top expert in antennas. However, I would expect anyone with a basic electrical engineering, electronics, or physics education to recognize the following: The antenna is not assembled according to any known design. Thus, it will not exhibit performance necessary to conduct and document traceable measurements. Neither the forward gain nor the shape of the pattern is known to the necessary accuracy. Characterizing what amounts to a random collection of metal will be more expensive and time consuming than to simply discard the incorrect antenna and purchase one which is correctly assembled. Will your lab be required to pass an inspection by a National Agency before your measurements will be accepted? With the antenna assembled as you describe, it will not pass inspection.

All of the above comments are based on information which should be available to and known by an undergraduate engineer in any of the several disciplines, and that is the reason for my original comment.

--
Crazy George
Remove NO and SPAM from return address
"Abdullah Eyles" <agulesin@hotmail.com> wrote in message
news:62155ce7.0308212150.7a1d87@posting.google.com...
> Richard Clark <kb7qhc@comcast.net> wrote in message
news:<u8s9kv88dvlnk1ihhphk68b46tli63fun6@4ax.com>...
> >
> > Ask them for a refund, and drop them from your vendors list.
> >
> > What effect did it have? Sorry to say this, but it sounds like you
> > are going to spend far more money doing it yourself than if you had
> > simply farmed out the job to a real lab that was registered with the
> > FCC.
> >
>
> Our company is *setting up* a lab that will provide an EMC testing
> service for other companies. We are in Turkey, so I don't think FCC
> covers here... (and it's not as easy as "drop them from your vendor
> list", there aren't that many companies or specialists that we can
> "pick and choose")
>
> I wish someone would answer the question "what would the effect of
> this mistake be?" If there is no effect, then I'm wasting my (and
> your) time... Thanks!

3941. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 03:17:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkdn5sogot4d3e@corp.supernews.com>
Source record: 109884

Please go to http://groups.google.com, and search this newsgroup for postings I've made which contain the phrase "mismatch loss". Hopefully, that will explain it.

Roy Lewallen, W7EL

picnic wrote:
> What about mismatch loss?
>
> Assuming 50 ohm coax, the vee should be closer to 50 ohms.
>
> The 73 ohms of the dipole would result in a small mismatch loss.
>
> One could droop the dipole down about two-thirds along the way to get
> close to 50 ohms - at least that's what my EZNEC says - been a user
> since the first version.

3942. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 03:48:18 UTC
From: richardharrison@webtv.net
Message-ID: <13064-3F46E402-8@storefull-2317.public.lawson.webtv.net>
Source record: 109886

Cecil, W5DXP wrote:
"If dt=0, then time stands still,---."

Yes, it is a spot frozen in time, a snapshot of slope at one instant.

What really interests us is average power over a half cycle or more, not instantaneous power, energy`s rate of change, or power`s rate of change.

Best regards, Richard Harrison, KB5WZI

3943. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 04:01:42 UTC
From: richardharrison@webtv.net
Message-ID: <13061-3F46E726-130@storefull-2317.public.lawson.webtv.net>
Source record: 109887

Jim Kelley wrote:
"It may not be a terribly useful thing to know, but it isn`t a
ficticious quantity."

Agreed. Instantaneous power is real. My point is: Work is power x time.
If time is zero, no work is done.

Best regards, Richard Harrison, KB5WZI

3944. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 04:19:56 UTC
From: tdonaly@aol.com
Message-ID: <20030823001956.06260.00000283@mb-m19.aol.com>
Source record: 109889

>
>
>I apologize if my response seemed argumentative. It wasn't intended that
>way. Certainly, sin^2(wt) has the same shape as the power waveform I
>derived -- the only difference is its fixed D.C. term. And I certainly
>agree that letting delta t approaching zero doesn't make any function of
>t become zero at that point. And just as the analysis I've presented is
>in your first year college electronics book, so is the point about delta
>t in everyone's high school or first semester college calculus book. But
>it's evident that some number of participants in this thread have either
>forgotten, never seen, or never understood those basic principles. And
>quite a few people either don't have any textbooks, don't understand
>them, or are unwilling to open and read them. Hence the postings
>containing information that you or I could find in moments.
>
>Roy Lewallen, W7EL

Cecil seemed to indicate that he thought delta t going to zero meant that
t was perpetually zero. I know he knows better than that.
73,
Tom Donaly, KA6RUH

3945. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 04:20:06 UTC
From: pic_nic@cox.net
Message-ID: <bfd8d8ce.0308222020.8990ddf@posting.google.com>
Source record: 109888

I checked - 50 ohm to 75 ohm is not a big deal. The SWR is 1.46,
resulting in 14 dB of mismatch loss, which means in a 100W system only
4 watts is reflected back.
So the fact that the Vee is closer to 50 ohms is not a biggie.

Roy Lewallen <w7el@eznec.com> wrote in message news:<vkb4844h52sgbf@corp.supernews.com>...
> Since this isn't true except under particular circumstances, I'd hate to
> see it become an unqualified rule of thumb. For example, here are some
> values for the total ground loss from an inverted vee and dipole, with
> the apex of the inverted vee the same as the height of the dipole.
> Modeling was done at 14 MHz over average ground.
>
> Ht (ft) Inv Vee Dipole
> 12 5.77 2.05
> 20 2.08 1.18
> 30 1.47 1.18
> 40 1.65 1.4
> 45 1.72 1.39
> 50 1.63 1.27
>
> As you can see, the difference is less than 1 dB except for the lowest
> height.
>
> At an apex height of 12 feet, the ends of the inverted vee were about 2
> inches off the ground, so that was as low as it could have been
> constructed with a 90 degree apex angle. Interestingly, the loss of the
> inverted vee reached a maximum at 45 feet. The dipole did likewise, at
> about 40 feet.
>
> I mentioned that an "equivalent height" for a dipole is 1/3 of the way
> out from the center. This is based on the current distribution, and when
> a dipole is put at that height, it has about the same elevation pattern
> as the inverted vee. Putting a dipole at the "equivalent height" of the
> lowest inverted vee (i.e. 8 foot high dipole) shows 3.55 dB ground loss,
> still 2 dB greater than the inverted vee at 12 feet.
>
> Scaling for 3.5 MHz shows 4.5 dB for an inverted vee with apex at 48
> feet and ends about 9 inches above the ground, vs 1.35 dB for a dipole
> at 48 feet. So the difference is just slightly less than the
> corresponding antennas at 14 MHz.
>
> My conclusion is that the rule holds only for antennas very close to the
> ground. But the actual difference will depend on the frequency and
> ground charactersitics as well as the inverted vee's apex angle.

>
> Anyone wanting to compare particular antennas can easily do so with
> EZNEC. The free demo program is adequate. Simply specify Real, High
> Accuracy ground and a 3D plot. Make sure wire loss is zero and there are
> no lossy (resistive) loads in the model. Then run the 3D plot and look
> at the "average gain". It'll represent the total ground loss. For the
> values above, I used example files BYDipole.EZ and BYVee.EZ. In both
> models, I changed the ground type to Real, High Accuracy, the ground
> description to Average (0.005 S/m conductivity, 13 dielectric constant),
> and the plot type to 3D. Height was then changed as required using the
> Change Height feature in the Wires Window.
>
> Although this is academically interesting, I don't see any immediate
> practical use for the information. It doesn't tell you how strong a
> signal your antenna will produce in a given direction, which is usually
> what you want to know.
>
> Roy Lewallen, W7EL
>
> Reg Edwards wrote:
> > "Matthew and Wendy Plante" wrote -
> >
> >>Is there a significant difference in gain between an
> >>inverted Vee and a horizontal dipole antenna?
> >>
> >
> > ==========
> >
> > Gain is not an appropriate term to use in a performance comparison.
> >
> > The power radiating efficiency of an inverted-vee is typically 3 to 5
> > decibels worse than a horizontal half-wave dipole at the same height as the
> > apex of the vee. Less than an S-unit. This is due entirely to extra loss
> > induced in the soil under the antenna, the average height of the wire in a
> > vee being roughly half the height of the dipole.
> > . . .

3946. Re: 40 Foot Lengths of Irrigation Tubing - FREE

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 04:23:57 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308222023.2aeca9d@posting.google.com>
Source record: 109890

Where I grew up and became a ham, there wasn't a lot of money floating around, and most of the hams made do with whatever they could for rigs and antennas. A favorite antenna was a 40 foot length of 4" irrigation pipe, vertical, fed against some ground radials. It works out to very nearly 5/8 wave on 20 meters, and isn't hard to load on 40 and 15. Most of them did quite well with it. Maybe that will give some youngster in your area some ideas. Your free offer is most of what they'd need for that sort of antenna.

Cheers,
Tom

kelly@dvol.com (Brian Kelly) wrote in message news:<d22b54c3.0308221123.f56795a@posting.google.com>...
> I have two unused forty foot lengths of aluminum irrigation tubing I
> need to unload. One is 4" in diameter and the other is 3" in diameter.
> Wall thickneses are around 0.060". A number of years ago I built
> several fullsize 40M yagis for fellow club members and I used this
> tubing for the booms, etc. I've been storing these "leftover" tubes
> ever since but now I have to either find a home for them or scrap
> them. I'll give them away gratis to anyone who will pick them up. The
> 4" tube would make a nice light-duty easy-up guyed tower for instance.
> The location is Clifton Heights PA in the southeastern suburbs of
> Philadelphia. E-mail w3rv to <kelly@dvol.com>

3947. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 04:31:05 UTC
From: tdonaly@aol.com
Message-ID: <20030823003105.06260.00000285@mb-m19.aol.com>
Source record: 109891

>
>
>Seems to be, indeed, though you never know. The lurkers may well have
>learned a thing or two. The one reference you did post now disavows
>the form you posted. You've been invited to do some simple math that
>would show you the truth and you apparently refuse. You are posting
>any number of ideas contrary to what's easy to show from fundamentals
>and what's in a large number of published papers and texts and what
>has been posted here by many contributors recently and over the years.
> It's been done with both symbolic math and specific examples.
>Several inconsistencies demonstrate clearly that Vr/Vf does NOT equal
>(Zload-Zo*)/(Zload+Zo), and of course most certainly a (Zload-Zo)
>denominator is going to get you quickly into trouble. The
>inconsistencies have been pointed out here by me and by others, but
>apparently you've missed them. I'm sure it's apparent to most lurking
>where the communications is breaking down. But the formulas you
>posted above have given me a good laugh tonight, at least! Thanks!
>
>Cheers,
>Tom

When a fine engineer, with a good education and a distinguished
career, stoops to argue with an anonymous fellow who doesn't
have a firm grasp of even the most basic ideas of wave mechanics,
the result is bound to be a certain amount of frustration. You might
want to ask yourself, Tom, whether Slick is arguing in good faith,
or whether he has other motives.
73,
Tom Donaly, KA6RUH

3948. Re: Re-Normalizing the Smith Chart (Changing the SWR into

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 05:19:54 UTC
From: tdonaly@aol.com
Message-ID: <20030823011954.06296.00000276@mb-m19.aol.com>
Source record: 109892

>
>Jim Kelley wrote:
>"It may not be a terribly useful thing to know, but it isn`t a
>ficticious quantity."
>
>Agreed. Instantaneous power is real. My point is: Work is power x time.
>If time is zero, no work is done.
>
>Best regards, Richard Harrison, KB5WZI
>

Is the rate of doing work zero at all instances of time? Nope.
Power is the time rate of change for doing work. It's supposed to be
important to know the formula for finding the instantaneous
rate of doing work so you can ultimately find the average
rate. Maybe you think this is unimportant. I wonder why
textbook authors think it is?
73,
Tom Donaly, KA6RUH

3949. Re: 40 Foot Lengths of Irrigation Tubing - FREE

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 05:28:13 UTC
From: gmz79@aol.comnospam
Message-ID: <20030823012813.21868.00000828@mb-m07.aol.com>
Source record: 109893

```
>kelly@dvol.com (Brian Kelly) wrote in message
>news:<d22b54c3.0308221123.f56795a@posting.google.com>...
>> I have two unused forty foot lengths of aluminum irrigation tubing I
>> need to unload. One is 4" in diameter and the other is 3" in diameter.
>> Wall thickneses are around 0.060". A number of years ago I built
>> several fullsize 40M yagis for fellow club members and I used this
>> tubing for the booms, etc. I've been storing these "leftover" tubes
>> ever since but now I have to either find a home for them or scrap
>> them. I'll give them away gratis to anyone who will pick them up. The
>> 4" tube would make a nice light-duty easy-up guyed tower for instance.
>> The location is Clifton Heights PA in the southeastern suburbs of
>> Philadelphia. E-mail w3rv to <kelly@dvol.com>
>--------------------------------------------------------------------------
--------------
Sure wish I lived closer to Philly.
Greg Z
to thine own sound be true
```

3950. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 06:53:15 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <vbE1b.13$jY2.1@newsread1.news.atl.earthlink.net>
Source record: 109894

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308221135.10f4e992@posting.google.com...
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:<LJc1b.5707$sV.899@newsread1.news.atl.earthlink.net>...
> > Roy:
> >
> > [snip]
> > "Roy Lewallen" <w7el@eznec.com> wrote in message
> > news:vka3j2sqm7trcc@corp.supernews.com...
> > > One more thing. I've never seen that conjugate formula for voltage
> > > reflection coefficient and can't imagine how it might have been
derived.
> > > I've got a pretty good collection of texts, and none of them show such
a
> > > thing.
> > [snip]
> >
> > You are absolutely correct Roy, that formula given by "Slick" is just
plain
> > WRONG!
> >
> > rho = (Z - R)/(Z + R)
> >
> > Always has been, always will be.
> >
>
>
> As long as they are all purely real. Roy disagrees even when he
> is wrong, because too many people read this NG, and it might make him
> look bad (i.e., Not the All-Knowing Guru he pretends to be).
>
>
>
>
> > Where does that "Slick" guy get his information? And where does "Slick"
get
> > off with all of his "potifications"??? I dunno... *He* thinks "Besser",
> > "Pozar" and
> > ARRL are authoritative sources for transmission line technology!!!
> >
>
>
> Bwa! HAah! Much, much, MUCH more than you will ever be!
>

>
> > Me?
> >
> > I have made a living as a professional Engineer designing transmission
> > equipment over
> > the past four decades, currently more than $4BB gross shipped to world
wide
> > markets,
> > where the Zo I used is neither real, nor a constant!
> >
>
> I feel sorry for your customers...
>
>
>
> > And what is more... I have never consulted any of those three
authorities
> > referenced by
> > "Slick". I certainly don't think of them as being authoritative,
"cream
> > skimmers"
> > perhaps, but not certainly not authoritative.
> >
>
> Dr. Besser kicks your ass backwards when it comes to RF knowledge.
>
> And the ARRL is extremely well known. Pozar not so much, but the
> guy is out there on the PhD level. I don't give a Sh** who you think
> is an authority.
>
> Look them up, they have way more credentials than either you or I.
>
>
> > I believe that "Slick" has gotta stop "pontificating" and start reading
in
> > better circles...
> > much better!
>
>
> Much better than the likes of you, then yes, you would certainly
> be correct!
>
> The conjugate formula is correct. If you believe in cancellation
> of reactance. Why else would the magnitude rho (numerator of
> Reflection Coefficient) be zero when Zload=Zo*???
>
>
> Slick

3951. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 07:18:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <6zE1b.24$jY2.3@newsread1.news.atl.earthlink.net>
Source record: 109895

Slick:

[snip]
> > [snip]
> >
> > You are absolutely correct Roy, that formula given by "Slick" is just
plain
> > WRONG!
> >
> > rho = (Z - R)/(Z + R)
> >
> > Always has been, always will be.
[snip]

After consideration, I must agree with Slick.

Slick is RIGHT and I was WRONG!

Slick please accept my apologies!!! I was wrong, and I admit it!

Indeed, the correct formula for the voltage reflection coefficient "rho"
when computed using a "reference impedance" R, which is say the, perhaps
complex, internal impedance R = r + jx of a generator/source which is loaded
by a perhaps complex load impedance Z = ro + j xo must indeed be:

rho = (Z - conj(R))/(Z + conj(R)) = (Z - r + jx)/(Z + r - jx)

For indeed as Slick pointed out elsewhere in this thread, how else will the
reflected voltage equal zero when the load is a conjugate match to the
generator.

Slick thanks for directing the attention of this "subtlety" to the
newsgroup, and again...

Slick, please accept my apologies, I was too quick to criticize!

Good work, and lots of patience... :-)

Regards,

--
Peter K1PO
Indialantic By-the-Sea, FL.

3952. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 11:19:12 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <Q4l1b.235636$uu5.45407@sccrnsc04>
Source record: 109896

GEE!!

If dV/dt = 0 then I must have maximum voltage. This has meaning.

Hmmm ... if dP/dt = 0 then I must have maximum 'PEAK' power. This might
have meaning IF I splatter all over the band. But for SWR purposes it
means nothing ... I think ... am I confused?

Deacon Dave, W1MCE
+ + +

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "If dt=0, then time stands still,---."
>
> Yes, it is a spot frozen in time, a snapshot of slope at one instant.
>
> What really interests us is average power over a half cycle or more, not
> instantaneous power, energy`s rate of change, or power`s rate of change.
>
> Best regards, Richard Harrison, KB5WZI
>

3953. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 11:22:08 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi7ip0cpd1@titan.btinternet.com>
Source record: 109897

```
> > > I have made a living as a professional Engineer designing transmission
> > > equipment over
> > > the past four decades, currently more than $4BB gross shipped to world
> wide
==============================

There's an old adage "With radio any bloody thing will work".
```

3954. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 11:25:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkejpe3lp54c3a@corp.supernews.com>
Source record: 109898

Let's run a quick calculation as Tom has suggested several times.

Consider a transmission line with Z0 = 50 - j10 ohms connected to a 50 + j0 ohm load. As I hope will be evident, it doesn't matter what's connected to the source end of the line or how long it is. We'll look at the voltage V and current I at a point within the cable, but very, very close to the load end. Conditions are steady state. When numerical V or I is required, assume it's RMS.

I hope we can agree of the following. If not, it's a waste of time to read the rest of the analysis.

1. Vf / If = Z0, where Vf and If are the forward voltage and current respectively.

2. Vr / -Ir = Z0, where Vr and Ir are the reverse voltage and current respectively. The minus sign is due to my using the common definition of positive Ir being toward the load. (If this is too troublesome to anyone, let me know, and I'll rewrite the equations with positive Ir toward the source.)

3. Gv = Vr / Vf, where Gv is the voltage reflection coefficient. This is the usual definition. Likewise,

4. Gi = Ir / If

5. V = Vf + Vr

6. I = If + Ir

Ok so far?

Combine 1 and 2 to get

7. Vf / If = -(Vr / Ir) => Vr / Vf = -(Ir / If)

From 3, 4, and 7,

8. Gv = -Gi

From 3 and 5,

9. V = Vf(1 + Gv)

and similarly from 4 and 6,

10. I = If(1 + Gi)

From 8 and 10,

11. I = If(1 - Gv)

Dividing 9 by 10,

12. V / I = (Vf / If) * [(1 + Gv) / (1 - Gv)]

Combining 12 with 1,

13. V / I = Z0 * [(1 + Gv) / (1 - Gv)]

And finally we have to observe that, by inspection, the voltage V just inside the line has to equal the voltage Vl just outside the line and, by Kirchoff's current law, the current I just inside the line has to equal the current Il just outside the line:

14. Vl = V and Il = I, where Vl and Il are the voltage and current at the load.

From 13 and 14, and noting that Zl = Vl / Il, then,

15. Zl = Z0 * [(1 + Gv) / (1 - Gv)]

Now let's test the formulas for Gv that have been presented. We have three to choose from:

A. The one just posted by Peter, (Zl - Z0conj) / (Zl + Z0conj)

B. Slick's, (Zl - Z0conj) / (Zl + Z0)

C. The one in all my texts and used by practicing engineers, (Zl - Z0) / (Zl + Z0)

We'll plug the numbers into Peter's (A) first, giving us:

Gv = (50 - 50 - j10) / (50 + 50 + j10) = -j10 / (100 + j10) = -0.009901 - j0.09901

Plugging this into the right side of 15, we get:

Zl = 46.15 -j19.23

This obviously isn't correct -- Zl is known to be 50 + j0.

Let's try Slick's (B):

Gv = (50 - 50 - j10) / (50 + 50 - j10) = -j10 / (100 - j10) = 0.009901 - j0.09901

from which we calculate, from 15,

Zl = 48.00 - j20.00

Again, obviously not right.

Finally, using the universally accepted formula (C):

Gv = (50 - 50 + j10) / (50 + 50 - j10) = j10 / (100 - j10) = -0.009901 + j0.09901

from which, from 15, we get

Zl = 50.00 + j0

This is the value we know to be Zl. Getting the correct result for one numerical example does *not* prove that an equation is correct. However, getting an incorrect result for even one numerical example *does* prove that an equation isn't correct. So we can conclude that variations A and B aren't correct.

Actually, the accepted formula (C) can be derived directly from equation 15, so if all the steps to that point are valid, so is the accepted formula.

Why aren't Peter's or Slick's formulas correct? The real reason is that they aren't derived from known principles by an orderly progression of steps like the ones above. There's simply no way to get from known voltage and current relationships to the conjugate equations. They're plucked from thin air. That's simply not adequate or acceptable for scientific or engineering use. (I challenge anyone convinced that either of those equations is correct to present a similar development showing why.)

What about the seemingly sound logic that the accepted formula doesn't work for complex Z0 because it implies that a conjugate match results in a reflection? The formula certainly does imply that. And it's a fact -- a conjugate match guarantees a maximum transfer of power for a given source impedance. But it doesn't guarantee that there will be no reflection. We're used to seeing the two conditions coincide, but that's just because we're used to dealing with a resistive Z0, or at least one that's close enough to resistive that it's a good approximation. The fact that the conditions for zero reflection and for maximum power transfer are different is well known to people accustomed to dealing with transmission lines with complex Z0.

But doesn't having a reflection mean that some power is reflected and doesn't reach the load, reducing the load power from its maximum possible value? As you might know from my postings, I'm very hesitant to deal with power "waves". But what's commonly called forward power doesn't stay constant as the load impedance is changed, nor does the forward voltage. So it turns out that if you adjust the load for a conjugate match, there is indeed reflected voltage, and "reflected power". But the forward voltage and power are greater when the load is Z0conj than when Zl = Z0 and no reflection takes place -- enough greater that maximum power transfer occurs for the conjugate match, with a reflection present.

I'd welcome any corrections to any statements I've made above, any of the equations, or the calculations. The calculations are particularly subject to possible error, so should undergo particular scrutiny. I'll be glad to correct any errors. Anyone who disagrees with the conclusion is invited and encouraged to present a similar development, showing the derivation of the alternate formula and giving numerical results from an example. That's how science, and good engineering, are done. And what it

takes to convince me.

Roy Lewallen, W7EL

Peter O. Brackett wrote:
> Slick:
>
> [snip]
>
>>>[snip]
>>>
>>>You are absolutely correct Roy, that formula given by "Slick" is just
>
> plain
>
>>>WRONG!
>>>
>>>rho = (Z - R)/(Z + R)
>>>
>>>Always has been, always will be.
>
> [snip]
>
> After consideration, I must agree with Slick.
>
> Slick is RIGHT and I was WRONG!
>
> Slick please accept my apologies!!! I was wrong, and I admit it!
>
> Indeed, the correct formula for the voltage reflection coefficient "rho"
> when computed using a "reference impedance" R, which is say the, perhaps
> complex, internal impedance R = r + jx of a generator/source which is loaded
> by a perhaps complex load impedance Z = ro + j xo must indeed be:
>
> rho = (Z - conj(R))/(Z + conj(R)) = (Z - r + jx)/(Z + r - jx)
>
> For indeed as Slick pointed out elsewhere in this thread, how else will the
> reflected voltage equal zero when the load is a conjugate match to the
> generator.
>
> Slick thanks for directing the attention of this "subtlety" to the
> newsgroup, and again...
>
> Slick, please accept my apologies, I was too quick to criticize!
>
> Good work, and lots of patience... :-)
>
> Regards,
>
> --
> Peter K1PO

> Indialantic By-the-Sea, FL.
>
>

3955. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 11:29:45 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <JeI1b.233615$o%2.106606@sccrnsc02>
Source record: 109899

Remember, VSWR does NOT indicate RESONANCE!!!

My 20 meter hamstick on the mobile shows a VSWR of 2.0:1 at resonance!! That is 26 +j0 ohms at 14.225 MHz. Use an antenna analyzer, not VSWR, to determine your antenna resonance. Resonance is the condition of a pure resistive, no reactance, load.

All nearby objects have an impact on antenna performance. The brick wall is obviously adding a significant capacitive load to your antenna.

DD, W1MCE

Irv Finkleman wrote:

> Ken Bessler wrote:
>
>>What effect would a brick wall have on a HF antenna?
>>I'm talking 1-2" distance from the bricks, folks. The
>>wire used is 22 ga stranded insulated speaker wire.
>>Now no lectures about power - I run QRP. :-) The
>>station is well grounded to a copper baseboard heater
>>pipe and all components have short runs (12" or less)
>>of 1/4" braid line going to a common point. From there
>>it's 1/4" braid (26" long) to the pipe. I can touch any
>>part of the system while transmitting and see no change
>>in SWR.
>>
>>I cut an inverted V 66'7" per leg 133'2" overall. It's fed
>>with 12' of rg8x coax with a 6 turn 2-5/8" dia coil at the
>>feedpoint. The apex of the antenna is roughly 25' up. The
>>ends of the antenna are at chest height. The antenna is bent
>>around the corner of my building 90 degrees (I'm in a
>>corner unit). The last 8' of each leg bends again 90 degrees.
>>
>>The antenna resonates as follows:
>>============
>>2.130 2:1 swr
>>2.715 1:1 swr (flat)
>>3.620 2:1 swr
>>============
>>8.970 2:1 swr
>>9.210 1.8:1 swr
>>9.390 2:1 swr
>>============
>>12.230 2:1 swr
>>13.040 1.9:1 swr

>>13.850 2:1 swr
>>============
>>15.930 2:1 swr
>>============
>>20.970 2:1 swr
>>22.745 1.2:1 swr
>>24.520 2:1 swr
>>============
>>
>>If I figure 468/133.1666666667 I get 3.514.393 mhz
>>for resonance How come the antenna is so far off?
>>Could it be the height? Not that I'm complaining - I
>>like the low resonance and my Z11 autotuner will take
>>this antenna down to 1.8 mhz real easy. Although at
>>that freq I expect the antenna will radiate a NVIS
>>signal due to low HAAT.
>>
>>Any ideas???
>>
>>72's de Ken KG0WX
>
>
> I used to run a 40M dipole which lay along a rock wall 3 feet
> off the ground. I cut it for the center of the band, laid it
> out (held in place with a few bricks), and worked the world!
>
> It was just a few bricks short of a full load! Seriously, though,
> it worked well.

3956. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 12:49:43 UTC
From: kd1@sympatico.ca
Message-ID: <3F4762E7.A9AA04CC@sympatico.ca>
Source record: 109900

Methinks someone is confused between the conditions for maximum power
transfer and no reflections.

...Keith

"Peter O. Brackett" wrote:
>
> Slick:
>
> [snip]
> > > [snip]
> > >
> > > You are absolutely correct Roy, that formula given by "Slick" is just
> plain
> > > WRONG!
> > >
> > > rho = (Z - R)/(Z + R)
> > >
> > > Always has been, always will be.
> [snip]
>
> After consideration, I must agree with Slick.
>
> Slick is RIGHT and I was WRONG!
>
> Slick please accept my apologies!!! I was wrong, and I admit it!
>
> Indeed, the correct formula for the voltage reflection coefficient "rho"
> when computed using a "reference impedance" R, which is say the, perhaps
> complex, internal impedance R = r + jx of a generator/source which is loaded
> by a perhaps complex load impedance Z = ro + j xo must indeed be:
>
> rho = (Z - conj(R))/(Z + conj(R)) = (Z - r + jx)/(Z + r - jx)
>
> For indeed as Slick pointed out elsewhere in this thread, how else will the
> reflected voltage equal zero when the load is a conjugate match to the
> generator.
>
> Slick thanks for directing the attention of this "subtlety" to the
> newsgroup, and again...
>
> Slick, please accept my apologies, I was too quick to criticize!
>
> Good work, and lots of patience... :-)
>

> Regards,
>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.

3957. Re: Weird Mobile Problem

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 13:00:32 UTC
From: Drink <drink@gnt.net>
Message-ID: <vkfg41ob527u6d@corp.supernews.com>
Source record: 109820

This might be unrelated. But, when I was having such a problem to get my MkIIG to tune into a UHV-6, I tried everything. All grounds throughout the entire vehicle were meticulously fabricated and tested. Everything looked consistently good/correct/right but I still got SWR's so high that, in certain bands, the radio would shut down. The last thing I did was had a shop weld a $5 ground strap to the frame and bolt to the muffler. My SWR's are fine now.
I can't claim that it was the solution but the SWR miraculously corrected.
o_o_o_o
Best Regards, /| ,[_____],
Jim, WP3JQ |���L --O||||||O-
()_)�()_) �����)_)
EM60qk 30.447439N 086.628959W

3958. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 13:27:34 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <DeednQ_iSepV9tqiU-KYvw@comcast.com>
Source record: 109901

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:JeI1b.233615$o%2.106606@sccrnsc02...
> Remember, VSWR does NOT indicate RESONANCE!!!
>
> My 20 meter hamstick on the mobile shows a VSWR of 2.0:1 at resonance!!
> That is 26 +j0 ohms at 14.225 MHz. Use an antenna analyzer, not VSWR, to
> determine your antenna resonance. Resonance is the condition of a pure
> resistive, no reactance, load.
>
> All nearby objects have an impact on antenna performance. The brick wall
> is obviously adding a significant capacitive load to your antenna.
>
> DD, W1MCE
>

I've run the antenna through EZNEC. I didn't include the feedline
coil because I did'nt know how to model it. I'm still learning how
to use the program.

EZNEC not only shows a differant resonance point (3.2:1 @ 9.5 mhz
with Z=19.81 - j 24.27 ohms) but shows a tighter bandwidth.

I can not, however, deny that the antenna works. Again last night
I listened in on the 40 meter 3905 century club net and I was hearing
stations all over. I later moved to WWV @ 5 mhz and heard WWVH
just as strong as WWV (60 miles away).

Now if I could just figure out how to model the 6 turn choke at the
feedpoint..... I'd be happy to e-mail anyone my antenna file if they
would like to modify it. The wires are done and I think I got the feed-
line right but I'm not sure. Then there is the choke - 6 turns of rg8x
@ 2-5/8" dia at the feedpoint with 11 feet of rg8x going from there
to my Z11 tuner.

Any help?

Ken KG0WX

3959. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 13:39:19 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vkermtr762hjfe@corp.supernews.com>
Source record: 109903

"All nearby objects have an impact on antenna performance"
Only if they interact with EM fields.
H.

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:JeI1b.233615$o%2.106606@sccrnsc02...
> Remember, VSWR does NOT indicate RESONANCE!!!
>
> My 20 meter hamstick on the mobile shows a VSWR of 2.0:1 at resonance!!
> That is 26 +j0 ohms at 14.225 MHz. Use an antenna analyzer, not VSWR, to
> determine your antenna resonance. Resonance is the condition of a pure
> resistive, no reactance, load.
>
> All nearby objects have an impact on antenna performance. The brick wall
> is obviously adding a significant capacitive load to your antenna.
>
> DD, W1MCE
>
> Irv Finkleman wrote:
>
> > Ken Bessler wrote:
> >
> >>What effect would a brick wall have on a HF antenna?
> >>I'm talking 1-2" distance from the bricks, folks. The
> >>wire used is 22 ga stranded insulated speaker wire.
> >>Now no lectures about power - I run QRP. :-) The
> >>station is well grounded to a copper baseboard heater
> >>pipe and all components have short runs (12" or less)
> >>of 1/4" braid line going to a common point. From there
> >>it's 1/4" braid (26" long) to the pipe. I can touch any
> >>part of the system while transmitting and see no change
> >>in SWR.
> >>
> >>I cut an inverted V 66'7" per leg 133'2" overall. It's fed
> >>with 12' of rg8x coax with a 6 turn 2-5/8" dia coil at the
> >>feedpoint. The apex of the antenna is roughly 25' up. The
> >>ends of the antenna are at chest height. The antenna is bent
> >>around the corner of my building 90 degrees (I'm in a
> >>corner unit). The last 8' of each leg bends again 90 degrees.
> >>
> >>The antenna resonates as follows:
> >>============
> >>2.130 2:1 swr
> >>2.715 1:1 swr (flat)

> >>3.620 2:1 swr
> >>============
> >>8.970 2:1 swr
> >>9.210 1.8:1 swr
> >>9.390 2:1 swr
> >>============
> >>12.230 2:1 swr
> >>13.040 1.9:1 swr
> >>13.850 2:1 swr
> >>============
> >>15.930 2:1 swr
> >>============
> >>20.970 2:1 swr
> >>22.745 1.2:1 swr
> >>24.520 2:1 swr
> >>============
> >>
> >>If I figure 468/133.1666666667 I get 3.514.393 mhz
> >>for resonance How come the antenna is so far off?
> >>Could it be the height? Not that I'm complaining - I
> >>like the low resonance and my Z11 autotuner will take
> >>this antenna down to 1.8 mhz real easy. Although at
> >>that freq I expect the antenna will radiate a NVIS
> >>signal due to low HAAT.
> >>
> >>Any ideas???
> >>
> >>72's de Ken KG0WX
> >
> >
> > I used to run a 40M dipole which lay along a rock wall 3 feet
> > off the ground. I cut it for the center of the band, laid it
> > out (held in place with a few bricks), and worked the world!
> >
> > It was just a few bricks short of a full load! Seriously, though,
> > it worked well.
>

3960. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 13:42:17 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <wXydnXz-G7Sm8tqiXTWJiw@comcast.com>
Source record: 109902

"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:DeednQ_iSepV9tqiU-KYvw@comcast.com...
>
> I've run the antenna through EZNEC. I didn't include the feedline
> coil because I did'nt know how to model it. I'm still learning how
> to use the program.
>
> EZNEC not only shows a differant resonance point (3.2:1 @ 9.5 mhz
> with Z=19.81 - j 24.27 ohms) but shows a tighter bandwidth.

Update: I'm still learning how to use EZNEC but I changed the soil
type to MiniNEC and now show three swr dips, just like the real
antenna. The only differance is EZNEC shows them about 1 mhz
higher and with about 1/4 the bandwidth that I see.....

Must be the bricks.... :-)

Ken KG0WX

3961. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 13:59:03 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <rbGcnS5O8ZyY6NqiXTWJkg@ctc.net>
Source record: 109904

> I checked - 50 ohm to 75 ohm is not a big deal. The SWR is 1.46,
> resulting in 14 dB of mismatch loss, which means in a 100W system only
> 4 watts is reflected back.
> So the fact that the Vee is closer to 50 ohms is not a biggie.
>

Also depending on the height the antenna may not be 75 ohms. I had to put my 80 meter dipole up about 30 feet on each end and the middle is only 20 feet up. I have ran it through the computer program but a graph in an old antenna book shows that an antenna about 20 feet up is closer to 50 ohms than it is to 75 ohms. The swr meter at the end of 100 feet of rg8x showes it to have a swr near 1:1 near the design frequency for what that is worth.

3962. Phase center of patch antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 13:59:32 UTC
From: G&#65533;rard / F6FGZ <f6fgz@f6khi-10.ampr.org>
Message-ID: <3f480f74$0$29432$7a628cd7@news.club-internet.fr>
Source record: 109845

Hi,

A question about patch antennas like the one described by K3TZ (http://www.qsl.net/k3tz). What is the distance between the surface of the patch and the center of phase in order to put it at the focal point of a parabolic reflector. Maybe it is not very critical ?

Thanks for your help.
--
73 G&#65533;rard F6FGZ

3963. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 14:23:52 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkeu6sru5us08c@corp.supernews.com>
Source record: 109905

Roy Lewallen wrote:
> Let's run a quick calculation as Tom has suggested several times.
>
> Consider a transmission line with Z0 = 50 - j10 ohms connected to a 50 +
> j0 ohm load. As I hope will be evident, it doesn't matter what's
> connected to the source end of the line or how long it is. We'll look at
> the voltage V and current I at a point within the cable, but very, very
> close to the load end. Conditions are steady state. When numerical V or
> I is required, assume it's RMS.
>
> I hope we can agree of the following. If not, it's a waste of time to
> read the rest of the analysis.
>
> 1. Vf / If = Z0, where Vf and If are the forward voltage and current
> respectively.
>
> 2. Vr / -Ir = Z0, where Vr and Ir are the reverse voltage and current
> respectively. The minus sign is due to my using the common definition of
> positive Ir being toward the load. (If this is too troublesome to
> anyone, let me know, and I'll rewrite the equations with positive Ir
> toward the source.)
>
> 3. Gv = Vr / Vf, where Gv is the voltage reflection coefficient. This is
> the usual definition. Likewise,
>
> 4. Gi = Ir / If
>
> 5. V = Vf + Vr
>
> 6. I = If + Ir
>
> Ok so far?
>

I am looking at W.C. Johnson, pages 15 and 16,
Equations 1.22 through 1.25, where he shows, very
concisely and elegantly, that the reflection
coefficient is zero only when the complex
terminating impedance is identically equal to the
the complex value of Z0.

And not the complex conjugate of Z0.

In other words (read carefully), the complex
terminating impedance whose value is Z0 is

equivalent to an *infinite extension* of the coax
whose complex value is Z0. This is the "clincher".

Observe also the the reflection coefficient for
current is the negative of the reflection
coefficient for voltage.

Bill W0IYH

3964. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 15:01:05 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkf0c61bbia34@corp.supernews.com>
Source record: 109906

Roy Lewallen wrote:

> But doesn't having a reflection mean that some power is reflected and
> doesn't reach the load, reducing the load power from its maximum
> possible value? As you might know from my postings, I'm very hesitant to
> deal with power "waves". But what's commonly called forward power
> doesn't stay constant as the load impedance is changed, nor does the
> forward voltage. So it turns out that if you adjust the load for a
> conjugate match, there is indeed reflected voltage, and "reflected
> power". But the forward voltage and power are greater when the load is
> Z0conj than when Zl = Z0 and no reflection takes place -- enough greater
> that maximum power transfer occurs for the conjugate match, with a
> reflection present.

The "primary" waves are voltage and current, and
the power value involved is
"derived" from the primary waves. Pick a point on
the line and calculate
the instantaneous power at that point. Over time,
that value of power
"travels" along the line in concert with the
voltage and current waves.

There is nothing wrong with this. All of the
hulabaloo over this subject isn't worth a hill of
beans. Everyone understands what power "flow" and
"power outage" mean.

Bill W0IYH

3965. Take off angle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 15:06:38 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308230706.48804877@posting.google.com>
Source record: 109907

I had always thought that take off angle was
a function purely based on ht over ground
and nothing else.
When experimenting with my AO computor program
on colliear arangements I.E. without booms, I
am finding that the 'Take off' angle becomes lower
with increasing gain over a dipole.
The top edge of the leading lobe stays constant
with that of a single dipole but with the slight
lowering of the lobe angle as much as 1db of
increase in gain are obtainable at the LOWEST angle.
Does anyone know of a text book that discusses the
why's and wherefores of these lower angle gains
together with its 'known' limitations?
Is it possible that it is a parallelogram
resultant of increased vector value versus the
ground influence constant?

Regards
Art Unwin

3966. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 15:10:21 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkf0tjplkfrm36@corp.supernews.com>
Source record: 109908

William E. Sabin wrote:

> Roy Lewallen wrote:
>
>> Let's run a quick calculation as Tom has suggested several times.
>>
>> Consider a transmission line with Z0 = 50 - j10 ohms connected to a 50
>> + j0 ohm load. As I hope will be evident, it doesn't matter what's
>> connected to the source end of the line or how long it is. We'll look
>> at the voltage V and current I at a point within the cable, but very,
>> very close to the load end. Conditions are steady state. When
>> numerical V or I is required, assume it's RMS.
>>
>> I hope we can agree of the following. If not, it's a waste of time to
>> read the rest of the analysis.
>>
>> 1. Vf / If = Z0, where Vf and If are the forward voltage and current
>> respectively.
>>
>> 2. Vr / -Ir = Z0, where Vr and Ir are the reverse voltage and current
>> respectively. The minus sign is due to my using the common definition
>> of positive Ir being toward the load. (If this is too troublesome to
>> anyone, let me know, and I'll rewrite the equations with positive Ir
>> toward the source.)
>>
>> 3. Gv = Vr / Vf, where Gv is the voltage reflection coefficient. This
>> is the usual definition. Likewise,
>>
>> 4. Gi = Ir / If
>>
>> 5. V = Vf + Vr
>>
>> 6. I = If + Ir
>>
>> Ok so far?
>>
>
> I am looking at W.C. Johnson, pages 15 and 16, Equations 1.22 through
> 1.25, where he shows, very concisely and elegantly, that the reflection
> coefficient is zero only when the complex terminating impedance is
> identically equal to the the complex value of Z0.
>
> And not the complex conjugate of Z0.
>

> In other words (read carefully), the complex terminating impedance whose
> value is Z0 is equivalent to an *infinite extension* of the coax whose
> complex value is Z0. This is the "clincher".
>
> Observe also the the reflection coefficient for current is the negative
> of the reflection coefficient for voltage.
>
> Bill W0IYH
>

One other thing. If the reflection coefficient is
zero, then all of the real power that is dumped
into the coax is being delivered to the load,
minus the losses in the coax. The system is as
good as it can get.

Bill W0IYH

3967. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 15:34:44 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <oQL1b.235607$YN5.159155@sccrnsc01>
Source record: 109909

Ken Bessler wrote:

[SNIP]
>
> EZNEC not only shows a differant resonance point (3.2:1 @ 9.5 mhz
> with Z=19.81 - j 24.27 ohms) but shows a tighter bandwidth.
>

Ken, 19.81 - j24.27 IS NOT Resonant!!!

Resonant would be: 19.81 + j0 !!!! Get rid of the reactance!!

DD, W1MCE

> I can not, however, deny that the antenna works. Again last night
> I listened in on the 40 meter 3905 century club net and I was hearing
> stations all over. I later moved to WWV @ 5 mhz and heard WWVH
> just as strong as WWV (60 miles away).
>
> Now if I could just figure out how to model the 6 turn choke at the
> feedpoint..... I'd be happy to e-mail anyone my antenna file if they
> would like to modify it. The wires are done and I think I got the feed-
> line right but I'm not sure. Then there is the choke - 6 turns of rg8x
> @ 2-5/8" dia at the feedpoint with 11 feet of rg8x going from there
> to my Z11 tuner.
>
> Any help?
>
> Ken KG0WX
>
>

3968. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 15:47:49 UTC
From: richardharrison@webtv.net
Message-ID: <13112-3F478CA5-1@storefull-2315.public.lawson.webtv.net>
Source record: 109911

Deacon Dave wrote:
"---am I confused?"

If Dave is confused, I suffer the same confusion. The slope at the maximum of a sine wave is zero. The slope is maximum at zero crossings of an undistorted sine wave.

For the power sine wave, though the fact that a minus times a minus is a plus results in 2x the voltage frequency, dP/dt=0 at maxima.

A question raised in this thread is, how can energy, which is joules per second times seconds, be zero when the number of seconds is zero? The answer seems obvious. Zero times anything is zero.

Best regards, Richard Harrison, KB5WZI

3969. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 16:05:29 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <6iCdnYbFErtJDdqiXTWJkA@comcast.com>
Source record: 109910

"Dave Shrader" <david.shrader@comcast.net> wrote in message
news:oQL1b.235607$YN5.159155@sccrnsc01...
> Ken Bessler wrote:
>
> [SNIP]
> >
> > EZNEC not only shows a differant resonance point (3.2:1 @ 9.5 mhz
> > with Z=19.81 - j 24.27 ohms) but shows a tighter bandwidth.
> >
>
> Ken, 19.81 - j24.27 IS NOT Resonant!!!
>
> Resonant would be: 19.81 + j0 !!!! Get rid of the reactance!!
>
> DD, W1MCE
>

I need to buy a MFJ 269..... this is getting serious!

:-)

Ken KG0WX

3970. Re: 40 Foot Lengths of Irrigation Tubing - FREE

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 16:39:32 UTC
From: kelly@dvol.com
Message-ID: <d22b54c3.0308230839.255db49@posting.google.com>
Source record: 109912

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308222023.2aeca9d@posting.google.com>...
> Where I grew up and became a ham, there wasn't a lot of money floating
> around, and most of the hams made do with whatever they could for rigs
> and antennas. A favorite antenna was a 40 foot length of 4"
> irrigation pipe, vertical, fed against some ground radials. It works
> out to very nearly 5/8 wave on 20 meters, and isn't hard to load on 40
> and 15.

That's very good application. And they don't take much room to
install.

> Most of them did quite well with it. Maybe that will give
> some youngster in your area some ideas. Your free offer is most of
> what they'd need for that sort of antenna.
>
> Cheers,
> Tom
>

I've seen 'em stacked end-to-end to build 40 & 80M verticals, masts to
support dipoles & rhombics, for booms like the ones I made, etc. Their
use has been limited only by imaginations. With hams being the
ingenious buggers we are there aren't many limitations.

w3rv

3971. Re: A Subtle Detail of Reflection Coefficients (but important to k...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 16:51:07 UTC
From: richardharrison@webtv.net
Message-ID: <6704-3F479B7B-44@storefull-2313.public.lawson.webtv.net>
Source record: 109915

Roy Lewallen wrote:
"So it turns out that if you adjust the load for a conjugate match,
there is indeed reflected voltage, and reflected power."

Conjugate matching delivers maximum power to the load when a lossless transmission line or network is properly adjusted and inserted between the source and load and when the impedances involved are constants. Nothing is lossless, so the above is true to the extent that the line or network is ideal and the impedances stay constant.

When capacitive and inductive reactances in a circuit cancel, source resistance and load resistance remain. If a loss resistance remains between source and load, it adds to either the source or load, depending on where impedances are determined.

In a true conjugate match, there is no loss between source and load so that the impedances looking in opposite directions anywhere along the line between source and load are conjugates of each other. With a true conjugate match, there`s no reactance, the source and load resistances match, and the stupid transmission line does not know it does not extend forever, so there`s no reflection.

Best regards, Richard Harrison, KB5WZI

3972. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 17:00:10 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkf7cljt2goe4d@corp.supernews.com>
Source record: 109913

William E. Sabin wrote:
>>
>> I am looking at W.C. Johnson, pages 15 and 16, Equations 1.22 through
>> 1.25, where he shows, very concisely and elegantly, that the
>> reflection coefficient is zero only when the complex terminating
>> impedance is identically equal to the the complex value of Z0.
>>
>> And not the complex conjugate of Z0.
>>
>> In other words (read carefully), the complex terminating impedance
>> whose value is Z0 is equivalent to an *infinite extension* of the
>> coax whose complex value is Z0. This is the "clincher".

That's fine. I agree entirely, and it follows from my analysis and my conclusion. A similar analysis can be found in many texts. My offering to provide a large number of references has brought forth no interest from the most vocal participants, and they've also showed a lack of willingness to work through the simple math themselves. So I felt that it might be a good idea to post the derivation before more converts are made to this religion of proof-by-gut-feel-and-flawed-logic.

>> Observe also the the reflection coefficient for current is the
>> negative of the reflection coefficient for voltage.

Likewise.

>> Bill W0IYH
>>
>
> One other thing. If the reflection coefficient is zero, then all of the
> real power that is dumped into the coax is being delivered to the load,
> minus the losses in the coax. The system is as good as it can get.
>
> Bill W0IYH

I agree with this only in the sense that the "system is as good as it can get" means only that the loss in the coax is minimized for a given delivered power. It doesn't guarantee that the maximum possible power will be delivered to the load.

After some thought, I see I was in error in stating that terminating the line in its complex conjugate necessarily results in the maximum power transfer to the load. If the 50 - j0 had been a source impedance instead of a transmission line impedance, that would be true. However, what results in the maximum power from the source in a system like this is that the *source* be conjugately matched to the impedance seen at the

input of the line. Although terminating the line in its characteristic impedance minimizes the line loss, it doesn't guarantee maximum load power.

Of course, the conjugate matching theorem says that if the line is lossless, a load which is the conjugate of the impedance looking back toward the source from the load will result in a conjugate match at the source and everywhere else along the line, so that will effect maximum power transfer. But the impedance looking back toward the source from the load isn't by any means necessarily equal to the Z0 of the line, so the conjugate of Z0 isn't necessarily the optimum impedance for power transfer, as I erroneously stated. And I don't believe that the conjugate match theorem applies to a lossy line. I certainly don't want to start up an argument about this topic, though, and will simply state for certain that the maximum net power will be delivered to the line when the impedance seen looking into the line is equal to the complex conjugate of the source impedance.

It should be easy to set up a couple of simple numerical examples to illustrate this. Unfortunately, I'm pressed for time at the moment and have to run. I apologize for the error regarding terminating impedance and maximum power transfer.

Thanks for spurring me to re-think the conditions for maximum power transfer. I apologize for the error.

Roy Lewallen, W7EL

3973. Re: Take off angle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 17:06:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkf7nmhilfgh14@corp.supernews.com>
Source record: 109914

It's really quite simple and fundamental. The "takeoff angle" (elevation angle at which the pattern is maximum) depends on both the height and the free-space vertical pattern of the antenna. Yagis end up having a vertical pattern similar to a dipole in the forward direction because the Yagi provides very little concentration in the elevation plane. Some antennas do provide substantial concentration in the elevation plane, however, such as a W8JK, or collinear as you mention. The elevation patterns of vertically polarized antennas are further modified by the different reflection coefficient encountered by vertically polarized waves.

Kraus has a good discussion of ground reflection coefficient in _Antennas_. The vertical patterns reported by AO and similar programs can be derived by hand from the free space pattern and reflections from the ground using the reflection coefficients derived in Kraus.

Roy Lewallen, W7EL

Art Unwin KB9MZ wrote:
> I had always thought that take off angle was
> a function purely based on ht over ground
> and nothing else.
> When experimenting with my AO computor program
> on colliear arangements I.E. without booms, I
> am finding that the 'Take off' angle becomes lower
> with increasing gain over a dipole.
> The top edge of the leading lobe stays constant
> with that of a single dipole but with the slight
> lowering of the lobe angle as much as 1db of
> increase in gain are obtainable at the LOWEST angle.
> Does anyone know of a text book that discusses the
> why's and wherefores of these lower angle gains
> together with its 'known' limitations?
> Is it possible that it is a parallelogram
> resultant of increased vector value versus the
> ground influence constant?
>
> Regards
> Art Unwin

3974. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 18:05:36 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308231005.658f67d4@posting.google.com>
Source record: 109916

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vkeu6sru5us08c@corp.supernews.com>...
...
> In other words (read carefully), the complex
> terminating impedance whose value is Z0 is
> equivalent to an *infinite extension* of the coax
> whose complex value is Z0. This is the "clincher".

Exactly, Bill! And with that, you don't need any equations. You only need to realize that if you cut a line which had no reflection on it, you can weld it back together without introducing reflections (assuming you do a perfect job restoring it to its original state). That should be obvious and easy to grasp even for a math-o-phobe.

And thanks to Roy for taking the trouble to actually go through the algebra and post it. I honestly hoped that S. would do that, and still cling to the belief that there may have been a lurker or two who also did it.

Cheers,
Tom

3975. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 18:23:01 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308231023.36e58d74@posting.google.com>
Source record: 109917

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vkalvip9lccm46@corp.supernews.com>...
...
>
> The usage of complex conjugate Z0* becomes
> significant when calculating very large values of
> VSWR, according to some authors. But for these
> very large values of standing waves, the concept
> of VSWR is a useless numbers game anyway. For
> values of VSWR less that 10:1 the complex Z0 is
> plenty good enough for good quality coax.

My working definition for SWR is (1+|rho|)/|(1-|rho|)|. (Note the overall absolute value in the denominator, so it never goes negative.) Rho, of course, is Vr/Vf = (Zload-Zo)/(Zload+Zo), no conjugates. In that way, when |rho|=1, that is, when |Vr|=|Vf|, SWR becomes infinite. When |rho|>1, SWR comes back down, and corresponds _exactly_ to the Vmax/Vmin you would observe _IF_ you could propagate that Vr and Vf without loss to actually establish standing waves you could measure. I agree with Bill that all this is academic, but my working definition seems to me to be consistent with the _concept_ of SWR, and does not require me to be changing horses in mid-stream and remembering when to use a conjugate and when not to. I _NEVER_ use Zo* in finding rho. To me it's not so much a matter of nitpicking an area of no real practical importance as coming up with a firm definition I don't have to second-guess. Except on r.r.a.a., I don't seem to ever get into discussions about such things, but my definitions are easy to state up front so anyone I'm talking with can understand where I'm coming from on them.

>
> W.C. Johnson points out on page 150 that the concept:
>
> Pload = Pforward - Preflected
>
> is strictly correct only when Z0 is pure
> resistance. But the calculations of real power
> into the coax and real power into the load are
> valid and the difference between the two is the
> real power loss in the coax. For these
> calculations the complex value Z0 for moderately
> lossy coax is useful and adequate.
>
> The preoccupation with VSWR values is unfortunate
> and excruciatingly exact answers involve more

> nitpicking than is sensible.

Agreed! And thanks for the reference re powers.

Cheers,
Tom

3976. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 19:01:16 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkfef3l89s54df@corp.supernews.com>
Source record: 109918

Roy Lewallen wrote:
>
>
>
>> One other thing. If the reflection coefficient is zero, then all of
>> the real power that is dumped into the coax is being delivered to the
>> load, minus the losses in the coax. The system is as good as it can get.
>>
>> Bill W0IYH
>
>
> I agree with this only in the sense that the "system is as good as it
> can get" means only that the loss in the coax is minimized for a given
> delivered power. It doesn't guarantee that the maximum possible power
> will be delivered to the load.
>
> Of course, the conjugate matching theorem says that if the line is
> lossless, a load which is the conjugate of the impedance looking back
> toward the source from the load will result in a conjugate match at the
> source and everywhere else along the line, so that will effect maximum
> power transfer. But the impedance looking back toward the source from
> the load isn't by any means necessarily equal to the Z0 of the line, so
> the conjugate of Z0 isn't necessarily the optimum impedance for power
> transfer.

Roger to that. In the special case of conjugate
matching generator to load, via a Z0 line, if we
know the generator impedance we can do that. But
for PAs the generator impedance is "who knows
what?" so the best we can do is make the load
equal to the complex Z0. Then forward power is all
there is and reflected power is zero. My Bird
meter then tells me that the calculated VSWR is
1.0:1.0. which is what my PA is designed for.

If my coax gets so lossy that I have to worry
about stuff like this, I will buy new (better) coax.

Bill W0IYH

3977. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 19:03:37 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <dUO1b.236757$YN5.159580@sccrnsc01>
Source record: 109819

No need to buy one. In most ham clubs you can find some sucker who owns
one. I own a MFJ 259B for example. :-)

If you live in the Concord NH area you can borrow mine.

Seriously, many people miss use the term 'resonant' when they mean
lowest VSWR. For years I used a non-resonant antenna and a high quality
tuner for 80/75, 40 and 30 meters. True resonance is not a requirement
for an effective antenna. If you can load it, it will radiate.

Deacon Dave, W1MCE
+ + +

Ken Bessler wrote:

> "Dave Shrader" <david.shrader@comcast.net> wrote in message
> news:oQL1b.235607$YN5.159155@sccrnsc01...
>
>>Ken Bessler wrote:
>>
>>[SNIP]
>>
>>>EZNEC not only shows a differant resonance point (3.2:1 @ 9.5 mhz
>>>with Z=19.81 - j 24.27 ohms) but shows a tighter bandwidth.
>>>
>>
>>Ken, 19.81 - j24.27 IS NOT Resonant!!!
>>
>>Resonant would be: 19.81 + j0 !!!! Get rid of the reactance!!
>>
>>DD, W1MCE
>>
>
>
> I need to buy a MFJ 269..... this is getting serious!
>
> :-)
>
> Ken KG0WX
>
>

3978. Re: Mobile Antenna Question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 19:07:48 UTC
From: Drink <drink@gnt.net>
Message-ID: <vkfi5fohbq74ea@corp.supernews.com>
Source record: 109827

Hi Ray,
I've a CJ-7 myself and have some good insights for you. If possible, I think you're 100% on the mark for mounting on the light bar. However, consider grounding. Make sure that your light bar's Electrically connected to the windshield frame (typically, the metal screws into the steel windshield frame are good). If it's a multi-piece bar or the type that pivots down, you should remember those junctions. Also, remember that the windshield hinges aren't Electrical connections for a good ground. Since we rarely drop the windshield (I've done it once in 11 years only for maintenance), you could run a wire from an upper screw to the lower on both hinges. Then, there's your antenna selection.
If you're only running VHF/UHF, I'd just buy a good dual-bander. I think diamond makes some good ones that have a fold-over feature for when you run the trails. That hinge is great when the antenna's up but, IMHO, I'd definitely hold it in place when down with something. If you're bouncing around, it'll go flop around til it snaps. You could still just leave it upright permanently if that happened. HF is a different animal for antennas, though.
For an HF antenna, your best bet's mounted behind the spare but consider the grounding issues I mention above. It would be on centerline and out of the way of antenna-hungry limbs and bushes. A little lower, you'll find a good location on a bracket on the rear right corner (I'm not sure if your model has that tire bump stop). It's a little out there for bushes, though.
Finally, there's the rear bumper but as a ham-jeeper you already know about the vehicle as a ground plane and how "height makes right":) The only other advice that I've found with my Jeep is in the hard top.
If you run a hard top, even though it's fiberglass, it can still do a whammy on your antenna system. I just put one on and the rear hatch has a metal frame. Since I mounted my UHV-6 on the rear bumper, the HF performance is trashed when the hatch is open. I tuned the antenna with the hatch closed and noticed that the darned thing is heavily affected with that metal up and next to the radiator. Also, if you tint the glass like mine, that tinting can have, I think it's metal in it. So, it can have an effect as well, however small or big.
There you go. That's my brain dump of many years in a Jeep and on the radio. Let us know how it works out for you and good luck.
o_o_o_o
Best Regards, /| ,[_____],
Jim, WP3JQ |���L --O||||||O-
()_)�()_) �����)_)
EM60qk 30.447439N 086.628959W

3979. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 19:51:15 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi8gji$3ig$1@titan.btinternet.com>
Source record: 109821

Roy Sez -
> That's fine. I agree entirely, and it follows from my analysis and my
> conclusion. A similar analysis can be found in many texts. My offering
> to provide a large number of references has brought forth no interest
> from the most vocal participants, and they've also showed a lack of
> willingness to work through the simple math themselves. So I felt that
> it might be a good idea to post the derivation before more converts are
> made to this religion of proof-by-gut-feel-and-flawed-logic.
>
==========

YOUR analysis !

Oliver Heaviside worked it all out 120 years back.

For those antagonists who are not willing, or are unable, or are too frightened, or are just too plain lazy to work through the simple ARITHMETIC themselves, download in a few seconds program COAXPAIR from website below and run immediately. It is designed to do exactly the calculations everybody is at war about. (And many more).

Use any ordinary coax with an overal length of 30 dB or more at 1000 Hz (to ensure a nice negative angle of Zo) and terminate the line with its own calculated input impedance = Zo = Ro+jXo. Then terminate the line with its conjugate. Observe what happens to the reflection coefficient, SWR and actual overall loss. Observe what happens as line length is reduced.

Program COAXPAIR (with other transmission line progs) has been sitting there for 2 years or more.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

3980. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 19:53:23 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231153.6d004628@posting.google.com>
Source record: 109822

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:<6zE1b.24$jY2.3@newsread1.news.atl.earthlink.net>...
>
> After consideration, I must agree with Slick.
>
> Slick is RIGHT and I was WRONG!
>
> Slick please accept my apologies!!! I was wrong, and I admit it!
>

For one to admit that they were wrong about something requires
tons of courage on a public NG, the sort of courage that few here
have.

Apology absolutely accepted!

> Indeed, the correct formula for the voltage reflection coefficient "rho"
> when computed using a "reference impedance" R, which is say the, perhaps
> complex, internal impedance R = r + jx of a generator/source which is loaded
> by a perhaps complex load impedance Z = ro + j xo must indeed be:
>
> rho = (Z - conj(R))/(Z + conj(R)) = (Z - r + jx)/(Z + r - jx)
>

Well, the conj(R) should only be in the numerator:

And strictly speaking: Reflection Coefficient =

(Zload-Zo*)/(Zload+Zo)

> For indeed as Slick pointed out elsewhere in this thread, how else will the
> reflected voltage equal zero when the load is a conjugate match to the
> generator.
>

Thanks to God someone has seen the light too! I've given up on
these other people!

> Slick thanks for directing the attention of this "subtlety" to the
> newsgroup, and again...
>
> Slick, please accept my apologies, I was too quick to criticize!
>
> Good work, and lots of patience... :-)
>
> Regards,

Thanks Peter, and have a nice day.

Slick

3981. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 19:57:27 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231157.78003da6@posting.google.com>
Source record: 109823

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vkeu6sru5us08c@corp.supernews.com>...
>
> I am looking at W.C. Johnson, pages 15 and 16,
> Equations 1.22 through 1.25, where he shows, very
> concisely and elegantly, that the reflection
> coefficient is zero only when the complex
> terminating impedance is identically equal to the
> the complex value of Z0.
>
> And not the complex conjugate of Z0.
>

This is ABSOLUTELY WRONG!

The reflection coefficient is zero only when the Zload
is the conjugate of the Zo.

Go look it up in any BASIC RF book!

Slick

3982. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:00:49 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231200.65c38e94@posting.google.com>
Source record: 109824

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308221846.2b50d0a8@posting.google.com>...
>
> Seems to be, indeed, though you never know. The lurkers may well have
> learned a thing or two. The one reference you did post now disavows
> the form you posted. You've been invited to do some simple math that
> would show you the truth and you apparently refuse. You are posting
> any number of ideas contrary to what's easy to show from fundamentals
> and what's in a large number of published papers and texts and what
> has been posted here by many contributors recently and over the years.
> It's been done with both symbolic math and specific examples.
> Several inconsistencies demonstrate clearly that Vr/Vf does NOT equal
> (Zload-Zo*)/(Zload+Zo), and of course most certainly a (Zload-Zo)
> denominator is going to get you quickly into trouble. The
> inconsistencies have been pointed out here by me and by others, but
> apparently you've missed them. I'm sure it's apparent to most lurking
> where the communications is breaking down. But the formulas you
> posted above have given me a good laugh tonight, at least! Thanks!
>
> Cheers,
> Tom

Opps! that should be :

And strictly speaking: Reflection Coefficient =
(Zload-Zo*)/(Zload+Zo)

MY Typo earlier!

Slick

3983. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:01:32 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231201.35edb660@posting.google.com>
Source record: 109825

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308201047.7dff6029@posting.google.com>...
> Actually, my first posting was right all along, if Zo is always real.
>
> From Les Besser's Applied RF Techniques:
>
> "For passive circuits, 0<=[rho]<=1,
>
> And strictly speaking: Reflection Coefficient =
> (Zload-Zo*)/(Zload-Zo)
>
> Where * indicates
> conjugate.
>

Opps! that should be :

And strictly speaking: Reflection Coefficient =
(Zload-Zo*)/(Zload+Zo)

MY Typo earlier!

Slick

3984. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:03:21 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231203.5b84c84a@posting.google.com>
Source record: 109826

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030823003105.06260.00000285@mb-m19.aol.com>...
> >
> >Cheers,
> >Tom
>
> When a fine engineer, with a good education and a distinguished
> career, stoops to argue with an anonymous fellow who doesn't
> have a firm grasp of even the most basic ideas of wave mechanics,
> the result is bound to be a certain amount of frustration. You might
> want to ask yourself, Tom, whether Slick is arguing in good faith,
> or whether he has other motives.
> 73,
> Tom Donaly, KA6RUH

You ARE talking about ME, aren't you Tom, when you say "fine
engineer, with a good education and career"?

hehe...

Opps! that should be :

And strictly speaking: Reflection Coefficient =
(Zload-Zo*)/(Zload+Zo)

MY Typo earlier!

Slick

3985. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:22:08 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231222.76c18c@posting.google.com>
Source record: 109828

Roy Lewallen <w7el@eznec.com> wrote in message news:<vkejpe3lp54c3a@corp.supernews.com>...
>
> A. The one just posted by Peter, (Zl - Z0conj) / (Zl + Z0conj)
>

I believe this was a typo on Peter's part, as was my typo in the
original post.

> B. Slick's, (Zl - Z0conj) / (Zl + Z0)
>

This is the correct formula.

> C. The one in all my texts and used by practicing engineers, (Zl - Z0) /
> (Zl + Z0)
>

This is correct too, but Zo must be purely real.

>
> What about the seemingly sound logic that the accepted formula doesn't
> work for complex Z0 because it implies that a conjugate match results in
> a reflection? The formula certainly does imply that. And it's a fact --
> a conjugate match guarantees a maximum transfer of power for a given
> source impedance. But it doesn't guarantee that there will be no
> reflection. We're used to seeing the two conditions coincide, but that's
> just because we're used to dealing with a resistive Z0, or at least one
> that's close enough to resistive that it's a good approximation. The
> fact that the conditions for zero reflection and for maximum power
> transfer are different is well known to people accustomed to dealing
> with transmission lines with complex Z0.
>

Wrong. But at least you admit that the "accepted" formula (which
is fine for purely real Zo) implies a reflection.

The absence of reflection is what makes the maximum power
transfer.

> But doesn't having a reflection mean that some power is reflected and
> doesn't reach the load, reducing the load power from its maximum
> possible value? As you might know from my postings, I'm very hesitant to
> deal with power "waves". But what's commonly called forward power
> doesn't stay constant as the load impedance is changed, nor does the
> forward voltage. So it turns out that if you adjust the load for a
> conjugate match, there is indeed reflected voltage, and "reflected
> power". But the forward voltage and power are greater when the load is

> Z0conj than when Zl = Z0 and no reflection takes place -- enough greater
> that maximum power transfer occurs for the conjugate match, with a
> reflection present.
>

?? From a theory point of view, when you cancel series reactances
(canceling inductive with capacitive) the series inductor and
capacitor are
resonant, and will thoeretically have zero impedance, allowing the 50
ohms to feed 50 ohms for max power transfer, WITH THEORETICALLY NO
REFLECTIONS.

> I'd welcome any corrections to any statements I've made above, any of
> the equations, or the calculations. The calculations are particularly
> subject to possible error, so should undergo particular scrutiny. I'll
> be glad to correct any errors. Anyone who disagrees with the conclusion
> is invited and encouraged to present a similar development, showing the
> derivation of the alternate formula and giving numerical results from an
> example. That's how science, and good engineering, are done. And what it
> takes to convince me.
>
> Roy Lewallen, W7EL
>

It's hard to convince anyone who could never admit that they were
wrong.

Slick

3986. Help with EZNEC.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:23:23 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <8gSdnQsL08ihUNqiXTWJig@comcast.com>
Source record: 109829

When modeling an antenna, am I supposed to include the 6 turn,
2-5/8" dia rg8x coax choke at the feedpoint?

Sorry if it's a dumb question but it's been 9 years since I studied
this sort of thing.... :)

Ken

3987. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:26:30 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F47CDF6.8391AB4C@cwis.net>
Source record: 109830
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Marty,
I had a '706 for about a year in the mobile. It did exactly
what it claimed it would do and isn't a bad radio at all. I had
a problem with the programming, etc., just too 'busy' a radio
for
~me~ to use in the mobile. There were some things that if I
wanted
to change, I had to pull over and stop to do. I also didn't
have
much use for the VHF/UHF sections, just didn't do much up
there.
So, I swapped it for another radio (like I'd had before the
'706).
The '706 is a nice little radio with the emphasis being on
little.
I was really happy with some of it's features, but just too 'fat
fingered' to keep it.
'Doc

3988. Re: A Subtle Detail of Reflection Coefficients (but important to k...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:27:12 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231227.1dfddad3@posting.google.com>
Source record: 109831

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<6704-3F479B7B-44@storefull-2313.public.lawson.webtv.net>...
> Roy Lewallen wrote:
> "So it turns out that if you adjust the load for a conjugate match,
> there is indeed reflected voltage, and reflected power."
>
> Conjugate matching delivers maximum power to the load when a lossless
> transmission line or network is properly adjusted and inserted between
> the source and load and when the impedances involved are constants.
> Nothing is lossless, so the above is true to the extent that the line or
> network is ideal and the impedances stay constant.
>
> When capacitive and inductive reactances in a circuit cancel, source
> resistance and load resistance remain. If a loss resistance remains
> between source and load, it adds to either the source or load, depending
> on where impedances are determined.
>
> In a true conjugate match, there is no loss between source and load so
> that the impedances looking in opposite directions anywhere along the
> line between source and load are conjugates of each other. With a true
> conjugate match, there`s no reactance, the source and load resistances
> match, and the stupid transmission line does not know it does not extend
> forever, so there`s no reflection.
>
> Best regards, Richard Harrison, KB5WZI

EXTREMELY Eloquently Said!

Very impressive writing Richard, my hats off to you.

I hope other people here start listening to you more.

Again, an oasis of reason in a sea of ignorance!

Slick

3989. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 20:30:37 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308231230.4c2b8cd5@posting.google.com>
Source record: 109832

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<jNScnUiWLtpCPtuiXTWJkg@comcast.com>...
> >
> > Someone who has helped design more output matching networks than
> > you, that's certain.
> >
> >
> > Slick
>
> I didn't *help* design anything. I designed the transmitter from mic input
> to ant output.
>
> Tam/WB2TT

Bull**it! Show us your design notes if this is true!

Slick

3990. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 21:19:46 UTC
From: tdonaly@aol.com
Message-ID: <20030823171946.02646.00000406@mb-m23.aol.com>
Source record: 109833

>
>
> You ARE talking about ME, aren't you Tom, when you say "fine
>engineer, with a good education and career"?
>

Nope. Most engineers don't write like an attitudinous high-school
kid. If you study hard, go to the right schools, get the right job, etc.
you might actually become an engineer when you grow up, Slick.
Arguing with people who know more than you do on the net won't
help you, though.
73,
Tom Donaly, KA6RUH

3991. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 21:29:54 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <W4ednQQ4OvuOaNqiXTWJhw@crocker.com>
Source record: 109836

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308231222.76c18c@posting.google.com...
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vkejpe3lp54c3a@corp.supernews.com>...
> >
> > A. The one just posted by Peter, (Zl - Z0conj) / (Zl + Z0conj)
> >
> > B. Slick's, (Zl - Z0conj) / (Zl + Z0)
> >
> This is the correct formula.

it is??? -10 points and repeat last week's homework.

>
> > C. The one in all my texts and used by practicing engineers, (Zl - Z0) /
> > (Zl + Z0)
> >

this looks like the one that i have seen for both general and ideal lines.
reference Ramo, Whinnery, and VanDuzer "Fields and Waves in Communication
Electronics" table 1.23. This is the best summary of equations for
transmission lines i know of, it lists the general formulas with the R and G
terms, lots of j's, and a bunch of hyperbolics... then it lists the ideal
line (R=G=0) and then also a low loss line approximation that simplifies
away the hyperbolics but keeps the j's.

3992. Re: Take off angle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 21:33:59 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308231333.3c4e53a1@posting.google.com>
Source record: 109834

Roy Lewallen <w7el@eznec.com> wrote in message news:<vkf7nmhilfgh14@corp.supernews.com>...
> It's really quite simple and fundamental.

Appreciate your response Roy, but the fact is the
matter is not simple to me. I am comparing horizontally
polarisation patterns in all cases thus I am having
difficulty with your explanation!
It comes to mind also that an antenna used for listening
(beverage ?) also comprises of stacked collinear
horizontally polarised radiators where the vertical
radiators appears to cancel
themselves out.
So it would appear to be a case where
a beam that is close to the ground (coupled maybe to a
radiator other than the ground) is also capable of
decreasing the TOA even more than such an arrangement
at 1WL height.
Odd that you also brought into the picture the W8JK
antenna that also relies on critical coupling for
its extrorninary gain which you suggest also provides
for a low TOA when compared to the Yagi.
I will have to get the Kraus book from the library
for myself to read and hopefully there will be a
graph of some sort that will outline its advantages
and limitations.
In the mean time I will review VERT radiation patterns
of the examples that I chose in the initial post.
(Assuming that somebody does not come along and
triplicate the same thread) Since I see an advantage for
initial band openings without having to deal with the normal
early demise for stacked antennas that are not coupled.
Best regards
Art

The "takeoff angle" (elevation
> angle at which the pattern is maximum) depends on both the height and
> the free-space vertical pattern of the antenna. Yagis end up having a
> vertical pattern similar to a dipole in the forward direction because
> the Yagi provides very little concentration in the elevation plane. Some
> antennas do provide substantial concentration in the elevation plane,
> however, such as a W8JK, or collinear as you mention. The elevation
> patterns of vertically polarized antennas are further modified by the
> different reflection coefficient encountered by vertically polarized waves.
>
> Kraus has a good discussion of ground reflection coefficient in

> _Antennas_. The vertical patterns reported by AO and similar programs
> can be derived by hand from the free space pattern and reflections from
> the ground using the reflection coefficients derived in Kraus.
>
> Roy Lewallen, W7EL
>
> Art Unwin KB9MZ wrote:
> > I had always thought that take off angle was
> > a function purely based on ht over ground
> > and nothing else.
> > When experimenting with my AO computor program
> > on colliear arangements I.E. without booms, I
> > am finding that the 'Take off' angle becomes lower
> > with increasing gain over a dipole.
> > The top edge of the leading lobe stays constant
> > with that of a single dipole but with the slight
> > lowering of the lobe angle as much as 1db of
> > increase in gain are obtainable at the LOWEST angle.
> > Does anyone know of a text book that discusses the
> > why's and wherefores of these lower angle gains
> > together with its 'known' limitations?
> > Is it possible that it is a parallelogram
> > resultant of increased vector value versus the
> > ground influence constant?
> >
> > Regards
> > Art Unwin

3993. Re: Help with EZNEC.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-23 22:09:22 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <a5pfkv8fr1qj5jrkdbttnl8l2oaa0utlb0@4ax.com>
Source record: 109835

On Sat, 23 Aug 2003 14:23:23 -0600, "Ken Bessler"
<kg0wx@NOSPAMyahoo.com> wrote:

>When modeling an antenna, am I supposed to include the 6 turn,
>2-5/8" dia rg8x coax choke at the feedpoint?
>
>Sorry if it's a dumb question but it's been 9 years since I studied
>this sort of thing.... :)
>
>Ken
>

I presume that you wish to include a coax transmission line with a
common mode choke? If so there is a section on a work-around for what
I think you are wanting to do in the EZNEC manual. Look under
Building the Model/Using Transmission Lines/Modeling Coax Cable in
EZNEC's help file.

You'll then model the choke as an impedance on the third wire.

Danny, K6MHE

3994. Re: Load matching puzzle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:22:26 UTC
From: Alfred Lorona <w6wqc@dslextreme.com>
Message-ID: <bi90h1$6rmkq$1@ID-49117.news.uni-berlin.de>
Source record: 109837

"Tom Bruhns" <k7itm@aol.com> wrote in message
news:3200347.0308190828.6790faae@posting.google.com...
> I'm sorry, Reg, but that is not a correct answer for the question as
> it's stated. I hope others will jump in. Actually, had you gotten
> the right answer, I'd have scolded you for posting it so quickly and
> not letting some of the more novice folk have a try at it.

I see no one has taken up the challenge in a while so here goes. If I interpret Tom's question correctly:

100 feet of 50 ohm line with 1 megahertz loss of 2 dB/100 feet and 10 watts fed into it must have a load of 69+j107 ohms for maximum power in the load of 8.418 watts. Line Zo is 50-j17.301 ohms.

Is this correct or shall I join Reg in the 'I ain't got it right' box? :-)

73, AL

3995. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:28:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f480816_1@corp.newsgroups.com>
Source record: 109838

Tdonaly wrote:
> as delta t goes to zero, the quantity dx/dt doesn't necessarily
> also go to zero. If it did, no one would ever again have to get a permanent
> headache studying calculus.

I am familiar with limits. Some make sense and some don't. The impedance,
frequency, and SWR of a transmission line with an SWR doesn't make sense
as V goes to zero and I goes to zero. Any old piece of transmission laying
in the yard has zero volts and zero amps. What is the SWR? What is the
frequency? What is the Z0 of the line?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

3996. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:30:04 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f48087b_1@corp.newsgroups.com>
Source record: 109839

Jim Kelley wrote:
> Nevertheless, instantaneous power is simply the instantaneous amplitude
> at time t of the (sin^2(wt))/2 function.

And of what benefit is that value to the average ham operator?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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3997. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:38:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f480a5d$1_1@corp.newsgroups.com>
Source record: 109840

Richard Harrison wrote:

> Cecil, W5DXP wrote:
> "If dt=0, then time stands still,---."
>
> Yes, it is a spot frozen in time, a snapshot of slope at one instant.
>
> What really interests us is average power over a half cycle or more, not
> instantaneous power, energy`s rate of change, or power`s rate of change.

Yeeaaahhhhh! We are not enamored with tits on a boar hog, are we Richard? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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3998. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:42:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f480b51_1@corp.newsgroups.com>
Source record: 109841

Tdonaly wrote:
> Cecil seemed to indicate that he thought delta t going to zero meant that
> t was perpetually zero.

If delta-t ever gets to zero, time stands still. All you can allow
delta-t to do is to approach zero. Once it reaches zero the ballgame
is over. Limit delta-t to a minimum of a yoctosecond and everything
will be perfectly OK.
--
73, Cecil http://www.qsl.net/w5dxp

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3999. Re: Re-Normalizing the Smith Chart (Changing the SWR into

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:45:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f480c0e_1@corp.newsgroups.com>
Source record: 109842

Tdonaly wrote:
> Is the rate of doing work zero at all instances of time? Nope.
> Power is the time rate of change for doing work. It's supposed to be
> important to know the formula for finding the instantaneous
> rate of doing work so you can ultimately find the average
> rate. Maybe you think this is unimportant. I wonder why
> textbook authors think it is?

Point is, one cannot have a time rate of change without a changing
time. Zero time is not changing. An electron cannot even wiggle in
zero time.
--
73, Cecil http://www.qsl.net/w5dxp

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4000. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:51:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f480d72_1@corp.newsgroups.com>
Source record: 109843

Dave Shrader wrote:

> If dV/dt = 0 then I must have maximum voltage. This has meaning.

You must be into this new math. What is the slope of a point
when dt=0 = the width of a point? :-) Is that point flat, pointing
up, or pointing down? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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4001. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 00:57:37 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <54U1b.4963$8i2.2257@newsread2.news.atl.earthlink.net>
Source record: 109844

Slick:

[snip]
> > And not the complex conjugate of Z0.
:
:
> This is ABSOLUTELY WRONG!
>
> The reflection coefficient is zero only when the Zload
> is the conjugate of the Zo.
>
> Go look it up in any BASIC RF book!
>
> Slick
[snip]

Easy now boy! You'r almost as bad as me!

It is entirely possible, in fact I know this to be true, that there can be more than one *definition* of "the reflection coefficient". And so... one cannot say definitively that one particular defintion is WRONG.

If the definition of the reflection coefficient is given as rho = (Z - R)/(Z + R) then that's what it is. This particular definition corresponds to the situation which results in rho being null when the unknown Z is equal to the reference impedance R, i.e. an "image match". If the definition is given as rho = (Z - conj(R))/(Z + conj(R)) then rho will be null when the unknown Z is equal to the conjugate of the reference impedance conj(R), i.e. a "conjugate match".

Nothing is WRONG if the definition is first set up to correspond to what the definer is trying to accomplish. And so one has got to take care when making statements about RIGHT ways and WRONG ways to define things. Everyone is entitled to go to hell their own way if they are the onesmaking the definitions. Just as long as no incorrect conclusions are drawn from the definitions. That may occur when folks don't accept or agree on a definition.

OTOH....

Definitions and semantics aside, what we should really be interested in is what is the physical meaning of any particular definition and what are its' practical uses.

Clearly if R is a real constant resistance and contains no reactance for all frequencies [R = r + j0] then the two definitions are equivalent i.e. rho = (Z - R)/(Z + R) = (Z - conj(R))/(Z + conj(R)) since R = conj(R). This is

the situation for most common amateur radio transmsission line problems and so in these simple cases it clearly doesn't matter which definition one takes. But the question of definitions for rho is even broader than that. We amateurs usually only examine a very small class of problems, and there are many more and usually much more interesting and challenging problems that require the use of reflection [scattering] parameters.

Now for broadband problems where the reference impedance R is in general a complex function of frequency, e.g.
R(w) = r(w) + jx(w), one is faced with the problem of creating a definition for rho which will be practical and useful and easy to measure...

For an example of a practical consideration, with R a constant resistance it is easy to manufacture wide ranging reflectometers, like the Bird Model 43 since all it needs inside is a replica of the R, simply a the equivalent of a garden variety 50 Ohm resistor. But if the reference impedance R needs to be a complex function of frequency it is not so easy to design an instrument to measure the reflection coefficient over a broad band. In fact if the reference impedance R(w) = r(w) + jx(w) corresponds to the driving point impedance of a real physical system such as 18,000 feet of telephone line operated over DC to 50MHz, then it can be proved using network synthesis theory that one cannot exactly physically create the conjugate R(w) = r(w) - jx(w) for such a line. How then to make a satisfactory reflectometer for this application? To synthesize the reference impedance for such a "broad band Bird" one would have to be approximated over some narrow band, etc... Not an easy problem...

Actually, under the general so-called Scattering Formalism, the reference impedance can be chosen arbitrarily, and often is, to make the particular physical problem being addressed easy to solve. Within the general Scattering Formalism the so-called port "wave variables" a and b [a is the incident wave and b is the reflected wave] are nothing more than linear combinations of the port "electrical variables" v and i [v is the port voltage and i is the port current]. Thus each port on a network has an electrical vector [v, i]' and a wave vector [a, b]' and these two vectors are related to each other by a simple linear transformation matrix made up of the sometimes arbitrarily chosen reference impedance(s).

For example for the "normal" case we are all used to where r is a fixed constant then... [a, b]' = M [v, i]' where M is the matrix of the transformation. Specifically...

b = v - ri
a = v + ri

and the 2x2 matrix M relating the "waves" to the "electricals" has the first row [1, -r] and second row [1, r], i.e. M is equal to:

|1 -r |
|1 +r|

It is easy to show with simple algebra that this definition of the relation M betweent the waves and the electricals yeilds the common defiintion of the

reflection coefficient rho = b/a = (Z - r)/(Z + r).

The way linear algebraists view this is that the vector of waves a and b is just the vector of electricals rotated and stretched a bit!

In other words the waves are just another way of looking at the electricals.

Or... the waves and the electricals are just different manifestations of the same things, their specific numerical values depend only upon your viewpoint, i.e. what kind of measuring instruements you are using, i.e. voltmeters and ammeters or reflectometers with a particularly chosen reference impedance.

All that said, it should be clear that one can arbitrarily chose the matrix transformation [reference impedance] which relates the waves to the electricals to give you the kinds of wave variables that makes your particular physical problem easy to solve. i.e. it dictates the kind of reflectometer you must use to make the measurements. The Bird Model 43 is only one such instrument and it is useful only for one particular and common kind of narrow band set of problems. For broad band problems one needs an entirely different set of definitions, etc...

And so...

In transmission line problems it us usual to choose the characterisitic impedance Zo of the transmission media to be the reference impedance for the system under examination, but that is certainly not necessary, only convenient. And... if you want a null rho to correspond to a "conjugate match" you must choose the reference impdance in your reflectometer to be the conjugate of the reference impedance of the system under examination, and if you want a null rho to correspond to an "image match" then you must choose the reference impedance in your reflectometer to be identical to the reference impedance of the system under examination.

Every one is entitled to go to hell their own way when defining the wave to electrical variable transformations required to make their measurements and solve their problems and this will result in a variety of definitions for the scattering [reflection] parameters. Nothing more nothing less. Others may not agree with your tools, methodologies and definitions, but just be careful to follow through and be consistent with your definitions, measurements, algebra, and arithmetic and you will always get the right answers.

Thoughts, comments?

--
Peter K1PO
Indialantic By-the-Sea, FL.

4002. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 01:10:05 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308231710.65f30a6c@posting.google.com>
Source record: 109846

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<12760-3F44D570-7@storefull-2317.public.lawson.webtv.net>...
> Abdullah Eyles wrote:
> "The antenna has been assembled, but the elements were not placed as in
> the photo (see pdf."
>
> I can`t see a pdf, but from the ASCII diagram, the antenna is similar to
> log periodic antennas Kraus shous in "Antennas", 3rd edition, on page
> 397. Borrow a copy and read all about it.
>
> Best regards, Richard Harrison, KB5WZI

Hmm...
If the instruction stated that they shoul;d be assembled
"diagonaly" opposite as opposed to "directly" opposite
I would surmise that they are assembled correctly.
Actualy I see nothing wrong with such an assembly and in
fact have seen a military configuration such as this
where two such antennas were used in V shaped form
where the narrow ends were placed together and enclosing
an approx 30 degree angle, all elements being horizontal.
Art

4003. Re: Parts needed for TET HB33SP antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 01:40:02 UTC
From: "G.Beat" <now9spamgb@spam.comcast.net>
Message-ID: <SHU1b.83886$2x.25504@rwcrnsc52.ops.asp.att.net>
Source record: 109847

"Que" <dwarheit@nauticom.net> wrote in message
news:3f47520a_1@news.nauticom.net...
> I am looking for replacement parts for my TET HB33SP triband antenna. I
need
> the element to boom brackets, the element to boom insulators and some
metric
> U bolts. Can anyone tell me where I can obtain thers?
>
> Dave

Dave -

You may wish to look at DX Engineering
http://www.dxengineering.com/

gb

4004. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 01:51:44 UTC
From: tdonaly@aol.com
Message-ID: <20030823215144.07473.00000284@mb-m25.aol.com>
Source record: 109848

>
>
>Tdonaly wrote:
>> Cecil seemed to indicate that he thought delta t going to zero meant that
>> t was perpetually zero.
>
>If delta-t ever gets to zero, time stands still. All you can allow
>delta-t to do is to approach zero. Once it reaches zero the ballgame
>is over. Limit delta-t to a minimum of a yoctosecond and everything
>will be perfectly OK.
>--
>73, Cecil http://www.qsl.net/w5dxp
>

Are you trying to start an argument? I wrote "going to zero," not
"at zero." Besides, what the hell is a yoctosecond? All this was
argued over and discussed in the 18th century. You and Richard
Harrison are beginning to sound like Bishop Berkeley.
73,
Tom Donaly, KA6RUH

4005. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 02:44:46 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkg9ko3jndio01@corp.supernews.com>
Source record: 109849

Yes indeed. I hope no one has interpreted all this as meaning that I believe it has any direct relevance to typical amateur antenna applications. It doesn't. As Bill and quite a few others have stated, the output Z of the PA isn't important at all for our applications. And for nearly any calculation you care to do at HF, the assumption that Z0 is purely real is entirely adequate. The precise Z0 might possibly be important if very precise measurements are being made, but that's not something done by most amateurs.

But there was information posted that's incorrect, even if it's not directly relevant to most of us, and that's what prompted my posting in response.

Roy Lewallen, W7EL

William E. Sabin wrote:
>
> Roger to that. In the special case of conjugate matching generator to
> load, via a Z0 line, if we know the generator impedance we can do that.
> But for PAs the generator impedance is "who knows what?" so the best we
> can do is make the load equal to the complex Z0. Then forward power is
> all there is and reflected power is zero. My Bird meter then tells me
> that the calculated VSWR is 1.0:1.0. which is what my PA is designed for.
>
> If my coax gets so lossy that I have to worry about stuff like this, I
> will buy new (better) coax.
>
> Bill W0IYH
>

4006. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 02:49:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkg9udh97dfh9a@corp.supernews.com>
Source record: 109850

I apologize if it sounded like my analysis was original. I had assumed, apparently mistakenly, that readers realized it was simply a statement of very well known principles, and had no intention whatsoever to claim or imply originality. I did mention in a followup posting that a similar analysis can be found in many texts.

Please amend my posting from:

"I agree entirely, and it follows from my analysis and my conclusion."

to

"I agree entirely, and it follows from the analysis and conclusion I posted."

I do take credit for posting it on this newsgroup, something neither Reg nor anyone else has, to my knowledge, taken the trouble to do.

Roy Lewallen, W7EL

Reg Edwards wrote:
> Roy Sez -
>
>>That's fine. I agree entirely, and it follows from my analysis and my
>>conclusion. A similar analysis can be found in many texts. My offering
>>to provide a large number of references has brought forth no interest
>>from the most vocal participants, and they've also showed a lack of
>>willingness to work through the simple math themselves. So I felt that
>>it might be a good idea to post the derivation before more converts are
>>made to this religion of proof-by-gut-feel-and-flawed-logic.
>>
>
> ==========
>
> YOUR analysis !
>
> Oliver Heaviside worked it all out 120 years back.
> . . .

4007. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 02:56:00 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkga9q5coti963@corp.supernews.com>
Source record: 109851

I'm eagerly awaiting your analysis showing how and why it's wrong. Or simply which of the statements and equations I wrote are incorrect, and what the correct statement or equation should be and why. Or even a simple numerical example that illustrates the relationship between reflection and power transfer.

It appears that there are two groups of readers: those who are convinced by authoritative sounding statements not backed up by any evidence, and those who require a solid basis for believing a statement. The first group I can't help at all. But hopefully I've reached at least some people in the second group.

Roy Lewallen, W7EL

Dr. Slick wrote:
> . . .
> Wrong. But at least you admit that the "accepted" formula (which
> is fine for purely real Zo) implies a reflection.
>
> The absence of reflection is what makes the maximum power
> transfer.
> . . .

4008. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 03:00:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkgai075pudae2@corp.supernews.com>
Source record: 109852

I've never seen the (voltage) reflection coefficient defined as anything other than the ratio of reflected voltage to forward voltage. Do you have any reputable source that defines it differently? Certainly, that definition is central to the analysis I presented, and leads irrevocably to the generally accepted formula relating it to Z0 and Zl.

Roy Lewallen, W7EL

Peter O. Brackett wrote:
>
> It is entirely possible, in fact I know this to be true, that there can be
> more than one *definition* of "the reflection coefficient". And so... one
> cannot say definitively that one particular defintion is WRONG.
> . . .

4009. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 03:06:02 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkgasjm2na0t94@corp.supernews.com>
Source record: 109853

This is interesting. But how did it lead you to the equation you
determined must be correct? That is, what definition of reflection
coefficient did you start with, where did you get it, and how did you
get from there to the reflection coefficient equation you presented?

I assume that, consistent with the admonition in the last paragraph of
your posting, you were "careful to follow through and be consistent with
your definitions, measurements, algebra, and arithmetic". It would be
very instructive for us to be able to follow the process you did in
coming to what you feel is the "right answer".

Roy Lewallen, W7EL

Peter O. Brackett wrote:
>
> Easy now boy! You'r almost as bad as me!
>
> It is entirely possible, in fact I know this to be true, that there can be
> more than one *definition* of "the reflection coefficient". And so... one
> cannot say definitively that one particular defintion is WRONG.
>
> If the definition of the reflection coefficient is given as rho = (Z - R)/(Z
> + R) then that's what it is. This particular definition corresponds to the
> situation which results in rho being null when the unknown Z is equal to the
> reference impedance R, i.e. an "image match". If the definition is given as
> rho = (Z - conj(R))/(Z + conj(R)) then rho will be null when the unknown Z
> is equal to the conjugate of the reference impedance conj(R), i.e. a
> "conjugate match".
>
> Nothing is WRONG if the definition is first set up to correspond to what the
> definer is trying to accomplish. And so one has got to take care when
> making statements about RIGHT ways and WRONG ways to define things.
> Everyone is entitled to go to hell their own way if they are the onesmaking
> the definitions. Just as long as no incorrect conclusions are drawn from
> the definitions. That may occur when folks don't accept or agree on a
> definition.
>
> OTOH....
>
> Definitions and semantics aside, what we should really be interested in is
> what is the physical meaning of any particular definition and what are its'
> practical uses.
> . . .

> Every one is entitled to go to hell their own way when defining the
wave to
> electrical variable transformations required to make their
measurements and
> solve their problems and this will result in a variety of definitions for
> the scattering [reflection] parameters. Nothing more nothing less.
Others
> may not agree with your tools, methodologies and definitions, but just be
> careful to follow through and be consistent with your definitions,
> measurements, algebra, and arithmetic and you will always get the right
> answers.

4010. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 03:15:17 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkgbdupc4mrf98@corp.supernews.com>
Source record: 109854

Tam, I hope you don't allow yourself to be pushed around by this bully. Your postings are relevant, welcome, and stand by themselves. There's no need for any of us to justify ourselves to the likes of a person who's too embarrassed and insecure to even reveal his name. What we post is either true or it's not, and its truth doesn't depend on what we have or haven't designed. Questioning a person's credentials is simply a way to deflect attention from the questioner's inability to present a rational counter-argument. And a person who won't even reveal his name demanding that someone else jump through hoops to satisfy his demands for credentials? That's laughable. Sad, but laughable.

Roy Lewallen, W7EL

Dr. Slick wrote:
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<jNScnUiWLtpCPtuiXTWJkg@comcast.com>...
>
>>> Someone who has helped design more output matching networks than
>>>you, that's certain.
>>>
>>>
>>>Slick
>>
>>I didn't *help* design anything. I designed the transmitter from mic input
>>to ant output.
>>
>>Tam/WB2TT
>
>
>
> Bull**it! Show us your design notes if this is true!
>
>
> Slick

4011. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 03:21:49 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bi9b0c$i00$1@hercules.btinternet.com>
Source record: 109855

Peter, what an excellent, straight-forward, plain
-English, explanation. And you didn't enlist the
aid of a single guru. Not even Terman or the
ARRL handbook. ;o)

Reg

4012. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 03:53:04 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <vhdgkv0bfnj1ns1hq54jl6ph2g7hv9i3p9@4ax.com>
Source record: 109856

On Thu, 21 Aug 2003 17:14:33 -0600, "Ken Bessler"
<kg0wx@NOSPAMyahoo.com> wrote:

>What effect would a brick wall have on a HF antenna?
>I'm talking 1-2" distance from the bricks, folks. The

Remember too that many brick walls use steel reinforcement, or lots of steel strips to hold them to the frame structure unless we are talking a "real" brick wall which is seldom found in the US in buildings much less than a century old.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

4013. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 04:22:35 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308232022.1db5efa9@posting.google.com>
Source record: 109857

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030823171946.02646.00000406@mb-m23.aol.com>...
> >
> >
> > You ARE talking about ME, aren't you Tom, when you say "fine
> >engineer, with a good education and career"?
> >
>
> Nope. Most engineers don't write like an attitudinous high-school
> kid. If you study hard, go to the right schools, get the right job, etc.
> you might actually become an engineer when you grow up, Slick.
> Arguing with people who know more than you do on the net won't
> help you, though.
> 73,
> Tom Donaly, KA6RUH

I ain't like most engineers boy, and i'm certainly more edumacated than you!

You don't know Sh**!

Slick

4014. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 04:46:11 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308232046.2ad23531@posting.google.com>
Source record: 109858

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:<54U1b.4963$8i2.2257@newsread2.news.atl.earthlink.net>...
> Slick:
>
> [snip]
> > > And not the complex conjugate of Z0.
> :
> :
> > This is ABSOLUTELY WRONG!
> >
> > The reflection coefficient is zero only when the Zload
> > is the conjugate of the Zo.
> >
> > Go look it up in any BASIC RF book!
> >
> > Slick
> [snip]
>
> Easy now boy! You'r almost as bad as me!
>

ok...taking some deep breaths here...

:)

> It is entirely possible, in fact I know this to be true, that there can be
> more than one *definition* of "the reflection coefficient". And so... one
> cannot say definitively that one particular defintion is WRONG.
>

But we need a definite definition, otherwise everyone has their
own standard, so when i say "reflection coefficient", you will will
know what i mean, not something else.

When i say "Elephant", hopefully the same animal pops into your
head.

> If the definition of the reflection coefficient is given as rho = (Z - R)/(Z
> + R) then that's what it is. This particular definition corresponds to the
> situation which results in rho being null when the unknown Z is equal to the
> reference impedance R, i.e. an "image match". If the definition is given as
> rho = (Z - conj(R))/(Z + conj(R)) then rho will be null when the unknown Z
> is equal to the conjugate of the reference impedance conj(R), i.e. a
> "conjugate match".
>

Correction: rho = (Z - conj(R))/(Z + (R)), the conjugate being
only in the denominator.

Slick

4015. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 05:02:54 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308232102.5aa79df8@posting.google.com>
Source record: 109859

Roy Lewallen <w7el@eznec.com> wrote in message news:<vkga9q5coti963@corp.supernews.com>...
> I'm eagerly awaiting your analysis showing how and why it's wrong. Or
> simply which of the statements and equations I wrote are incorrect, and
> what the correct statement or equation should be and why. Or even a
> simple numerical example that illustrates the relationship between
> reflection and power transfer.
>

I think Reg put it best:

"Dear Dr Slick, it's very easy.

Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.

Load it with a real resistor of 10 ohms in series with a real
inductance of
40 millihenrys.

The inductance has a reactance of 250 ohms at 1000 Hz.

If you agree with the following formula,

Magnitude of Reflection Coefficient of the load, ZL, relative to line
impedance

= (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,

and has an angle of -59.9 degrees.

The resulting standing waves may also be calculated.

Are you happy now ?"

Reg, G4FGQ

If it were not for Reg pointing out this example, i wouldn't have
researched and corrected my original, "purely real" Zo post with the
more general conjugate Zo formula.

And i researched it because i knew that you cannot have a R.C.
greater than one for a passive network (you can only have a R.C.
greater than one for an active network, which would be a "return gain"
instead of a "return loss"), so i knew that when Zo is complex, my
original post must have been wrong.

Roy, you and i have been slinging mud at each other, but i do
respect the things you have taught me, and i do thank you for deriving
the uV/meter equation for dipoles.

But i want you to know that i'm not doing this for my ego. Didn't i admit that calling antennas "transducers" was a better word than "transformers", albiet 2 transducers make 1 transformer?

I have yet to see you admit that someone else has a point.

Intelligent people can be close-minded, that is for certainly, in which case, their intelligence is blunted.

Slick

4016. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 05:04:54 UTC
From: tdonaly@aol.com
Message-ID: <20030824010454.28166.00000527@mb-m29.aol.com>
Source record: 109860

>
>
> Correction: rho = (Z - conj(R))/(Z + (R)), the conjugate being
>only in the denominator.
>
>
>Slick

You know, Garvin, if you can't even tell the numerator from the
denominator, you're in sad shape. Maybe you should stick
to playing your guitar and doodling.
73,
Tom Donaly, KA6RUH

4017. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 05:06:51 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308232106.42d347aa@posting.google.com>
Source record: 109861

"David Robbins" <k1ttt@arrl.net> wrote in message
news:<W4ednQQ4OvuOaNqiXTWJhw@crocker.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308231222.76c18c@posting.google.com...
> > Roy Lewallen <w7el@eznec.com> wrote in message
> news:<vkejpe3lp54c3a@corp.supernews.com>...
> > >
> > > A. The one just posted by Peter, (Zl - Z0conj) / (Zl + Z0conj)
> > >
> > > B. Slick's, (Zl - Z0conj) / (Zl + Z0)
> > >
> > This is the correct formula.
>
> it is??? -10 points and repeat last week's homework.
>

Who are you to correct my homework? Look it up yourself

It's absolutely the correct formula

For passive circuits, 0<=[rho]<=1,

And strictly speaking: Reflection Coefficient =
(Zl-Zo*)/(Zl+Zo)

Where * indicates conjugate.

> >
> > > C. The one in all my texts and used by practicing engineers, (Zl - Z0) /
> > > (Zl + Z0)
> > >
>

This formula is correct too, but only because most texts assume a
purely real Zo.

F+, and take the whole class again.

Slick

4018. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 05:09:51 UTC
From: tdonaly@aol.com
Message-ID: <20030824010951.28166.00000528@mb-m29.aol.com>
Source record: 109862

```
>
>
> I ain't like most engineers boy, and i'm certainly more edumacated than
>you!
>
> You don't know Sh**!
>
>
>Slick
>

Hi, Garvin, you old gwee.
Does your family know you're monkeying around like this on
the net?
73,
Tom Donaly, KA6RUH
```

4019. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 06:25:02 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f485baf_4@corp.newsgroups.com>
Source record: 109863

Roy Lewallen wrote:
> I've never seen the (voltage) reflection coefficient defined as anything
> other than the ratio of reflected voltage to forward voltage. Do you
> have any reputable source that defines it differently?

s11 is a reflection coefficient that has the special condition that
a2 must be equal zero. When a2 is not equal zero, the s11 reflection
coefficient and the apparent reflection coefficient are not the same.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4020. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 06:27:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f485c41_4@corp.newsgroups.com>
Source record: 109864

Dr. Slick wrote:
> When i say "Elephant", hopefully the same animal pops into your
> head.

Indian or African?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4021. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 07:34:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkgqksqb66mn43@corp.supernews.com>
Source record: 109865

Thank you. That is, of course, for a two port network. Since we've been talking strictly about a one-port case (I think, anyway), let me rephrase the question. Do you have any reputable source that defines the reflection coefficient for a one-port network as anything other than Vr/Vf.

Although it's not really relevant to the discussion at hand, I believe a valid argument could be made that if a2 isn't equal to zero, then S11 isn't a reflection coefficient at all. It surely isn't the reflection coefficient at port 1, anyway. But it's a point I'll happily concede in lieu of fussing about it.

Roy Lewallen, W7EL

W5DXP wrote:
> Roy Lewallen wrote:
>
>> I've never seen the (voltage) reflection coefficient defined as
>> anything other than the ratio of reflected voltage to forward voltage.
>> Do you have any reputable source that defines it differently?
>
>
> s11 is a reflection coefficient that has the special condition that
> a2 must be equal zero. When a2 is not equal zero, the s11 reflection
> coefficient and the apparent reflection coefficient are not the same.

4022. Re: Take off angle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 07:59:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkgs229u01og8b@corp.supernews.com>
Source record: 109866

Art Unwin KB9MZ wrote:
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vkf7nmhilfgh14@corp.supernews.com>...
>
>>It's really quite simple and fundamental.
>
>
> Appreciate your response Roy, but the fact is the
> matter is not simple to me. I am comparing horizontally
> polarisation patterns in all cases thus I am having
> difficulty with your explanation!

Ok, I'll try again. To determine the relative field strength at a distant point at an elevation angle of, say 20 degrees, put the antenna at the height you're interested in. Draw a line from the antenna to the ground, at a downward angle of 20 degrees, then reflecting upward, resulting in a ray going upward at an elevation angle of 20 degrees. Draw another line from the antenna at an upward angle of 20 degrees. You now have two parallel lines, a "direct ray" and a "reflected ray". At some distant point, draw a line perpendicular to those rays. Measure the distance from the antenna to the new line via each of the two paths, one direct and the other reflected. You'll be adding these two rays, and the difference between the two paths tells you the relative phases of these two components you'll be adding. For example, if the antenna is a half wavelength high, you'll find that at an elevation angle of 30 degrees, the reflected ray travels exactly one wavelength farther than the direct ray, so the two rays will exactly add in phase. At higher or lower angles, they won't. When adding the two rays, you've also got to factor in the free-space radiation pattern of the antenna to see just how much the antenna is radiating at those angles (say, 20 degrees down and 20 degrees up from horizontal, for the pattern at 20 degrees). In the case of a dipole, the free-space radiation pattern broadside to the antenna is circular, so rays at all angles are equal. Thus, 30 degrees is the "takeoff angle" for a dipole up a half wavelength. You do also have to include a factor for the reflection coefficient of the reflected ray from the ground. But for horizontally polarized waves at moderate to low angles, it's very close to one. (But it's not, for vertically polarized signals, so it should always be computed for vertical antennas.) This is the way that AO, NEC, EZNEC, MININEC, and similar programs compute the elevation pattern.

Now suppose that an antenna has a skinny elevation pattern in free space. The W8JK is an example. At, say, 30 degrees up or down, the signal is weaker than at 20 degrees. So the elevation pattern will be correspondingly stronger than a dipole at 20 degrees relative to 30

degrees. This will lower the "takeoff angle" -- the elevation angle at which the pattern is maximum.

These patterns can be pretty easily created with a calculator and either some trigonometry or graph paper if you have the free-space pattern, but modern programs can do the work for you.

> It comes to mind also that an antenna used for listening
> (beverage ?) also comprises of stacked collinear
> horizontally polarised radiators where the vertical
> radiators appears to cancel
> themselves out.

No, the radiation from a Beverage is primarily vertically polarized, off the end.

> So it would appear to be a case where
> a beam that is close to the ground (coupled maybe to a
> radiator other than the ground) is also capable of
> decreasing the TOA even more than such an arrangement
> at 1WL height.

I dunno. Look at the method I described, and try it on your theoretical antenna to see if that's true or not.

> Odd that you also brought into the picture the W8JK
> antenna that also relies on critical coupling for
> its extrorninary gain which you suggest also provides
> for a low TOA when compared to the Yagi.

Egad, the magical "critical coupling". The W8JK has mutual impedance and coupling between the elements like any other antenna. At 4 or so dB for a couple of elements (if you keep losses down), I wouldn't call its gain "extraordinary", either. It follows the same rules as all other antennas, and its gain and other characteristics can be predicted with great accuracy using the same ordinary methods used for all other antennas.

> I will have to get the Kraus book from the library
> for myself to read and hopefully there will be a
> graph of some sort that will outline its advantages
> and limitations.

It's described in _Antennas_, all editions I believe.

> . . .

Roy Lewallen, W7EL

4023. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 10:35:55 UTC
From: ac6la@arrl.net
Message-ID: <960228f1.0308240235.225d519d@posting.google.com>
Source record: 109867

Now that the various typo mistakes have been corrected, and putting aside for the moment the name calling and ad hominem arguments, could it be that _both_ sides in this discussion are correct? Camp 'A' says that the reflection coefficient is computed the classical way, without using Zo conjugate, and offers various mathematical proofs and discussions of infinitely long lines. Camp 'B' says the reflection coefficient is computed with Zo* (Zo conjugate) in the numerator, and offers explanations dealing with the conservation of energy and maximum transfer of power.

Both sides may be correct since they are talking about _two different_ meanings for the term "reflection coefficient." One has to do with voltage (or current) traveling waves and the other has to do with power. Quoting two references:

###

From Chipman, "Theory and Problems of Transmission Lines," 1968:

Section 7.1, Reflection coefficient for voltage waves:
[Discussion and math, then] ...
rho = (ZL - Zo) / (ZL + Zo)

Section 7.6, Complex characteristic impedance
[Various mathematical manipulations, then] ... "the maximum possible value for |rho| is found to be 1 + sqrt(2) or about 2.41. ... [T]he principal of conservation of energy is not violated even when the magnitude of the [voltage wave] reflection coefficient exceeds unity."

[then more math, then] ... "The conclusion is somewhat surprising, though inescapable, that a transmission line can be terminated with a [voltage wave] reflection coefficient whose magnitude is as great as 2.41 without there being any implication that the power level of the reflected wave is greater than that of the incident wave."

[then a discussion of a source with internal impedance Zo connected to a line with characteristic impedance also Zo that is terminated with a load of impedance ZL, then] "... more power will be delivered to a terminal load impedance Zo* [conjugate of Zo] that produces a reflected [voltage] wave on the line than to a terminal load impedance Zo that produces no reflected [voltage] wave."

So Chipman states quite clearly that zero reflected voltage wave magnitude does _not_ mean maximum power transfer. On the contrary, maximum power is transferred only when there is a non-zero voltage wave reflection (assuming a complex Zo line). Counter arguments along the lines of "Well that doesn't seem right to me so therefore Chipman

must be wrong" don't carry much weight given Chipman's credentials.

###

From Kurokawa, "Power Waves and the Scattering Matrix," IEEE Transactions on Microwave Theory and Techniques, March 1965:

Section 2, explanation of and mathematical definition of the concept of "power waves," explicitly noted by the author to be distinct from the more commonly discussed voltage and current traveling waves.

Section 3, definition of the reflection coefficient [for power waves]:
s = (ZL - Zo*) / (ZL + Zo)
with a footnote "[Only w]hen Zo is real and positive this is the voltage wave reflection coefficient." Kurokawa takes pains to make it clear that his "s" power wave reflection coefficient is not the same as the (usually rho or Gamma) voltage wave reflection coefficient.

Section 9, comparison with [voltage and current] traveling waves:
"... since the [voltage or current] traveling wave reflection coefficient is given by (ZL - Zo) / (ZL + Zo) [note no conjugate] and the maximum power transfer takes place when ZL=Zo*, ... it is only when there is a certain reflection in terms of [voltage or current] traveling waves that the maximum power is transferred from the line to the load."

So Kurokawa agrees with Chipman concerning the condition for maximum power transfer. Kurokawa also defines two different reflection coefficients, both in the same paper.

[In some of the above quotes I have altered the subscript letter assigned to Z, merely for consistency between the two references.]

###

So, it seems to me, everybody can agree as long as it is understood that there are different meanings for the term "reflection coefficient." One meaning, and its mathematical definition, applies to voltage or current waves. The other, with a slightly different mathematical definition, applies to the power transfer from a line to a load. They are one and the same only when the reactive portion of Zo (Xo) is ignored. It may or may not be acceptable to do so, depending on the attenuation of the line and the frequency. Lossy lines and lower frequencies yield more negative values for the Xo component of Zo.

You can use Reg's COAXPAIR or my TLDetails program to do the math and show concrete examples. Try something like 100 feet of RG-174 at 0.1 MHz, terminated with loads equivalent to Zo and then Zo conjugate, and compare the rho (or SWR) figures versus the power delivered to the load for each case. When the termination equals Zo conjugate, note that the total dB loss is actually _less_ than the matched line loss. As counter intuitive as this may sound, Chipman offers an explanation

on page 139. (And as others are sure to point out, this makes absolutely no difference in practical applications and is of academic interest only.)

Copy of the Kurokawa paper, in pdf format, available on request via private email. I've obtained copies of Chipman, on two separate occasions, from Powell's in Portland.

Dan, AC6LA
www.qsl.net/ac6la/

4024. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 11:14:32 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <CPWdndNCJfWJA9WiXTWJjg@crocker.com>
Source record: 109868

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308232106.42d347aa@posting.google.com...
> "David Robbins" <k1ttt@arrl.net> wrote in message
news:<W4ednQQ4OvuOaNqiXTWJhw@crocker.com>...
> > "Dr. Slick" <radio913@aol.com> wrote in message
> > news:1d15af91.0308231222.76c18c@posting.google.com...
> > > Roy Lewallen <w7el@eznec.com> wrote in message
> > news:<vkejpe3lp54c3a@corp.supernews.com>...
> > > >
> > > > A. The one just posted by Peter, (Zl - Z0conj) / (Zl + Z0conj)
> > > >
> > > > B. Slick's, (Zl - Z0conj) / (Zl + Z0)
> > > >
> > > This is the correct formula.
> >
> > it is??? -10 points and repeat last week's homework.
> >
>
> Who are you to correct my homework? Look it up yourself
>
>

i did, and its wrong.... but you cut off my reference in your reply. there
is no conjugate term in the complete solution for a real line.

4025. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 11:22:34 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <UjZPnZC6JSEAUu@ifwtech.co.uk>
Source record: 109669

Dan wrote:
>
>So Chipman states quite clearly that zero reflected voltage wave
>magnitude does _not_ mean maximum power transfer. On the contrary,
>maximum power is transferred only when there is a non-zero voltage wave
>reflection (assuming a complex Zo line). Counter arguments along the
>lines of "Well that doesn't seem right to me so therefore Chipman must
>be wrong" don't carry much weight given Chipman's credentials.
>
Thanks for that posting, Dan, and for what looks like a very clear
summary.

Just one point, about that very last word: what are Chipman's
"credentials", really? They are not that he is a well-known[*] textbook
author, college professor, PhD, or anything like that. This discussion
is already way overloaded with personal "credentials" of that kind!

Chipman's true credentials are that he has thought about this subject,
noticed the apparent problem, worked it out, and presented clear,
correct conclusions in a way that other people can follow. Those are the
only credentials that really count.

[*] Well-known to some college students in the USA, perhaps? I'd never
heard of him, but Dan's summary suggests this book might be worth
looking for.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4026. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 11:50:32 UTC
From: richardharrison@webtv.net
Message-ID: <7750-3F48A688-1@storefull-2318.public.lawson.webtv.net>
Source record: 109670

Art Unwin wrote:
"Actually, I see nothing wrong with such an assembly and in fact have seen a military configuration such as this where two such antennas were used in a V shaped form where the narrow ends were placed together and enclosing an approx 30 degree angle."

Such an antenna may be called a pyramidal log-periodic.

A version is included in Kraus on page 398. Its boom-separation angle is 60 degrees.

A pyramidal log periodic is the cover story in the July 1969 "Popular Electronics". This is a construction article beginning on page 27. The author is George Monser. It uses 17 rods on each boom, every rod different from the others on a boom. Separation angle for the booms is also 60 degrees. This antenna covers VHF and UHF TV and FM broadcast bands. It is said to match 300-ohm feedline over the range and produce enough gain for "deep-fringe" color reception.

The longest element (not aligned end-to-end as a dipole) is 115-in. tip to tip, or 1/2-wave at about 51 MHz.

Best regards, Richard Harrison, KB5WZI

4027. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 12:24:12 UTC
From: "Adam T. Cately" <atcately@bright.net>
Message-ID: <3F48AE6C.C00BA6B4@bright.net>
Source record: 109671

<SNIP>

I haven't read the rest of the thread, but here's something glaringly
obvious...

> Grounding will be easy when I get around to it - I have
> baseboard hot water radiators that I can ground to.

NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
as it goes directly to the earth outside the building. The hot water
pipes are routed through the hot water heater(s) and are NOT a direct
path to ground.

--

- Adam -

4028. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 12:24:54 UTC
From: kd1@sympatico.ca
Message-ID: <3F48AE96.4DEAC9@sympatico.ca>
Source record: 109672

Richard Harrison wrote:
>
> Keith wrote:
> "Are you sure you want to discard all thoughts of the instantaneous?
>
> Certainly not, but it has little application to power in transmission
> line problems.
>
> Power is the rate of transferring energy or the rate of doing work.
> Electrical power is measured in joules per seconds or more succinctly in
> watts.
>
> What is the value in watts or joules per second when seconds equal
> zero? I venture an answer: It is the V x I x cos. theta at that instant,
> but since work is power x time, it won`t do anything for you in zero
> seconds.

But then instantaneous velocity and instantaneous acceleration won't do anything for you in zero seconds, either. And yet, for example, inertial navigation systems successfully operate by integrating these instantaneous values.

Back to your assertion "but it has little application to power in transmission line problems".

It is certainly true that for RF, average power is of most interest. It is what gets you communicating.

But if you want to understand how things work, exploring the land of the instantaneous is quite valuable. It is instantaneous voltages which make standing waves. It is instantaneous signals which cause distortion in diode demodulators. It is instantaneous voltages and currents which are added and subtracted in Bird wattmeters. It is instantaneous voltages and currents which interact at impedance discontinuities to do all the neat stuff. And it is instantaneous voltages and currents which produce instantaneous power.

But I notice an instantaneous willingness to reject the value of instantaneous power. I suspect this is because the conclusions reached when thinking in terms of instantaneous power are inconsistent with some of your long held beliefs and rather than re-examine these beliefs it is simpler to just reject instantaneous power.

But to reject instantaneous power in a consistent manner, you need to explain why you do not also reject instantaneous velocity, acceleration, current, flow or any of the many other interesting things which are a

derivative with respect to time.

For if we accept the argument "in zero time, no energy can flow" then
we should also accept:
- "in zero time, no charge can flow" -- say bye to instantaneous current
- "in zero time, we can move no distance" -- say bye to instantaneous
velocity
- etc., etc.

When you can't find any fundamental reason that the instantaneousness
of power is different from the instantaneousness of other common
measures like velocity, current, etc., you may wish to return to the
original assertion which caused all this fuss:

Assertion A:
"In a shorted ideal transmission line which has reached steady state,
no energy can cross a voltage or current minimum because
p(t) = v(t) * i(t) and at a voltage or current minimum, the voltage
or current is always zero, so the power is always zero, so there is
no energy flow across a voltage or current minimum."

This conclusion contradicts a commonly held belief:

Belief B:
"that in steady-state, energy is flowing along the transmission line
to the end where it is reflected and travels back to the beginning."

Unless you can find an error in the logic of Assertion A, it would
seem reasonable that you re-assess your acceptance of Belief B.

Assertion A caused me to reject Belief B and the world did not
collapse:
- Bird wattmeters still give useful indications
- ghosts still occur on TVs
- echoes still occur on phone lines
- bidirectional communications still occur on two wire lines
but the simplistic explanations for these phenomena offered by
Belief B need to be re-examined. A better understanding is all
that you stand to gain by discarding Belief B.

...Keith

...Keith

4029. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 12:34:32 UTC
From: kd1@sympatico.ca
Message-ID: <3F48B0D8.199818F@sympatico.ca>
Source record: 109673

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Are you sure you want to discard all thoughts of the instantaneous?
>
> Certainly not! Just thoughts of instantaneous power.
>
> What you are attempting to do is called mind f__king.

Not at all. I am merely presenting you with the logical extensions
of your assertions. That these logical extensions take you into the
land of double-think should cause you to re-examine your assertions,
or ... find the flaws in my logic.

I observe that you choose to comment only on the one rhetorical
question at the end of my post and conclude that you can find no
flaws in my logic. Rather than descending into baseless accusation,
it would be more valuable were you to re-examine your assertions.

...Keith

4030. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 12:40:07 UTC
From: richardharrison@webtv.net
Message-ID: <26331-3F48B227-151@storefull-2312.public.lawson.webtv.net>
Source record: 109677

Tom Donaly wrote:
"You and Richard Harrison are beginning to sound lke Bishop Berkeley."

We are in good company. Terman says on page 84 of his 1955 opus:
"In these equations Zo = sq rt Z/Y is termed the "characteristic impedance" of the line. In the case of radio-frequency lines, Zo can nearly always be assumed to be a pure resistance, as discussed on page 88."

When Terman says SWR = Emax / Emin, it makes no difference whether you use instantaneous values or rms values, so long as you are consistent, the ratio is the same.

Some complained that nobody provided a trustworthy VSWR related to power. Bird Electronic Corporation does:

VSWR = 1+sq rt (reflected pwr/forward pwr) over 1-sq rt (reflected pwr/forward pwr).

Millions of conversions have proved this VSWR from measured powers relation.

Best regards, Richard Harrison, KB5WZI

4031. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 12:40:44 UTC
From: kd1@sympatico.ca
Message-ID: <3F48B24C.C2F0F9D0@sympatico.ca>
Source record: 109674

Richard Harrison wrote:
> For the power sine wave, though the fact that a minus times a minus is a
> plus results in 2x the voltage frequency, dP/dt=0 at maxima.

Alternatively, from amplitude modulation, the product of two sine waves produces a sum and difference frequency. When the two sine waves have the
same frequency (as they due for the voltage and current contributing to the power), the result is a double frequency sine wave and a 0 frequency difference which is the DC or average power.

> A question raised in this thread is, how can energy, which is joules per
> second times seconds, be zero when the number of seconds is zero? The
> answer seems obvious. Zero times anything is zero.

Exactly. And when the voltage or current is always zero, so must be the power.

...Keith

4032. Re: IMAGINARY POWER

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 12:58:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <biacpo$60s$1@hercules.btinternet.com>
Source record: 109675

Dr Slick asked -
> How could you get more power reflected
> than what you put in?

==========

Quite simple! It's "Imaginary power".

As an experienced electrical engineer you should by now be familiar with imaginary quantities. There's no need for confusion.

Mathematics can't be wrong. Only people can be wrong. Just carry on with the calculations. If you asked a real sensible question then eventually you will obtain a real sensible answer.

Reg, G4FGQ

4033. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 13:15:33 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <zpedndA4YcTrJ9WiU-KYvg@comcast.com>
Source record: 109676

"Adam T. Cately" <atcately@bright.net> wrote in message
news:3F48AE6C.C00BA6B4@bright.net...
> <SNIP>
>
> I haven't read the rest of the thread, but here's something glaringly
> obvious...
>
> > Grounding will be easy when I get around to it - I have
> > baseboard hot water radiators that I can ground to.
>
> NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
> as it goes directly to the earth outside the building. The hot water
> pipes are routed through the hot water heater(s) and are NOT a direct
> path to ground.
>
>

A great point however I've tested the system before and after - I
touched various components while transmitting. Before, I would
see a jump or drop in SWR. After, no jump at all.

Based on that rather simple test, I can not assume that it's a
"perfect" ground but I do guess it's "good enough". Besides,
the nearest cold water pipe is 25 feet away.

Thanks for the reminder....

72's de Ken KG0WX

4034. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 13:23:59 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <kcicnRtuk83xIdWiU-KYuQ@crocker.com>
Source record: 109678

"Adam T. Cately" <atcately@bright.net> wrote in message
news:3F48AE6C.C00BA6B4@bright.net...
> <SNIP>
>
> I haven't read the rest of the thread, but here's something glaringly
> obvious...
>
> > Grounding will be easy when I get around to it - I have
> > baseboard hot water radiators that I can ground to.
>
> NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
> as it goes directly to the earth outside the building. The hot water
> pipes are routed through the hot water heater(s) and are NOT a direct
> path to ground.
>

first a couple of truisms:
NEVER say NEVER.
NEVER believe anyone who asserts an ALWAYS.
In the end an easy job is rarely as easy as you first thought.

That being said, NEVER rely on pipes of any kind for safety (either AC or lightning) grounding of equipment, ALWAYS run your own wire to the proper ground rod or electrical service connection as required by electrical codes.

RF "grounds" are another problem. The problem here is to remember that any conductor more than a small fraction of a wavelength will have currents induced in it and thus have a different voltage at one end than the other when exposed to an HF RF field. The real aim here is two fold: First, to provide a low resistance path for 'ground' currents back to the antenna end of the feedline so the currents in the feedline can be properly balanced. Second, to keep all equipment and personel in the antenna field near the same potential to prevent injury and reduce interference.

4035. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 14:10:31 UTC
From: richardharrison@webtv.net
Message-ID: <16541-3F48C757-63@storefull-2311.public.lawson.webtv.net>
Source record: 109681

Keith wrote:
"---you need to explain why you do not reject instantaneous velocity, acceleration, ---."

I don`t reject instantaneous anything including power. Instantaneous power is not particularly useful in working with radio transmission lines.

Like infinity, the infinitesimal is unmeasurable. Like infinity, the infinitesimal is useless in calculations. The idea of the infinitesimal is useful in perceiving targeted values approached as a variable approaches a limit.

A differential "d" is an infinitesimal smaller than a difference. "dy" is the differential of y. "dx" is the differential of x. "dt" is the differential of t. The ratio "dy/dx" is a slope defined at a point and is equal to the limit as x goes to zero of the ratio delta y over delta x.

The basis of differentation is superfluous to this discussion, but Keith asks, why not reject things which are a derivative with respect to time including acceleration.

Acceleration may be a good example. Calculus can give the rate at which a variable varies. On the other hand, it can give a function if the rate of change is given.

Velocity is the variable in acceleration. Assume velocity is increasing and you have a definition of the function. For a given velocity the acceleration can be determined, and for a given acceleration, the velocity can be determined.

My point, repeated again, is that when delta time is zero, no distance is traversed, not that acceleration and velocity are zero.

Power x time = energy. Thast`s how the electric power company calculates your bill. If no time elapses during which power is available, no energy is consumed.

Best regards, Richard Harrison, KB5WZI

4036. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 14:27:09 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <5uycnSj_noWjVtWiXTWJhg@comcast.com>
Source record: 109679

"David Robbins" <k1ttt@arrl.net> wrote in message
news:kcicnRtuk83xIdWiU-KYuQ@crocker.com...
>
> "Adam T. Cately" <atcately@bright.net> wrote in message
> news:3F48AE6C.C00BA6B4@bright.net...
> > <SNIP>
> >
> > I haven't read the rest of the thread, but here's something glaringly
> > obvious...
> >
> > > Grounding will be easy when I get around to it - I have
> > > baseboard hot water radiators that I can ground to.
> >
> > NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
> > as it goes directly to the earth outside the building. The hot water
> > pipes are routed through the hot water heater(s) and are NOT a direct
> > path to ground.
> >
>
> first a couple of truisms:
> NEVER say NEVER.
> NEVER believe anyone who asserts an ALWAYS.
> In the end an easy job is rarely as easy as you first thought.
>
> That being said, NEVER rely on pipes of any kind for safety (either AC or
> lightning) grounding of equipment, ALWAYS run your own wire to the proper
> ground rod or electrical service connection as required by electrical
codes.
>
> RF "grounds" are another problem. The problem here is to remember that
any
> conductor more than a small fraction of a wavelength will have currents
> induced in it and thus have a different voltage at one end than the other
> when exposed to an HF RF field. The real aim here is two fold: First, to
> provide a low resistance path for 'ground' currents back to the antenna
end
> of the feedline so the currents in the feedline can be properly balanced.
> Second, to keep all equipment and personel in the antenna field near the
> same potential to prevent injury and reduce interference.
>
>

Ha! Great point!

I'm planning on buying a Radio Shack outlet tester (22-141, pg 238 of
the last catalog) - if it shows my outlets are configired properly, I plan
on
running a heavy insulated ground wire from the outlet to the pipe (8").

Does this sound right to you? As far as RF goes, I can touch *any*
component of the system and not see any DC current, SWR or other
changes at all when transmitting so I guess I've got a pretty good RF
ground already.

Then there is the performance issue - the solar numbers haven't been
very good for some time but yesterday I worked stations coast to
coast on 20 & 40 with 5 watts and got some impressive signal reports.
So, whatever I'm doing, it seems to be working OK.

72's all De Ken KG0WX/QRP

4037. Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 14:38:50 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <mbKdnRmLXY1nUNWiU-KYuA@comcast.com>
Source record: 109680

At my dipole's feedpoint I have a coil of rg8 mini coax
wrapped 6 turns in a 2-5/8" dia circle. I found a program
for calculating coaxial traps for dipoles and here are the
numbers it gave me:

Form diameter 2.375"
Coax diameter 0.242"
Capacitance/ft 25.20pf
Turns 6.000
Coil length 1.45"
Coax length 50.30"
End sensitivity 99.130 khz/inch
Turn sensitivity 257.94 khz/inch
Length/Diameter 0.550
Inductance (L) 2.342 uH
Capacitance (C) 105.620 pF
Reactance (X) 148.90 ohms

The program says this coil is resonant (?) at 10.120 mhz

Now here comes the really dumb question - will this cause
a problem on 30 meters? I seem to hear OK but I've not
yet tried to make any contacts...

My SWR meter indicates a 3:1 SWR there but my nifty
Z11 autotuner tunes it just fine.......

What am I not understanding here?

Ken KG0WX

4038. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:00:15 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f48d471_3@corp.newsgroups.com>
Source record: 109682

Roy Lewallen wrote:
> Although it's not really relevant to the discussion at hand, I believe a
> valid argument could be made that if a2 isn't equal to zero, then S11
> isn't a reflection coefficient at all. It surely isn't the reflection
> coefficient at port 1, anyway.

Actually, it is, Roy. s11 is the *physical* reflection coefficient.
For instance, in the following two-port network:

source---50 ohm feedline---+---1/2WL 150 ohm feedline---50 ohm load

s11 is *defined* as the input reflection coefficient with the output
port terminated by a matched load (ZL=150 ohms sets a2=0). s11
continues to be *defined* as 0.5 even when a2 is not zero.

s11 = (150-50)/(150+50) = 0.5

Since a Z0-match exists at '+', the reflection coefficient on the
50 ohm feedline is zero. rho = Sqrt(Pref/Pfwd)

For a two-port network with a2 not equal to zero, the reflection
coefficient 's11' is NOT equal to the reflection coefficient 'rho'.

The energy analysis on my web page deals only with physical reflection
coefficients. If 'rho' is not a physical reflection coefficient, then
it is the END RESULT of a mathematical calculation and is not the
CAUSE of anything. If a source doesn't "see" a physical impedance
discontinuity, it doesn't "see" anything except forward and reflected
waves. Coherent waves traveling in opposite directions are "unaware" of
each other. Coherent waves traveling in the same direction merge, lose
their separate identies, and become indistinguishable from one another.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4039. Re: Re-Normalizing the Smith Chart (Changing the SWR into the sameload)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:04:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f48d578_3@corp.newsgroups.com>
Source record: 109683

kd1@sympatico.ca wrote:

> W5DXP wrote:
>
>>kd1@sympatico.ca wrote:
>>
>>>Are you sure you want to discard all thoughts of the instantaneous?
>>
>>Certainly not! Just thoughts of instantaneous power.
>>
>>What you are attempting to do is called mind f__king.
>
>
> Not at all. I am merely presenting you with the logical extensions
> of your assertions.

You are not presenting the truth. Inserting extensions into my mind
that do not exist is called mind f__king. Please don't do that.

> I observe that you choose to comment only on the one rhetorical
> question at the end of my post and conclude that you can find no
> flaws in my logic. Rather than descending into baseless accusation,
> it would be more valuable were you to re-examine your assertions.

Would you please allow me to get my Mother buried first? I simply
do not have time to re-examine my assertions at the moment.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4040. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:15:28 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkhljm8csn9o2e@corp.supernews.com>
Source record: 109684

Dan wrote:
> Now that the various typo mistakes have been corrected, and putting
> aside for the moment the name calling and ad hominem arguments, could
> it be that _both_ sides in this discussion are correct? Camp 'A' says
> that the reflection coefficient is computed the classical way, without
> using Zo conjugate, and offers various mathematical proofs and
> discussions of infinitely long lines. Camp 'B' says the reflection
> coefficient is computed with Zo* (Zo conjugate) in the numerator, and
> offers explanations dealing with the conservation of energy and
> maximum transfer of power.
>
> Both sides may be correct since they are talking about _two different_
> meanings for the term "reflection coefficient." One has to do with
> voltage (or current) traveling waves and the other has to do with
> power.

If a lossy line is terminated with the complex Z0,
there is no reflection from the load, but the
maximum possible power is not delivered. If the
load is made equal to the complex conjugate of
Z0 the maximum *forward power* is delivered but
there is a reflected power (VSWR is not 1:1).

It is difficult to say that the maximum *power* is
delivered without knowing the generator impedance,
since it is involved in any so-called "conjugate
match". For a lossy line, the idea of conjugate
match is, at best, very approximate anyway. And
generator impedance is a mystery in most, but not
all, transmitter PA situations. One possible
exception: a large amount of negative feedback
helps to determine, to some extent, output
impedance, for a signal with time-varying
amplitude (e.g. SSB).

It seems to me to be clear that the use of Z0* in
the reflection coefficient equation has not been
corroborated (see Roy's post), but the use of
ZL=ZO* has been. The two ideas are not equivalent.

After looking at some examples, using the exact
complex hyperbolic equations with Mathcad, it is
obvious that a line must be very lossy to make a
significant difference whether ZL or ZL* is used
to terminate the line. Still, it is important to

understand the basic principles involved, so this exercise is not foolishness at all.

A word about "credentials". We all respect established and competent authors. But I have noticed on several occasions that blind faith has some exceptions. As an experienced author, I am personally familiar with this problem.

G. Gonzalez (highly respected) "Microwave Transistor Amplifiers" second edition, has a good discussion of Power Waves, based on Kurokawa (I also have his article). There are no transmission lines, and the term ZS* (ZS=generator impedance) is used. In particular, a power wave reflection coefficient is defined:

Gp = (ZL-ZS*)/(ZL+ZS)

which looks quite familiar, with ZS replacing Z0. Also, a voltage reflection coefficient:

Gv = [Zs/Zs*] x [(ZL-ZS*)/(ZL+ZS)]

and a current reflection coefficient

Gv = Gp.

The author also defines two-port scattering parameters in terms of power waves, in which ZS* and ZL* appear.

For the purposes of the present topic, involving transmission lines, it seems best to stay away from power waves, without a lot more studying.

Bill W0IYH

4041. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:27:02 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <aP42b.7290$jY2.2107@newsread1.news.atl.earthlink.net>
Source record: 109685

Roy:

We are discussing *very* fine points here, but...

[snip]
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vkgai075pudae2@corp.supernews.com...
> I've never seen the (voltage) reflection coefficient defined as anything
> other than the ratio of reflected voltage to forward voltage. Do you
> have any reputable source that defines it differently? Certainly, that
> definition is central to the analysis I presented, and leads irrevocably
> to the generally accepted formula relating it to Z0 and Zl.
>
> Roy Lewallen, W7EL
[snip]

The definition of the reflection coefficient is dependent upon what you define the "reflected voltage" to be.

Consider the classical bridge circuit for measuring reflection coefficients.

If Z is an unknown load presented to a generator of internal impedance R and that internal impedance R is used as the "reference" impedance to observe/measure the reflected voltage b and that reflected voltage b is calculated/measured by observation of the voltage v across the load Z and the current i through the load Z then the classical definition of a reflected voltage would be calculated as:

b = v - Ri = Zi - Ri = (Z - R)i Volts.

and the incident voltage a would be the Thevinins equivalent voltage across the sum of Z and R, i.e.

a = (Z + R)i

which from the classical definition of the reflection coefficient as the ratio of the reflected to incident voltage as rho = b/a would yeild the usual formula:

rho = b/a = (Z - R)i/(Z + R)i = (Z - R)/(Z+ R).

In which no conjugates appear!

Now if we take the internal/reference impedance R to be complex as R = r + jx then for a "conjugate match" the unknown Z would be the conjugate of the internal/reference impedance and so that would be:

Z = r - jx

Thus the total driving point impedance faced by the incident voltage a would be 2r:

R + Z = r + jx + r - jx = 2r

and the current i through Z would be i = a/2r with the voltage v across Z being v = a/2.

Now the reflected voltage under this conjugate match would not be zero, rather it would be:

b = (Z - R)i = ((r - jx) - (r + jx))i = (r - r -jx -jx)i = -2jxi = -2jxa/2r = -jax/r

and the reflection coefficient value under this conjugate match would be simply:

b/a = rho = - jx/r

Thus I conclude that, under the classical definitions, when one has a "conjugate match" [i.e. maximum power transfer] the reflected voltage and the reflection coefficient are not zero.

Using the classical definitions, the reflected voltage and the reflection coefficient are only zero for an "image match", i.e. when the unknown Z is equal to the internal/reference impedance R and not it's conjugate.

In summary:

Under the classical definition of rho = (Z - R)/(Z + R) rho will be not be zero for a "conjugate match" and in fact there will be a "residual" reflected voltage of -jx/r times the incident voltage at a conjugate match. The only time the classical definition of rho and the reflected voltage is null is for an "image match" when the load equals the reference impedance. [Note some like Cecil call the "image match" the "Zo match".]

And so...

Unless one changes ones definition of the reflected voltage/reflection coefficient to utilize the conjugate of the internal impedance as the "reference" impedance then the reflected voltage is not zero at a conjugate match. End of story.

But, as Slick asked, if one wishes the reflected voltage and reflection coefficient to be zero for a "conjugate match" then one cannot use the "classical" definition of rho = (Z - R)/(Z + R) and instead one would have to use the "alternative" definition of rho = (Z - conj(R))/(Z + conj(R)).

And as I stated in a previous post in this thread, one is free to choose his/her own definition of rho and there is nothing wrong with that as long as one continues to use that consistently.

It's all a matter of perspective and viewpoint. Give me your results for any arbitrary reference impedance and provided you have not done anything inconsistent in your measurements or mathematics then I can readily convert [mathematically] all of your measurements and conclusions into my own

viewpoint and my own reference impedance. Both results will always yeild the same i's and v's only the view of the waves will have changed. As I stated in my earlier posting, the wave vectors are really just another view of the electrical vectors and by setting the reference impedance one is merely changing the matrix transformation that transforms the electrical vectors into the wave vectors. One can then change them again by using another transformation. The only stipulation is that the transformaton be non-singular, i.e. the choice of reference impedance and hence the transformation matrix M that transforms from [v, i] to [a, b] must not be singular.

See anything wrong with this analysis?

--
Peter K1PO
Indialantic By-the-Sea, FL.

4042. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:30:49 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <JS42b.7291$jY2.2636@newsread1.news.atl.earthlink.net>
Source record: 109686

Cecil:

[snip]
> s11 is a reflection coefficient that has the special condition that
> a2 must be equal zero. When a2 is not equal zero, the s11 reflection
> coefficient and the apparent reflection coefficient are not the same.
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

No! The scattering paramters, e.g for a two-port the s11, s12, s21 and s22 are all parameters fixed by the network and are not dependent upon either the independent or dependent variables! i.e. b1 = s11*a1 + s12*a2, and b2 = s21*a1 + s22* a2.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4043. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:38:34 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <_Z42b.7295$jY2.2393@newsread1.news.atl.earthlink.net>
Source record: 109687

Roy:

[snip]
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vkgasjm2na0t94@corp.supernews.com...
> This is interesting. But how did it lead you to the equation you
> determined must be correct? That is, what definition of reflection
> coefficient did you start with, where did you get it, and how did you
> get from there to the reflection coefficient equation you presented?
>
> I assume that, consistent with the admonition in the last paragraph of
> your posting, you were "careful to follow through and be consistent with
> your definitions, measurements, algebra, and arithmetic". It would be
> very instructive for us to be able to follow the process you did in
> coming to what you feel is the "right answer".
>
> Roy Lewallen, W7EL
[snip]

I followed up with a complete, and I hope simple and easy to follow,
algebraic development in another nearby posting. Have a look and let us
know what you think.

BTW... I don't necessarily agree with Slick's defintition of the reflection
coefficient and for sure, his is not the one I use. But I will defend to
the death his right to use the one he defines, as long as all of his
subsequent calculations and measurements are consistent with that
definition.

Slice and I will always end up with the same voltages v and currents i, it's
just that our wave variables a and b won't agree!

Viewing "waves" is just a viewpoint! One has to view them "through" an
instrument called a reflectometer. When viewed through ammeters and
voltmeters we will all measure the same things.

Only the "electricals" the v and I are "real"! The "waves" the a and b are
just different manifestations of v and i as viewed through and instrument
[reflectometer] using a, perhaps arbitrary, reference impedance, or matrix
transformation.

Sorry Cecil. :-)

--
Peter K1PO
Indialantic By-the-Sea, FL.

4044. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:39:29 UTC
From: Roger Leone <arleone.removethis.@inreach.com>
Message-ID: <U_42b.765$NU3.376@news.inreach.com>
Source record: 109688

Ken:

You haven't constructed a trap. A trap is a parallel resonant circuit, meaning the inductance and capacitance are in parallel with each other. At resonance it presents a high impedance. A trap can be constructed with coaxial cable, but to get the inductance and capacitance in parallel you have to cross connect the inner and outer conductors. See: http://www3.sympatico.ca/wrgraham/ve3etkweb/coaxtraps.html

You have wound the coax into a choke inductor but the capacitance you calculated is between the inner and outer conductors and is not in parallel with the inductance of the windings.

If your calculation of the inductance is correct (2.342 uh), by itself it doesn't have a very high impedance at 10 mhz and doesn't serve very well as a choke. It may be doing more harm than good since a resonant dipole should have better than a 3:1 SWR. Have you tried the dipole without it?

Roger K6XQ

4045. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:40:03 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <n%42b.7298$jY2.2745@newsread1.news.atl.earthlink.net>
Source record: 109689

Reg:

[snip]
"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bi9b0c$i00$1@hercules.btinternet.com...
> Peter, what an excellent, straight-forward, plain
> -English, explanation. And you didn't enlist the
> aid of a single guru. Not even Terman or the
> ARRL handbook. ;o)
> -----
> Reg
[snip]

Heh, heh...

I beleive in working it all out from first principles, can't trust anybody
else, except of course you and your wonderful programs. :-)

--
Peter K1PO
Indialantic By-the-Sea, FL.

4046. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:41:43 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkhn4ti19gto0c@corp.supernews.com>
Source record: 109690

William E. Sabin wrote:
> Dan wrote:
>
>> Now that the various typo mistakes have been corrected, and putting
>> aside for the moment the name calling and ad hominem arguments, could
>> it be that _both_ sides in this discussion are correct? Camp 'A' says
>> that the reflection coefficient is computed the classical way, without
>> using Zo conjugate, and offers various mathematical proofs and
>> discussions of infinitely long lines. Camp 'B' says the reflection
>> coefficient is computed with Zo* (Zo conjugate) in the numerator, and
>> offers explanations dealing with the conservation of energy and
>> maximum transfer of power.
>>
>> Both sides may be correct since they are talking about _two different_
>> meanings for the term "reflection coefficient." One has to do with
>> voltage (or current) traveling waves and the other has to do with
>> power.
>
>
> If a lossy line is terminated with the complex Z0, there is no
> reflection from the load, but the maximum possible power is not
> delivered. If the *load* is made equal to the complex conjugate of Z0
> the maximum *forward power* is delivered but there is a reflected power
> (VSWR is not 1:1).
>
> It is difficult to say that the maximum *power* is delivered without
> knowing the generator impedance, since it is involved in any so-called
> "conjugate match". For a lossy line, the idea of conjugate match is, at
> best, very approximate anyway. And generator impedance is a mystery in
> most, but not all, transmitter PA situations. One possible exception: a
> large amount of negative feedback helps to determine, to some extent,
> output impedance, for a signal with time-varying amplitude (e.g. SSB).
>
> It seems to me to be clear that the use of Z0* in the reflection
> coefficient equation has not been corroborated (see Roy's post), but the
> use of ZL=ZO* has been. The two ideas are not equivalent.
>
> After looking at some examples, using the exact complex hyperbolic
> equations with Mathcad, it is obvious that a line must be very lossy to
> make a significant difference whether ZL or ZL*

Correction: Z0 or Z0*

is used to terminate the
> line. Still, it is important to understand the basic principles

> involved, so this exercise is not foolishness at all.
>
> A word about "credentials". We all respect established and competent
> authors. But I have noticed on several occasions that blind faith has
> some exceptions. As an experienced author, I am personally familiar with
> this problem.
>
> G. Gonzalez (highly respected) "Microwave Transistor Amplifiers" second
> edition, has a good discussion of Power Waves, based on Kurokawa (I also
> have his article). There are no transmission lines, and the term ZS*
> (ZS=generator impedance) is used. In particular, a power wave reflection
> coefficient is defined:
>
> Gp = (ZL-ZS*)/(ZL+ZS)
>
> which looks quite familiar, with ZS replacing Z0. Also, a voltage
> reflection coefficient:
>
> Gv = [Zs/Zs*] x [(ZL-ZS*)/(ZL+ZS)]
>
> and a current reflection coefficient
>
> Gv = Gp.

Correction: Gi = Gp

>
> The author also defines two-port scattering parameters in terms of power
> waves, in which ZS* and ZL* appear.
>
> For the purposes of the present topic, involving transmission lines, it
> seems best to stay away from power waves, without a lot more studying.
>
> Bill W0IYH
>

4047. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:42:16 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <s152b.7301$jY2.4316@newsread1.news.atl.earthlink.net>
Source record: 109691

Slick:

[snip]
> Correction: rho = (Z - conj(R))/(Z + (R)), the conjugate being
> only in the denominator.
>
> Slick
[snip]

Well here we have to part company.

Not using the same "thing" in both numerator and denominator *is* being inconsistent!

See my algebraic development in another posting on this thread.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4048. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:43:35 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <ul6dnQOomP-5QNWiU-KYvg@crocker.com>
Source record: 109692

"Ken Bessler" <kg0wx@NOSPAMyahoo.com> wrote in message
news:5uycnSj_noWjVtWiXTWJhg@comcast.com...
>
> "David Robbins" <k1ttt@arrl.net> wrote in message
> news:kcicnRtuk83xIdWiU-KYuQ@crocker.com...
> >
> > "Adam T. Cately" <atcately@bright.net> wrote in message
> > news:3F48AE6C.C00BA6B4@bright.net...
> > > <SNIP>
> > >
> > > I haven't read the rest of the thread, but here's something
glaringly
> > > obvious...
> > >
> > > > Grounding will be easy when I get around to it - I have
> > > > baseboard hot water radiators that I can ground to.
> > >
> > > NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
> > > as it goes directly to the earth outside the building. The hot water
> > > pipes are routed through the hot water heater(s) and are NOT a direct
> > > path to ground.
> > >
> >
> > first a couple of truisms:
> > NEVER say NEVER.
> > NEVER believe anyone who asserts an ALWAYS.
> > In the end an easy job is rarely as easy as you first thought.
> >
> > That being said, NEVER rely on pipes of any kind for safety (either AC
or
> > lightning) grounding of equipment, ALWAYS run your own wire to the
proper
> > ground rod or electrical service connection as required by electrical
> codes.
> >
> > RF "grounds" are another problem. The problem here is to remember that
> any
> > conductor more than a small fraction of a wavelength will have currents
> > induced in it and thus have a different voltage at one end than the
other
> > when exposed to an HF RF field. The real aim here is two fold: First,
to
> > provide a low resistance path for 'ground' currents back to the antenna
> end

> > of the feedline so the currents in the feedline can be properly
balanced.
> > Second, to keep all equipment and personel in the antenna field near the
> > same potential to prevent injury and reduce interference.
> >
> >
>
> Ha! Great point!
>
> I'm planning on buying a Radio Shack outlet tester (22-141, pg 238 of
> the last catalog) - if it shows my outlets are configired properly, I plan
> on
> running a heavy insulated ground wire from the outlet to the pipe (8").
>
> Does this sound right to you? As far as RF goes, I can touch *any*
> component of the system and not see any DC current, SWR or other
> changes at all when transmitting so I guess I've got a pretty good RF
> ground already.
>
> Then there is the performance issue - the solar numbers haven't been
> very good for some time but yesterday I worked stations coast to
> coast on 20 & 40 with 5 watts and got some impressive signal reports.
> So, whatever I'm doing, it seems to be working OK.
>
> 72's all De Ken KG0WX/QRP
>
>
tying the radiator to the electric service neutral probably won't hurt. if the radiator is plumbed with metal pipe and is up to code they are probably tied together somewhere else also. and its always a good idea to be sure your outlets are wired properly, especially in older homes.

if you can touch stuff and not see any changes that probably means that you have a low enough resistance connection back the the feedline point at the antenna. that is where lots of people mess up, they ground the shack end of the coax, but then connect just the center conductor to a random wire or something like that outside. this arrangement forces the return current to flow through ground, the shack equipment, back out the outside of the coax and then back inside the coax to complete the circuit. this causes all sorts of problems like the infamous rf burns from the key or mic, interference to nearby tv, stereo, and computer equipment, etc. even balanced lines and antennas are susceptable to this. if the antenna isn't really balanced (say one leg is near the house the other is in the clear) the unbalance in the return path can cause current to flow back through wiring in the house to get back to the feedline.

with the poor solar conditions right now you are probably doing just fine, just be sure you have a good safety ground and enjoy.

4049. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 15:54:02 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2umhkv0qhgm8dhba5u6bkhnbl6svlakvkm@4ax.com>
Source record: 109693

On Sun, 24 Aug 2003 15:27:02 GMT, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:
>
>See anything wrong with this analysis?
>

Hi Peter,

One thing: you are expecting everyone to agree that the source has a characteristic Z.

The chasm that separates factions is found in this alone where many who say, no "it is NOT 50 Ohms" (or "it doesn't matter") are loath to come up with an actual value to conjugate (in other words, a sterile position). Such a forced choice leads obviously to the deflation of pet theories. To date their best argument is you cannot possibly know that value (for any of a variety of reasons, unrelated to simply sitting down at the bench and measuring an actual value). In short, institutionalized ignorance, embraced with a mystic missionary zeal, is their crowing logic.

But I do enjoy their examples and logic puzzles reminiscent of the necromancer's formulï¿½ for transmutation of gold into lead. The unrequited dreams would be fulfilled if only the discovery of the Philosopher's Stone could be realized. Hence debate proceeds with the leaps and twirls of zen-cartwheeling.

73's
Richard Clark, KB7QHC

4050. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:01:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b2ohkv0pn5hmrisaqsgbv52lmbp3emci51@4ax.com>
Source record: 109694

On Sun, 24 Aug 2003 08:40:44 -0400, kd1@sympatico.ca wrote:

>> For the power sine wave, though the fact that a minus times a minus is a
>> plus results in 2x the voltage frequency, dP/dt=0 at maxima.
>
>Alternatively, from amplitude modulation, the product of two sine waves
>produces a sum and difference frequency. When the two sine waves have
>the
>same frequency (as they due for the voltage and current contributing to
>the power), the result is a double frequency sine wave and a 0 frequency
>difference which is the DC or average power.
>

Hi Keith,

The two statements above are in not about the same thing within the
context of the subject.

The products of two sine waves as you describe are non-linear and are
not found on the Smith Chart, nor in the transmission line. [Except
insofar as it is forced deliberately (and that has yet to be revealed
by any correspondent), or through negligence of line maintenance with
corrosion products and dissimilar metals interfaced.]

73's
Richard Clark, KB7QHC

4051. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:04:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bianm3$i2t$1@titan.btinternet.com>
Source record: 109695

> > > NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
> > > as it goes directly to the earth outside the building. The hot water
> > > pipes are routed through the hot water heater(s) and are NOT a direct
> > > path to ground.
> > >
==========

Not entirely correct.

ALWAYS use the cold water pipe.

And if you have a hot water pipe ALWAYS connect that in parallel.

Two connections in parallel ALWAYS have a lower impedance than either of them.

Hot water, wall-mounted, central heating radiators are convenient connecting points.

If you have a gas pipe then make it a three-some.

And of course take advantage of the electricity supply ground via the domestic power wiring.

If there's a 14-gauge wire running from a bedroom shack, through the window, down the outside wall, to a bunch of buried radials in the back yard then include it with the others.

The whole system is just a bunch of random length radials and, up to a break-even point, the more the merrier.

If any one of the principal ground connections can be broken without having any affect on the tuner settings then you've already gone far enough.

But whatever you have there's no guarantee you will be free of RF in the shack. RF comes in through the windows, ceiling, walls, doors and floor of the shack direct from the high-power near-field of the antenna. And you can't criticise the antenna - it's only doing its job.

If in a bedroom, as a last desperate resort, take up the carpet or lino and cover the floor-boards with chicken wire. Re-lay the carpet or lino. Connect the chicken wire from two spaced points to the terminal at the rear of the PA which is marked "Ground".

Reg, G4FGQ

4052. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:13:14 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <QvGdnWvf3dOGedWiXTWJhQ@comcast.com>
Source record: 109696

"Roger Leone" <arleone.removethis.@inreach.com> wrote in message
news:U_42b.765$NU3.376@news.inreach.com...
> Ken:
>
> You haven't constructed a trap. A trap is a parallel resonant circuit,
> meaning the inductance and capacitance are in parallel with each other.
At
> resonance it presents a high impedance. A trap can be constructed with
> coaxial cable, but to get the inductance and capacitance in parallel you
> have to cross connect the inner and outer conductors. See:
> http://www3.sympatico.ca/wrgraham/ve3etkweb/coaxtraps.html
>
> You have wound the coax into a choke inductor but the capacitance you
> calculated is between the inner and outer conductors and is not in
parallel
> with the inductance of the windings.
>
> If your calculation of the inductance is correct (2.342 uh), by itself it
> doesn't have a very high impedance at 10 mhz and doesn't serve very well
as
> a choke. It may be doing more harm than good since a resonant dipole
should
> have better than a 3:1 SWR. Have you tried the dipole without it?
>
> Roger K6XQ
>
>
>

The dipole resonates (or at least has a 1:1 match) at 2.31 mhz. Without
the coil, I had problems with RF in the shack. A nice fellow changed my
mind from buying a balun to simply winding the coil at the feedpoint.
It seems to have worked. I suppose I could wind more turns to get a
higher inductance - what amount would you advise?

Thanks for your insight as to the differance between my coil and a trap!

Ya learn something new everyday..... :-)

72's de Ken KG0WX

4053. Re: Sloper

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:14:36 UTC
From: Daniel Curry <dod1450@nospampanix.com>
Message-ID: <biao9c$1o7$1@reader2.panix.com>
Source record: 109697

I agree with Cecil. I who now have three slopers for the
following bands, 60,80, and 40/160.
Every contact that I had all been solid copy. This does not
take in teh current sun spot cycle problems.

W5DXP <Cecil.A.Moore@ieee.org> wrote:
> Gregory L. Dome wrote:
> > I was interested in having a multiband antenna, rather than a dipole for
> > single coverage and don't have room for a fan array.

> Feed the dipole with window-line and use it on all HF bands.
> --
> 73, Cecil http://www.qsl.net/w5dxp

> -----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
> http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
> -----== Over 80,000 Newsgroups - 16 Different Servers! =-----

--
dod1450@panix.com
Daniel Curry
PGP : AD5A 96DC 7556 A020 B8E7 0E4D 5D5E 9BA5 C83E 8C92

4054. Choice of Material for Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:20:56 UTC
From: AL KA5JGV <ABurzynski@nojunk.satx.rr.com>
Message-ID: <IB52b.9105$bj.8623@twister.austin.rr.com>
Source record: 109699

Will there be a significant difference in the performance of two shielded loop antennas (used for receive only) if the only difference between them is that one is made of copper and the other of aluminum? Does one "shield" better than the other? By performance I'm looking at depth of null, SN ratio, or overall gain. Any other comments on choice of material greatly appreciated.

Thank you.
Al
KA5JGV

4055. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:22:43 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <adohkv0fai6dpaucuik90ecb3rdeqb3a6u@4ax.com>
Source record: 109698

On Sun, 24 Aug 2003 08:38:50 -0600, "Ken Bessler"
<kg0wx@NOSPAMyahoo.com> wrote:

>Inductance (L) 2.342 uH
>Capacitance (C) 105.620 pF
>Reactance (X) 148.90 ohms
>
>
>The program says this coil is resonant (?) at 10.120 mhz
>
>Now here comes the really dumb question - will this cause
>a problem on 30 meters? I seem to hear OK but I've not
>yet tried to make any contacts...
>
>My SWR meter indicates a 3:1 SWR there but my nifty
>Z11 autotuner tunes it just fine.......
>
>What am I not understanding here?
>
>Ken KG0WX

Hi Ken,

Not much reactance overall for one. I've lost track what bands you
want to work, but the SWR would suggest not much Q either. There is
also the matter of how long your cable is too at any particular
wavelength; at some lengths, like half wave, it just doesn't matter if
you had a choke or not (the radiation resistance would snub the
current anyway).

You got 3:1 for any number of reasons, but your tuner took care of it.
That's what a tuner is for. [However, as a solution it is unrelated
to your original problem of a hot coax shield.]

Feeling a little chagrined at accelerating the super glue bond? ;-)

Offhand I would offer that you are probably out of the woods. Just
leave it alone barring repeated symptoms that lead you here.

73's
Richard Clark, KB7QHC

4056. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:26:00 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkhpnc3f4aqe07@corp.supernews.com>
Source record: 109700

Richard Clark wrote:

>
>To date their best argument is you cannot possibly know
> that value (for any of a variety of reasons, unrelated to simply
> sitting down at the bench and measuring an actual value). In short,
> institutionalized ignorance, embraced with a mystic missionary zeal,
> is their crowing logic.

The problem lies in the difficulty of measuring or
calculating Zs, especially for signals that have
large variations in amplitude, such as SSB.

There is no institutionalized ignorance, just a
lot of skepticism regarding the reliability of the
analysis methods and the measurement methods.

Bill W0IYH

4057. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:33:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <22qhkvkp0pts1361bsa53660grmb6u0bqs@4ax.com>
Source record: 109701

On Sun, 24 Aug 2003 12:22:34 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>[*] Well-known to some college students in the USA, perhaps? I'd never
>heard of him, but Dan's summary suggests this book might be worth
>looking for.

Hi Ian,

Any university student in course work relating to Transmission lines
would have a copy. It comes from a successful line of tutorials known
as "Schaum's Outlines."

Chipman also discusses the relevancy of the characteristic Z of a
source to SWR, which is tucked away in the unread part. ;-)

73's
Richard Clark, KB7QHC

4058. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:42:26 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkhqnbonua0o89@corp.supernews.com>
Source record: 109702

A coil of coax has capacitance between turns. This makes the coil look like a parallel resonant circuit -- like a trap -- at some frequency. The most effective choke is self resonant at the frequency of use. The diameters and numbers of turns for coax choke baluns given in the _ARRL Antenna Book_ are ones that result in self-resonance at the center of the recommended operating range. These were determined by measurement with a vector impedance meter. An antenna analyzer can be used just as well for measurement of choke impedance, by tying the inner and outer conductors together, connecting one end of the choke to the analyzer "hot" lead and the other to the analyzer ground. The higher the impedance, the better.

Roy Lewallen, W7EL

Roger Leone wrote:
> Ken:
>
> You haven't constructed a trap. A trap is a parallel resonant circuit,
> meaning the inductance and capacitance are in parallel with each other. At
> resonance it presents a high impedance. A trap can be constructed with
> coaxial cable, but to get the inductance and capacitance in parallel you
> have to cross connect the inner and outer conductors. See:
> http://www3.sympatico.ca/wrgraham/ve3etkweb/coaxtraps.html
>
> You have wound the coax into a choke inductor but the capacitance you
> calculated is between the inner and outer conductors and is not in parallel
> with the inductance of the windings.
>
> If your calculation of the inductance is correct (2.342 uh), by itself it
> doesn't have a very high impedance at 10 mhz and doesn't serve very well as
> a choke. It may be doing more harm than good since a resonant dipole should
> have better than a 3:1 SWR. Have you tried the dipole without it?
>
> Roger K6XQ
>
>
>
>

4059. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:45:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <5aqhkvkcv68jfcv8jggul9hne9r3jhuds3@4ax.com>
Source record: 109703

On Sun, 24 Aug 2003 11:26:00 -0500, "William E. Sabin"
<sabinw@mwci-news> wrote:

>Richard Clark wrote:
>
>>
>>To date their best argument is you cannot possibly know
>> that value (for any of a variety of reasons, unrelated to simply
>> sitting down at the bench and measuring an actual value). In short,
>> institutionalized ignorance, embraced with a mystic missionary zeal,
>> is their crowing logic.
>
>The problem lies in the difficulty of measuring or
>calculating Zs, especially for signals that have
>large variations in amplitude, such as SSB.
>
>There is no institutionalized ignorance, just a
>lot of skepticism regarding the reliability of the
>analysis methods and the measurement methods.
>
>Bill W0IYH
>

Hi Bill,

If the best that skeptics can offer to methods described and data
obtained are "it's not important" or "the time is not justified going
there;" then that is not a particularly high bar of excellence in
reasoning and remains thinly veiled institutionalized ignorance.

Or call it intellectual glaciation, the insurmountable obstacles plea
as argument defending naysaying is frayed and time worn. This is all
"special engineering olympics" caliber justification. Perhaps the
correspondents who enter into these debates should have their
handicaps posted somewhere so the odds makers could weigh the risks of
following such gold medal champions.

73's
Richard Clark, KB7QHC

4060. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:46:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkhqujnt8eg53f@corp.supernews.com>
Source record: 109704

Winding the coil at the feedpoint creates a choke, known also as a "current balun". It serves the primary function of a balun which, for coax, is to prevent current flow on the outside of the coax.

As I mentioned in another posting, the most effective choke is one that's self-resonant at the frequency of operation. A typical choke make by winding the wire in a flat coil like a coil of rope is very effective over about three ham bands, if it's resonant at the center of the range.

Increasing the number of turns could make your choke more of less effective, depending on where its self resonance now is compared to your operating frequency.

Roy Lewallen, W7EL

Ken Bessler wrote:
>
> The dipole resonates (or at least has a 1:1 match) at 2.31 mhz. Without
> the coil, I had problems with RF in the shack. A nice fellow changed my
> mind from buying a balun to simply winding the coil at the feedpoint.
> It seems to have worked. I suppose I could wind more turns to get a
> higher inductance - what amount would you advise?
>
> Thanks for your insight as to the differance between my coil and a trap!
>
> Ya learn something new everyday..... :-)
>
> 72's de Ken KG0WX
>
>

4061. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:52:40 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <--SdnYoKRcrEcNWiXTWJkA@comcast.com>
Source record: 109705

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:adohkv0fai6dpaucuik90ecb3rdeqb3a6u@4ax.com...
> Hi Ken,
>
> Not much reactance overall for one. I've lost track what bands you
> want to work, but the SWR would suggest not much Q either. There is
> also the matter of how long your cable is too at any particular
> wavelength; at some lengths, like half wave, it just doesn't matter if
> you had a choke or not (the radiation resistance would snub the
> current anyway).
>
> You got 3:1 for any number of reasons, but your tuner took care of it.
> That's what a tuner is for. [However, as a solution it is unrelated
> to your original problem of a hot coax shield.]
>
> Feeling a little chagrined at accelerating the super glue bond? ;-)
>
> Offhand I would offer that you are probably out of the woods. Just
> leave it alone barring repeated symptoms that lead you here.
>
> 73's
> Richard Clark, KB7QHC

I have used baking soda as an accelerator for years - works great
everytime. Just don't let the puff of smoke that comes out get into
your nostril membranes or your eyes..... nasty reaction, then!

Winding the coil had several good effects:

1) No more rfi in my PC speakers
2) No more fluctuating SWR readings
3) More consistant (and faster) autotuner action

So, it works - thanks to all the advice I got here (it really
makes me feel like the tech + KB0PWC I started out as),
I've got a viable radiation system.

I'll have to wait for the winter 160m season to see how
well the system gets out on that band - W7EL Roy suggested
I model the antenna on EZNEC and compare the resonance
points and SWR bandwidth. I think (?) I have the program
figgured out and it appears his worry about the bricks in my
building effecting the antenna are somewhat proper.

However, the performance of this antenna in the AM broad-
cast band is SUPERB! I'm hearing stations all over the band

at night, from as far away as Chicago and Los Angeles. So I've got hope the antenna won't be a complete flop on 160.

Last night I worked several of the Ohio QSO party stations on 40 meters with many amazed at my "QRP with a wire" setup..... not to bad from Colorado.....

72's de Ken KG0WX

4062. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 16:57:36 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <C-6dnYDh3u8ec9WiU-KYuA@comcast.com>
Source record: 109706

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:22qhkvkp0pts1361bsa53660grmb6u0bqs@4ax.com...
> Chipman also discusses the relevancy of the characteristic Z of a
> source to SWR, which is tucked away in the unread part. ;-)
>
> 73's
> Richard Clark, KB7QHC

Richard,

There used to be a Dr. Chipman who taught a fields/waves course at the
University of Toledo (OH) in the 60s. Do you know if it is the same guy?

Tam/WB2TT

4063. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 17:01:40 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jjrhkvoaan1ehq1dv4e5ft84jnhqnvr7tu@4ax.com>
Source record: 109707

On Sun, 24 Aug 2003 10:52:40 -0600, "Ken Bessler"
<kg0wx@NOSPAMyahoo.com> wrote:

>
>However, the performance of this antenna in the AM broad-
>cast band is SUPERB! I'm hearing stations all over the band
>at night, from as far away as Chicago and Los Angeles. So
>I've got hope the antenna won't be a complete flop on 160.
>
>Last night I worked several of the Ohio QSO party stations
>on 40 meters with many amazed at my "QRP with a wire"
>setup..... not to bad from Colorado.....
>
>72's de Ken KG0WX

Hi Ken,

Not to rain on your parade, but as a teenager in Colorado Springs,
back in the 60's, I had a 50' longwire traced along the fence rail at
roughly 6'. I could AM DX both coasts on my RBB-1 (WWII shipboard
receiver which weighed as much as a pocket battleship).

73's
Richard Clark, KB7QHC

4064. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 17:19:48 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <9eOdnalMTKkobtWiU-KYuA@comcast.com>
Source record: 109708

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:jjrhkvoaan1ehq1dv4e5ft84jnhqnvr7tu@4ax.com...
> On Sun, 24 Aug 2003 10:52:40 -0600, "Ken Bessler"
> <kg0wx@NOSPAMyahoo.com> wrote:
>
> >
> >However, the performance of this antenna in the AM broad-
> >cast band is SUPERB! I'm hearing stations all over the band
> >at night, from as far away as Chicago and Los Angeles. So
> >I've got hope the antenna won't be a complete flop on 160.
> >
> >Last night I worked several of the Ohio QSO party stations
> >on 40 meters with many amazed at my "QRP with a wire"
> >setup..... not to bad from Colorado.....
> >
> >72's de Ken KG0WX
>
> Hi Ken,
>
> Not to rain on your parade, but as a teenager in Colorado Springs,
> back in the 60's, I had a 50' longwire traced along the fence rail at
> roughly 6'. I could AM DX both coasts on my RBB-1 (WWII shipboard
> receiver which weighed as much as a pocket battleship).
>
> 73's
> Richard Clark, KB7QHC

That just reassures me I'm on the right track. I'd have picked
up more stations but they were all on top of each other in a big
jumble...

Ken

4065. mid loading antenna - problems

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 17:30:18 UTC
From: antennas@yahoo.com
Message-ID: <e8be44e3.0308240930.1b0eb530@posting.google.com>
Source record: 109709

I am copying a design from the PAC -12 from KA5DVS. Now I am using some different materials but using same design. Using what I had on hand. I calculated his laoding coil for 40M to have about 8.68 uh inductance, so I used some 1/8" tubing I had for lower losses. I calculated my coil for 8.87uh by formulae, as it is 8" long and had a radius of .75" with 37 turns. WHich should all work out. But I put antenna outside and it only has lowest swr at 13.4 MHz or so. What the heck is wrong? It should be good around 7MHz same as other design. I know I must be missing something , but kids are driving me crazy and I can't think! Any help is appreciated, thanks.
Andrew VE8AE

4066. Re: IMAGINARY POWER

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 17:30:19 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <biasnb$1r0$1@hercules.btinternet.com>
Source record: 109710

"Reg Edwards" wrote
> Dr Slick asked -
> > How could you get more power reflected
> > than what you put in?
>
> ======================
>
> Quite simple! It's "Imaginary power".
>
> As an experienced electrical engineer you should by now be familiar with
> imaginary quantities. There's no need for confusion.
>
> Mathematics can't be wrong. Only people
> can be wrong. Just carry on with the
> calculations. If you asked a real sensible
> question then eventually you will
> obtain a real sensible answer.
> ----
> Reg, G4FGQ

============================

And conversely, if you can't get a real answer
which can be confirmed by measurements, or
by other independent calculations, then you
didn't ask a real sensible question in the first
place.

Of what uses do RC and SWR have anyway?

What do you do with these quantities, real or imaginary, when you think you
know what they are. Please do not dash for cover up to microwaves where
values can change places with their conjugates as mysteriously as the
imaginary ghost of Shrodinger's Cat can switch between really dead and
really alive states.

4067. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 17:46:29 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308240946.2e0131dc@posting.google.com>
Source record: 109711

"David Robbins" <k1ttt@arrl.net> wrote in message
news:<CPWdndNCJfWJA9WiXTWJjg@crocker.com>...
> > > > >
> > > > > A. The one just posted by Peter, (Zl - Z0conj) / (Zl + Z0conj)
> > > > >
> > > > > B. Slick's, (Zl - Z0conj) / (Zl + Z0)
> > > > >
> > > > This is the correct formula.
> > >
> > > it is??? -10 points and repeat last week's homework.
> > >
> >
> > Who are you to correct my homework? Look it up yourself
> >
> i did, and its wrong.... but you cut off my reference in your reply. there
> is no conjugate term in the complete solution for a real line.

I agree with you if the line is purely real. If it's not, you
have to use the conjugate equation.

additionally, just because it's been published doesn't mean that
it isn't wrong! I have an electromagnetics book that has incorrectly
uses complex Zo with the regular equation.

Slick

4068. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 17:49:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308240949.4fb4e104@posting.google.com>
Source record: 109712

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030824010951.28166.00000528@mb-m29.aol.com>...
>
> Hi, Garvin, you old gwee.
> Does your family know you're monkeying around like this on
> the net?
> 73,
> Tom Donaly, KA6RUH

OHH MY GHOD!! Your sooo smart to find my real name!

(slaps head in stupidity, i forgot about a Google search, Dammit!)

:)

Slick

4069. Re: Choice of Material for Loop Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 18:02:29 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <biaujl$4pk$1@hercules.btinternet.com>
Source record: 109713

There is not the slightest detectable difference between copper and aluminum shielded receiving loops except in their mechanical properties and the effects on your bank balance.

If you use the loops outside in uncluttered surroundings you would very likely notice no difference in performance even if you entirely removed both shields to leave only the antenna inner wire or wires. The tuning capacitors would need to be increased in value to compensate for the missing shield capacitance.

For a given loop diameter, receiving sensitivity is increased with thicker wire and fewer turns. A single turn of copper or aluminium self-supporting tube has greatest efficiency just as for a transmitting magloop.

Reg, G4FGQ

4070. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 18:25:23 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308241025.1ff03291@posting.google.com>
Source record: 109714

ac6la@arrl.net (Dan) wrote in message
news:<960228f1.0308240235.225d519d@posting.google.com>...
>
> From Kurokawa, "Power Waves and the Scattering Matrix," IEEE
> Transactions on Microwave Theory and Techniques, March 1965:
>
> Section 2, explanation of and mathematical definition of the concept
> of "power waves," explicitly noted by the author to be distinct from
> the more commonly discussed voltage and current traveling waves.
>
> Section 3, definition of the reflection coefficient [for power waves]:
> s = (ZL - Zo*) / (ZL + Zo)
> with a footnote "[Only w]hen Zo is real and positive this is the
> voltage wave reflection coefficient." Kurokawa takes pains to make it
> clear that his "s" power wave reflection coefficient is not the same
> as the (usually rho or Gamma) voltage wave reflection coefficient.
>

I've got the same paper. It's a bit confusing, because then he
calls

[s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2 the "power reflection
coefficent".

Where if you take the square root to the power reflection
coefficient, you should get the voltage r. c.

So perhaps s = (ZL - Zo*) / (ZL + Zo) really IS the voltage R.
C., even in this paper!

> Section 9, comparison with [voltage and current] traveling waves:
> "... since the [voltage or current] traveling wave reflection
> coefficient is given by (ZL - Zo) / (ZL + Zo) [note no conjugate] and
> the maximum power transfer takes place when ZL=Zo*, ... it is only
> when there is a certain reflection in terms of [voltage or current]
> traveling waves that the maximum power is transferred from the line to
> the load."
>

Perhaps he is confused on this point, because he previously
stated:

"When the matching condition (4) is satisfied , the power
reflection
coefficient becomes zero, as expected."

Condition (4) is the Zl=Zo*, which is also called the conjugate
matched condition for maximum power delivered to the load.

It's only when you have a simultaneous conjugate match with a
transistor, that you get the max gain.

> So Kurokawa agrees with Chipman concerning the condition for maximum
> power transfer. Kurokawa also defines two different reflection
> coefficients, both in the same paper.
>

Again, you failed to mention that he defined:

[s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2 the "power reflection
coefficent".

Note the squares.

Copy of the Kurokawa paper, in pdf format, available on request
via
private email.

Slick

4071. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 18:27:50 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308241027.71a16e89@posting.google.com>
Source record: 109715

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030824010454.28166.00000527@mb-m29.aol.com>...

>
> You know, Garvin, if you can't even tell the numerator from the
> denominator, you're in sad shape. Maybe you should stick
> to playing your guitar and doodling.
> 73,
> Tom Donaly, KA6RUH

Maybe you should stick to your all-night wanking sessions...

Slick

4072. Re: mid loading antenna - problems

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 18:39:38 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bib0pa$3af$1@titan.btinternet.com>
Source record: 109716

Download in a few seconds program MIDLOAD and run immediately.

It will soon tell you where or who is going wrong. Coil length and length
of wire beyond end of coils are fairly critical. It's a good idea to use
thick wire on the coil, or use tube on the higher HF bands.

========================
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
========================
"VE8AE Andrew" <antennas@yahoo.com> wrote in message
news:e8be44e3.0308240930.1b0eb530@posting.google.com...
> I am copying a design from the PAC -12 from KA5DVS. Now I am using
> some different materials but using same design. Using what I had on
> hand. I calculated his laoding coil for 40M to have about 8.68 uh
> inductance, so I used some 1/8" tubing I had for lower losses. I
> calculated my coil for 8.87uh by formulae, as it is 8" long and had a
> radius of .75" with 37 turns. WHich should all work out. But I put
> antenna outside and it only has lowest swr at 13.4 MHz or so. What the
> heck is wrong? It should be good around 7MHz same as other design. I
> know I must be missing something , but kids are driving me crazy and I
> can't think! Any help is appreciated, thanks.
> Andrew VE8AE

4073. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 18:47:08 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vki23vl2ujn0b7@corp.supernews.com>
Source record: 109717

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308241027.71a16e89@posting.google.com...
> tdonaly@aol.com (Tdonaly) wrote in message
news:<20030824010454.28166.00000527@mb-m29.aol.com>...
>
> >
> > You know, Garvin, if you can't even tell the numerator from the
> > denominator, you're in sad shape. Maybe you should stick
> > to playing your guitar and doodling.
> > 73,
> > Tom Donaly, KA6RUH
>
>
> Maybe you should stick to your all-night wanking sessions...
>
>
> Slick

one word --- blisters

4074. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 18:53:13 UTC
From: dplatt@radagast.org
Message-ID: <vki2cp6eegou6b@corp.supernews.com>
Source record: 109718

In article <5uycnSj_noWjVtWiXTWJhg@comcast.com>,
Ken Bessler <kg0wx@NOSPAMyahoo.com> wrote:

>I'm planning on buying a Radio Shack outlet tester (22-141, pg 238 of
>the last catalog) - if it shows my outlets are configired properly, I plan
>on running a heavy insulated ground wire from the outlet to the pipe (8").
>
>Does this sound right to you?

I would advise _against_ doing this, for a couple of reasons.

One is that the Radio Shack tester can detect certain forms of mis-wiring, but there's at least one which it cannot detect. This is one in which you have a three-wire outlet, hooked up to a two-wire power feed (one which doesn't actually have a ground), and the installer simply wired the "neutral" and "ground" screws together at the outlet.

To a simple static-voltage-based tester (such as the Radio Shack one appears to be) this outlet will test out as "good" - there will be 120 volts between hot and neutral, 120 between hot and ground, and zero between neutral and ground.

However, this sort of outlet does _not_ provide a true safety ground. If you start drawing a large amount of current through the wire (from this outlet or from another on the same wire), both the "neutral" and "ground" contacts will be pulled several volts away from ground by the I*R losses in the neutral wire. If you've got your equipment chassis "grounded" to this outlet, the chassis will be pulled up away from ground - this could present a shock hazard. Also, you can end up with some portion of the power return current (back to the neutral connector at the breaker box) flowing where you don't want it... through your equipment chassis, your hot-water pipe, your antenna-cable coax braid, etc.

Proper testing for a neutral/ground crossconnection may require physical inspection of the outlet. It can, I think, also be detected by measuring the voltage between the neutral and ground pins at an outlet, while drawing a heavy current (e.g. a 1500-watt space heater) through the other side of that outlet. If the outlet is wired properly, you _should_ see at least a volt or so develop between these two pins - if you don't, it may indicate a neutral/ground crossconnect at that outlet.

The other reason I'd discourage wiring the power-outlet ground to your hot-water-heater pipe, is that the National Electric Code doesn't

permit this. If a short circuit occurs somewhere on this circuit, it would cause your water pipes to carry some of the current back to the house ground, and this could result in a shock hazard for anyone in contact with the pipes (e.g. somebody in a shower or tub).

As I recall, the electrical and plumbing systems really should remain electrically isolated from one another _except_ at a single "bonding" point. This ensures that the plumbing system cannot carry ground-return currents, if a fault occurs in the electrical wiring.

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will boycott any company which has the gall to send me such ads!

4075. Re: Take off angle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 19:38:33 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308241138.6c8b21ef@posting.google.com>
Source record: 109719

Roy Lewallen <w7el@eznec.com> wrote in message news:<vkgs229u01og8b@corp.supernews.com>...
> Art Unwin KB9MZ wrote:
> > Roy Lewallen <w7el@eznec.com> wrote in message
news:<vkf7nmhilfgh14@corp.supernews.com>...
> >
> >>It's really quite simple and fundamental.
> >
> >
> > Appreciate your response Roy, but the fact is the
> > matter is not simple to me. I am comparing horizontally
> > polarisation patterns in all cases thus I am having
> > difficulty with your explanation!
>
> Ok, I'll try again. To determine the relative field strength at a
> distant point at an elevation angle of, say 20 degrees, put the antenna
> at the height you're interested in. Draw a line from the antenna to the
> ground, at a downward angle of 20 degrees, then reflecting upward,
> resulting in a ray going upward at an elevation angle of 20 degrees.
> Draw another line from the antenna at an upward angle of 20 degrees. You
> now have two parallel lines, a "direct ray" and a "reflected ray". At
> some distant point, draw a line perpendicular to those rays. Measure the
> distance from the antenna to the new line via each of the two paths, one
> direct and the other reflected. You'll be adding these two rays, and the
> difference between the two paths tells you the relative phases of these
> two components you'll be adding.
O.K, so far
For example, if the antenna is a half
> wavelength high, you'll find that at an elevation angle of 30 degrees,
> the reflected ray travels exactly one wavelength farther than the direct
> ray, so the two rays will exactly add in phase. At higher or lower
> angles, they won't. When adding the two rays, you've also got to factor
> in the free-space radiation pattern of the antenna to see just how much
> the antenna is radiating at those angles (say, 20 degrees down and 20
> degrees up from horizontal, for the pattern at 20 degrees). In the case
> of a dipole, the free-space radiation pattern broadside to the antenna
> is circular, so rays at all angles are equal.

Don't fully understand the circular part but let us press on..

Thus, 30 degrees is the
> "takeoff angle" for a dipole up a half wavelength. You do also have to
> include a factor for the reflection coefficient of the reflected ray
> from the ground.
Understood
But for horizontally polarized waves at moderate to low

> angles, it's very close to one. (But it's not, for vertically polarized
> signals, so it should always be computed for vertical antennas.) This is
> the way that AO, NEC, EZNEC, MININEC, and similar programs compute the
> elevation pattern.
So far so good !
>
> Now suppose that an antenna has a skinny elevation pattern in free
> space. The W8JK is an example. At, say, 30 degrees up or down, the
> signal is weaker than at 20 degrees. So the elevation pattern will be
> correspondingly stronger than a dipole at 20 degrees relative to 30
> degrees. This will lower the "takeoff angle" -- the elevation angle at
> which the pattern is maximum.

Ouch. You jumped the Grand Canyon in two steps.
I need to think on that a bit more
>
> These patterns can be pretty easily created with a calculator and either
> some trigonometry or graph paper if you have the free-space pattern, but
> modern programs can do the work for you.
>
> > It comes to mind also that an antenna used for listening
> > (beverage ?) also comprises of stacked collinear
> > horizontally polarised radiators where the vertical
> > radiators appears to cancel
> > themselves out.
>
> No, the radiation from a Beverage is primarily vertically polarized, off
> the end.
I was really thinking of a Franklin or Sterba thus the ?
> > So it would appear to be a case where
> > a beam that is close to the ground (coupled maybe to a
> > radiator other than the ground) is also capable of
> > decreasing the TOA even more than such an arrangement
> > at 1WL height.
>
> I dunno. Look at the method I described, and try it on your theoretical
> antenna to see if that's true or not.
>
> > Odd that you also brought into the picture the W8JK
> > antenna that also relies on critical coupling for
> > its extrorninary gain which you suggest also provides
> > for a low TOA when compared to the Yagi.
>
> Egad, the magical "critical coupling". The W8JK has mutual impedance and
> coupling between the elements like any other antenna.

Wash my mouth out for saying critical coupling but having said that
I distinguish critical coupling from mutual coupling by the fact that
in critical coupling you have an INCREASE in current
bAt 4 or so dB for
> a couple of elements (if you keep losses down), I wouldn't call its gain

> "extraordinary", either. It follows the same rules as all other
> antennas, and its gain and other characteristics can be predicted with
> great accuracy using the same ordinary methods used for all other antennas.

Sorry, I don.t see it that way at all. W8JK has the arrangement of
critical coupling evidenced by its high gain that drops off quickly
as the coupling is changed. The increased current or coupling factor
is not evidenced with parasitic elements. I know all do not like to
hear such blasphemy which will create a howl but this is how the
original question came up i,e, critically close coupling between an
oversize
dipole by feeding a small dipole in close proximation which lowered
the TOA of the dipole alone (yes, I added lumped constants to follow
the complex circuit aproach)
> > I will have to get the Kraus book from the library
> > for myself to read and hopefully there will be a
> > graph of some sort that will outline its advantages
> > and limitations.
>
> It's described in _Antennas_, all editions I believe.
>
> > . . .
>
> Roy Lewallen, W7EL
Thanks for going the extra mile with me Roy and for giving me
the time.
Will still have to lean on the library to get a copy for me to
look at to fill in the spaces especially the circular pattern
maybe I will just lay it down to the "curl" for the moment which will
apply a different "spin" to the subject (Pun intended)
The Sterba antenna I will have to review since I see it as horizontal
ly polarised as in a double zep but my narrow education will have to
be
broadened.
Best regards
Art

4076. Active antenna combiner (transmit & receive), 30-87 MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 19:52:04 UTC
From: Stefan Moscibroda <mostefan@gmx.ch>
Message-ID: <3f491711_4@news.bluewin.ch>
Source record: 109720

To save antennas on vehicles, I'm interested in a active transmit/receive antenna combininer. It should
allow to use multiple equipment (e.g. 4 radio systems) on just two antennas (a receiving and transmit
antenna). Frequency range is between 30 MHz and 87 MHz. Maximum power is 50 Watts.
Does somebody know a good product or can give me any hint on this? Thanks a lot!

4077. Re: Placement of elements along boom (EMC)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:04:18 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308241204.62bf8717@posting.google.com>
Source record: 109721

Yes Richard that is the antenna that I had in mind
What bothers me is that since it is for a lab I see
the antenna being used all,for both horizontal and vertical
radiation emmission measurements, which I surmise would
separate it from horizontally polarised form that is used for HF.
However, since all of the experts have frowned on the offset design,
I like Abdulla am quite interested as to what one should expect
from the offset design that would generate such eyebrow lifting.
Regards
Art

richardharrison@webtv.net (Richard Harrison) wrote in message
news:<7750-3F48A688-1@storefull-2318.public.lawson.webtv.net>...
> Art Unwin wrote:
> "Actually, I see nothing wrong with such an assembly and in fact have
> seen a military configuration such as this where two such antennas were
> used in a V shaped form where the narrow ends were placed together and
> enclosing an approx 30 degree angle."
>
> Such an antenna may be called a pyramidal log-periodic.
>
> A version is included in Kraus on page 398. Its boom-separation angle is
> 60 degrees.
>
> A pyramidal log periodic is the cover story in the July 1969 "Popular
> Electronics". This is a construction article beginning on page 27. The
> author is George Monser. It uses 17 rods on each boom, every rod
> different from the others on a boom. Separation angle for the booms is
> also 60 degrees. This antenna covers VHF and UHF TV and FM broadcast
> bands. It is said to match 300-ohm feedline over the range and produce
> enough gain for "deep-fringe" color reception.
>
> The longest element (not aligned end-to-end as a dipole) is 115-in. tip
> to tip, or 1/2-wave at about 51 MHz.
>
> Best regards, Richard Harrison, KB5WZI

4078. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:07:02 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <ToKdncND1Kt5h9SiU-KYvw@crocker.com>
Source record: 109722

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308241025.1ff03291@posting.google.com...

> [s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2 the "power reflection
> coefficent".
>
> Note the squares.
>
yes, please do note the squares.... and remember, just because

[s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2
does NOT mean that
s = (ZL - Zo*) / (ZL + Zo)

this is the one big trap that all you guys that like to use power in your calculations fall into. just because you know the power doesn't mean that you know squat about the voltage and current on the line. you can not work backwards. that is why it is always better to work with voltage or current waves and then in the end after you have solved all those waves you can always calculate power if you really need to know it.

4079. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:08:04 UTC
From: richardharrison@webtv.net
Message-ID: <7746-3F491B24-183@storefull-2318.public.lawson.webtv.net>
Source record: 109723

Keith wrote:
"And when the voltage or current is always zero, so must be the power."

No. When power in each direction is alone measured in each direction, it`s found there`s no variation in intensity at all.along the line.

Standing waves are perceived only by using a sensor which does not discriminate by direction and accepts power traveling in both directions at the same time. There actually is no abatement of power in either direction.

Full power will be measured in either direction by a good directional coupler at any place on the transmission line including the spot showing zero volts or amps at SWR nulls.

A standing wave has almost no effect on power in either direction. Forward and reflected waves pass right through each other without significant effect if there is no impedance discontinuity in the line.

Best regards, Richard Harrison, KB5WZI

4080. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:28:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f49214d_4@corp.newsgroups.com>
Source record: 109725

kd1@sympatico.ca wrote:
> But if you want to understand how things work, exploring the land of
> the instantaneous is quite valuable.

How so? Doesn't seem to have any value at all in the field of optics.

> It is instantaneous voltages which make standing waves.

That's a no-brainer.

> It is instantaneous signals which cause distortion in diode
> demodulators.

Please define "instantaneous" for us. I suspect it cannot be what
happens in a dt=0 time slot.

> It is instantaneous voltages and currents which
> are added and subtracted in Bird wattmeters.

But the result is rectified and the maximum value is stored on
a capacitor. By definition, a capacitor cannot accept an instantaneous
value of voltage. If it could, it would be called an inductor. :-)

> It is instantaneous
> voltages and currents which interact at impedance discontinuities to
> do all the neat stuff. And it is instantaneous voltages and currents
> which produce instantaneous power.

There's no question that instantaneous voltages are useful.
Optics, by Hecht has a different opinion of instantaneous power.

> But I notice an instantaneous willingness to reject the value of
> instantaneous power.

Please prove that the human brain is capable of instantaneous willingness. :-)

> But to reject instantaneous power in a consistent manner, you need to
> explain why you do not also reject instantaneous velocity, acceleration,
> current, flow or any of the many other interesting things which are a
> derivative with respect to time.

Some things logically have an instantaneous value, e.g. voltage. Other
instantaneous values do not seem to be related to reality. Let me use
your mind-f__king techniques on you. So you are saying that all instantaneous
values appearing in any math model anywhere have an associated existence
in reality. One thing required by that is that you prove that infinity
actually exists in reality. When you have finished your list of natural
numbers, you can start on the list of transcendentals. A lot of what

you and I do in our minds is just mental masturbation.

> Assertion A:
> "In a shorted ideal transmission line which has reached steady state,
> no energy can cross a voltage or current minimum because
> p(t) = v(t) * i(t) and at a voltage or current minimum, the voltage
> or current is always zero, so the power is always zero, so there is
> no energy flow across a voltage or current minimum."

Assertion B: Since the universe is about 15 billion years older than
our solar system, transmission lines have probably been doing their
thing for billions of years longer than your above statement has existed.

> This conclusion contradicts a commonly held belief:

Yes, and is therefore probably as wrong as can be. There is absolutely
nothing in physics that prohibits energy from flowing across an area
where power is zero. INTERFERING LIGHT BEAMS DO IT ALL THE TIME. It's
called superposition, and when the waves are traveling in opposite
directions while superposing to zero, they have absolutely zero effect
on each other. Sorry about that but you really need to understand what
happens to EM light waves when they interfere. The fact that you have
contradicted a couple of hundred years of physics should be cause for
you to pause and think.

> Belief B:
> "that in steady-state, energy is flowing along the transmission line
> to the end where it is reflected and travels back to the beginning."

Please present a model of how standing waves are possible without forward
waves and reflected waves in a single-source, single feedline, single load
system. Until you do that, you are just, IMHO, blowing smoke.

> Unless you can find an error in the logic of Assertion A, it would
> seem reasonable that you re-assess your acceptance of Belief B.

The error in assertion A is that EM light waves cause power nulls
without having any effect on each other whatsoever. And that's exactly
what happens in a transmission line.

> Assertion A caused me to reject Belief B and the world did not
> collapse:

When you reject the primacy of consciousness in favor of the primacy
of existence, you will understand why your thoughts don't effect reality.
Your thoughts also do not affect much of reality. What happens when you
God-like gurus disagree? - Close to nothing!

When you get through with that, consider what happens if time doesn't
really exist and is simply a model of change invented by the human mind.
What happens when you divorce change from the rotation of the earth?
--
73, Cecil http://www.qsl.net/w5dxp

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4081. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:30:09 UTC
From: Allodoxaphobia <bit-bucket@config.com>
Message-ID: <slrnbki82g.2ndm.bit-bucket@localhost.config.com>
Source record: 109724

On Sun, 24 Aug 2003 17:01:40 GMT, Richard Clark hath writ:
> On Sun, 24 Aug 2003 10:52:40 -0600, "Ken Bessler"
><kg0wx@NOSPAMyahoo.com> wrote:
>
>>However, the performance of this antenna in the AM broad-
>>cast band is SUPERB! I'm hearing stations all over the band
>>at night, from as far away as Chicago and Los Angeles. So
>>I've got hope the antenna won't be a complete flop on 160.
>>
>>Last night I worked several of the Ohio QSO party stations
>>on 40 meters with many amazed at my "QRP with a wire"
>>setup..... not to bad from Colorado.....
>>
>>72's de Ken KG0WX
>
> Not to rain on your parade, but as a teenager in Colorado Springs,
> back in the 60's, I had a 50' longwire traced along the fence rail at
> roughly 6'. I could AM DX both coasts on my RBB-1 (WWII shipboard
> receiver which weighed as much as a pocket battleship).
>
> 73's Richard Clark, KB7QHC

Not to rain on _your_ parade <g>, but, back then, licensed radio
transmitters were about the only "radiators" you had to contend with.
(Well, maybe not in the 60's -- but, I remember the 50's....)
Oh for the days when you could tune to an unoccupied frequency and
turn both the AF and RF control up to max and listen to the cosmic
background.

73 Jonesy
--
| Marvin L Jones | jonz | W3DHJ | OS/2
| Gunnison, Colorado | @ | Jonesy | linux __
| 7,703' -- 2,345m | config.com | DM68mn SK

4082. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:36:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f492354$1_4@corp.newsgroups.com>
Source record: 109726

Peter O. Brackett wrote:
>>s11 is a reflection coefficient that has the special condition that
>>a2 must be equal zero. When a2 is not equal zero, the s11 reflection
>>coefficient and the apparent reflection coefficient (rho) are not the same.
>
> No! The scattering paramters, e.g for a two-port the s11, s12, s21 and s22
> are all parameters fixed by the network and are not dependent upon either
> the independent or dependent variables! i.e. b1 = s11*a1 + s12*a2, and b2
> = s21*a1 + s22* a2.

I'm sorry, Peter, but you probably misunderstood me. s11 cannot possibly
be the same as 'rho' when a2=100 watts.

s11 = b1/a1 when a2=0.

b1 is equal to something else if a2 is not zero.

rho = Sqrt(Pref/Pfwd)

These do NOT have to be the same values. That's all I was saying.
--
73, Cecil http://www.qsl.net/w5dxp

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4083. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:39:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4923fe_4@corp.newsgroups.com>
Source record: 109727

Peter O. Brackett wrote:
> Only the "electricals" the v and I are "real"! The "waves" the a and b are
> just different manifestations of v and i as viewed through and instrument
> [reflectometer] using a, perhaps arbitrary, reference impedance, or matrix
> transformation.
>
> Sorry Cecil. :-)

Sorry Peter, quantum physics disagrees with you. It's the electrons,
photons, and virtual photons that are real. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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4084. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 20:40:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f492438$1_4@corp.newsgroups.com>
Source record: 109728

Peter O. Brackett wrote:
> I beleive in working it all out from first principles, can't trust anybody
> else, except of course you and your wonderful programs. :-)

Ever try to develop Morse code from first principles? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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4085. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 21:01:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f492905$1_4@corp.newsgroups.com>
Source record: 109729

Dr. Slick wrote:
> I've got the same paper. It's a bit confusing, because then he
> calls [s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2 the "power reflection
> coefficent". Where if you take the square root to the power reflection
> coefficient, you should get the voltage r. c. So perhaps s =
> (ZL - Zo*) / (ZL + Zo) really IS the voltage R. C., even in this paper!

There's no confusion at all (except here on this newsgroup). The power reflection coefficient is known as the "Reflectance" in optics. The voltage reflection coefficient that we know and love in RF is one of the Fresnel (1788-1827) Equations. In optics, it is known as the "amplitude reflection coefficient", equation 4.34 in _Optics_, 4th edition.

May I suggest that everyone obtain a copy of _Optics_, by Hecht, and contribute to his/her basic understanding of EM waves. Light was detectable eons before RF and thus had an extreme head start. We are presently arguing principles that were already resolved by the end of the 18th century.
--
73, Cecil http://www.qsl.net/w5dxp

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4086. Re: Coaxial coil=choke=problem?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 21:18:59 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <hs6dndphE59VttSiXTWJhg@comcast.com>
Source record: 109730

The other thing that killed radio and TV DXing is 24 hour stations. I used to do TV DXing from Ohio. Turned the antenna East in the morning, and West at night (when the locals were off). Picked up stuff from New York City to Pueblo Colorado, and London Ontario to Santa Clara Cuba. The long haul was all channels 2 & 3.

Tam/WB2TT
"Allodoxaphobia" <bit-bucket@config.com> wrote in message
news:slrnbki82g.2ndm.bit-bucket@localhost.config.com...
> On Sun, 24 Aug 2003 17:01:40 GMT, Richard Clark hath writ:
> > On Sun, 24 Aug 2003 10:52:40 -0600, "Ken Bessler"
> ><kg0wx@NOSPAMyahoo.com> wrote:
> >
> >>However, the performance of this antenna in the AM broad-
> >>cast band is SUPERB! I'm hearing stations all over the band
> >>at night, from as far away as Chicago and Los Angeles. So
> >>I've got hope the antenna won't be a complete flop on 160.
> >>
> >>Last night I worked several of the Ohio QSO party stations
> >>on 40 meters with many amazed at my "QRP with a wire"
> >>setup..... not to bad from Colorado.....
> >>
> >>72's de Ken KG0WX
> >
> > Not to rain on your parade, but as a teenager in Colorado Springs,
> > back in the 60's, I had a 50' longwire traced along the fence rail at
> > roughly 6'. I could AM DX both coasts on my RBB-1 (WWII shipboard
> > receiver which weighed as much as a pocket battleship).
> >
> > 73's Richard Clark, KB7QHC
>
> Not to rain on _your_ parade <g>, but, back then, licensed radio
> transmitters were about the only "radiators" you had to contend with.
> (Well, maybe not in the 60's -- but, I remember the 50's....)
> Oh for the days when you could tune to an unoccupied frequency and
> turn both the AF and RF control up to max and listen to the cosmic
> background.
>
> 73 Jonesy
> --
> | Marvin L Jones | jonz | W3DHJ | OS/2
> | Gunnison, Colorado | @ | Jonesy | linux __
> | 7,703' -- 2,345m | config.com | DM68mn SK

4087. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 21:20:16 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f492d83_4@corp.newsgroups.com>
Source record: 109731

David Robbins wrote:
> this is the one big trap that all you guys that like to use power in your
> calculations fall into. just because you know the power doesn't mean that
> you know squat about the voltage and current on the line. you can not work
> backwards. that is why it is always better to work with voltage or current
> waves and then in the end after you have solved all those waves you can
> always calculate power if you really need to know it.

Whoa there, David. Give me the the three powers associated with a Z0-match point on a transmission line, and I can give you all the voltages and all the currents including phase, assuming the incident generated forward power wave is at zero degrees. Most ham installations are Z0-matched, and I can tell you everything about amplitude and phase given the three powers, assuming the power reflected from the Z0-match is zero. The values you give me are no problem. I've written a program to solve the equation.

Since the days of Fresnel (1788-1827), this information has been known. To admit that ham radio is 300 years behind the times is pretty sad.
--
73, Cecil http://www.qsl.net/w5dxp

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4088. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 21:22:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f492e17$1_4@corp.newsgroups.com>
Source record: 109732

Richard Harrison wrote:
> Standing waves are perceived only by using a sensor which does not
> discriminate by direction and accepts power traveling in both directions
> at the same time. There actually is no abatement of power in either
> direction.

Sadly for ham radio, this fact of physics has been known to man for 300
years. How can a "technical" hobby be 300 years out of date?
--
73, Cecil http://www.qsl.net/w5dxp

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4089. Info on Cushcraft R3 triband vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 21:38:12 UTC
From: Jim Coffey <jimcoffey@frontiernet.net>
Message-ID: <n7bikv0t8mdrotbtlokr94ohvnvgrav532@4ax.com>
Source record: 109733

Does anyone have a info on the Cushcraft R3. I have acquired one from
a friend who found it at an estate sale.
Cushcraft has nothing on their web site, only a R5 and R7 which look
completely different.

I know an insulator is missng on the base but I'm not surewhat else
might be missing and I have no manual.

Any help would be appreciated.

TNX

Jim Coffey WB4KMK
jim.coffey@frontiernet.net

4090. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 21:38:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4931e6_5@corp.newsgroups.com>
Source record: 109735

kd1@sympatico.ca wrote:
> But if you want to understand how things work, exploring the land of
> the instantaneous is quite valuable.

OTOH, if you want to understand how EM waves work, exploring the discoveries of the past 500 years in the field of optics is quite valuable - discoveries that you have officially discounted when you reject the total knowledge base embodied in the field of optics. Seems my "sin" is pretty small compared to yours. :-)
--
73, Cecil http://www.qsl.net/w5dxp

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4091. Re: Info on Cushcraft R3 triband vertical

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 21:41:39 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vkicb66f18mk76@corp.supernews.com>
Source record: 109734

"I know an insulator is missng on the base "
That was the only part worth salvaging.
Explains why it's missing.
H.
NQ5H

"Jim Coffey" <jimcoffey@frontiernet.net> wrote in message
news:n7bikv0t8mdrotbtlokr94ohvnvgrav532@4ax.com...
> Does anyone have a info on the Cushcraft R3. I have acquired one from
> a friend who found it at an estate sale.
> Cushcraft has nothing on their web site, only a R5 and R7 which look
> completely different.
>
> I know an insulator is missng on the base but I'm not surewhat else
> might be missing and I have no manual.
>
> Any help would be appreciated.
>
> TNX
>
> Jim Coffey WB4KMK
> jim.coffey@frontiernet.net
>
>

4092. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 22:19:02 UTC
From: tdonaly@aol.com
Message-ID: <20030824181902.05610.00000503@mb-m16.aol.com>
Source record: 109736

>
>>
>> You know, Garvin, if you can't even tell the numerator from the
>> denominator, you're in sad shape. Maybe you should stick
>> to playing your guitar and doodling.
>> 73,
>> Tom Donaly, KA6RUH
>
>
> Maybe you should stick to your all-night wanking sessions...
>
>
>Slick

Garvin Yee. That's a pretty childish comeback, but typical. With
that kind of attitude, you should make it all the way to Fifth and
Mission in no time.

Tom Donaly, KA6RUH

4093. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 22:39:40 UTC
From: tdonaly@aol.com
Message-ID: <20030824183940.05610.00000504@mb-m16.aol.com>
Source record: 109737

>
>
> OHH MY GHOD!! Your sooo smart to find my real name!
>
> (slaps head in stupidity, i forgot about a Google search, Dammit!)
>
> :)
>
>
>Slick

Ah, the fatuous irony of youth. Say, Yee, I'm curious. Did you ever attend Lowell? Also, what got you interested in radio? I would think a self-anointed artist cum musician like you would avoid technical subjects like the plague. You don't seem to be doing very well at any rate.
73,
Tom Donaly, KA6RUH

4094. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 22:42:35 UTC
From: tdonaly@aol.com
Message-ID: <20030824184235.05610.00000505@mb-m16.aol.com>
Source record: 109738

>
>Sorry Peter, quantum physics disagrees with you. It's the electrons,
>photons, and virtual photons that are real. :-)
>--
>73, Cecil http://www.qsl.net/w5dxp
>

What's the radius of a virtual photon, Cecil?
73,
Tom Donaly, KA6RUH

4095. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 22:48:15 UTC
From: tdonaly@aol.com
Message-ID: <20030824184815.05610.00000506@mb-m16.aol.com>
Source record: 109739

```
>
>
>Since the days of Fresnel (1788-1827), this information has been known. To
>admit that ham radio is 300 years behind the times is pretty sad.
>--
>73, Cecil http://www.qsl.net/w5dxp
>

O.K., Cecil, I want to make a Fresnel lens antenna for forty meters.
What does it look like, and how do I make one?
73,
Tom Donaly, KA6RUH
```

4096. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 22:53:00 UTC
From: tdonaly@aol.com
Message-ID: <20030824185300.05610.00000507@mb-m16.aol.com>
Source record: 109740

>
>
>Richard Harrison wrote:
>> Standing waves are perceived only by using a sensor which does not
>> discriminate by direction and accepts power traveling in both directions
>> at the same time. There actually is no abatement of power in either
>> direction.
>
>Sadly for ham radio, this fact of physics has been known to man for 300
>years. How can a "technical" hobby be 300 years out of date?
>--
>73, Cecil http://www.qsl.net/w5dxp

Larding it on a little thick are we, Cecil?
73,
Tom Donaly, KA6RUH

4097. AH-4 vs. AT-180 w/resonant antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-24 23:34:10 UTC
From: Drink <drink@gnt.net>
Message-ID: <vkim4pc8brooa5@corp.supernews.com>
Source record: 109742

Hi OM's,
For the IC-706 MkIIG, Icom makes two separate tuners, the AH-4 and the AT-180.
FYI: I run the MkIIG and AT-180 to feed a Comet UHV-6 and the setup is fine.
My curiosity is this. If the AH-4 will tune a non-resonant antenna system, why then wouldn't I prefer it over the AT-180 which is used with a resonant antenna. Couldn't I use the AH-4 with an antenna whether it was resonant or not? Or, is there added benefit of the AT-180?
o_o_o_o
Best Regards, /| ,[_____],
Jim, WP3JQ |���L --O||||||O-
()_)�()_) �����)_)
EM60qk 30.447439N 086.628959W

4098. Re: AH-4 vs. AT-180 w/resonant antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 00:12:07 UTC
From: Drink <drink@gnt.net>
Message-ID: <vkiobua6ddbh32@corp.supernews.com>
Source record: 109747

That's what I thought but there was a discussion about the AH-4 to <any>
antenna the other day. So then, coax is fed differently. Thanks for the
reply.
o_o_o_o
Best Regards, /| ,[_____],
Jim, WP3JQ |���L --O|||||||O-
()_)�()_) ������)_)
EM60qk 30.447439N 086.628959W

4099. Re: Active antenna combiner (transmit & receive), 30-87 MHz

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 00:25:58 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f49588e_3@news1.prserv.net>
Source record: 109741

There are a number of manufacturers which produce this kind of equipment for this military frequency range. Get a current (2003-2004) copy of Jane's "All the World's Communications Equipment" for reviews and lists of manufacturers. My information is a number of years old, and thus, in this world, totally obsolete.

--
Crazy George
Remove NO and SPAM from return address
"Stefan Moscibroda" <mostefan@gmx.ch> wrote in message news:3f491711_4@news.bluewin.ch...
> To save antennas on vehicles, I'm interested in a active transmit/receive
> antenna combininer. It should
> allow to use multiple equipment (e.g. 4 radio systems) on just two antennas
> (a receiving and transmit
> antenna). Frequency range is between 30 MHz and 87 MHz. Maximum power is 50
> Watts.
> Does somebody know a good product or can give me any hint on this? Thanks a
> lot!
>
>

4100. Re: AH-4 vs. AT-180 w/resonant antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 00:38:20 UTC
From: "paulfriedman@comcast.net" <p.paulfriedman@comcast.net>
Message-ID: <0Uc2b.188181$It4.90868@rwcrnsc51.ops.asp.att.net>
Source record: 109743

The AH-4 is designed for random wire type antennas. The radiator is attached to the AH-4 via a wire post (as is the ground wire).

Paul AB0SI

"Drink" <drink@gnt.net> wrote in message
news:vkim4pc8brooa5@corp.supernews.com...
> Hi OM's,
> For the IC-706 MkIIG, Icom makes two separate tuners, the AH-4 and the
> AT-180.
> FYI: I run the MkIIG and AT-180 to feed a Comet UHV-6 and the setup is
fine.
> My curiosity is this. If the AH-4 will tune a non-resonant antenna
> system, why then wouldn't I prefer it over the AT-180 which is used with a
> resonant antenna. Couldn't I use the AH-4 with an antenna whether it was
> resonant or not? Or, is there added benefit of the AT-180?
> o_o_o_o
> Best Regards, /| ,[_____],
> Jim, WP3JQ |���L --O|||||||O-
> ()_)�()_) �����)_)
> EM60qk 30.447439N 086.628959W
>
>

4101. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 00:41:18 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <biblve$dp1$1@hercules.btinternet.com>
Source record: 109744

The previous posting, of course, applies to RF grounding of the radio shack, particularly to end-fed antennas where at some frequencies there may be appreciable RF currents flowing from the shack down to ground via the very uncritical arrangements previously described.

If there are any local or national regulations to be complied with regarding the domestic power frequency safety ground then they should be complied with. But in general such regulations, by themselves, will fall far short of an adequate radio ground.

For example, a single safety ground rod, wherever it is located, will likely have a resistance at all frequencies greater than 50 ohms plus the important inductive reactance of all the wire between the shack and the rod. By all means include the rod in the station's RF ground system but it will be found to be amongst the ground connections which can be disconnected without having any effect on station operation such as tuner settings.

A single rod is no better than a buried horizontal radial wire of the same length. If a rod is the only RF ground available an endfed antenna will work in some poor fashion, RF in the shack, etc., unless the local soil is saturated with salt water - an unlikely condition.

To protect the family home from direct lightning strikes on the antenna then the mast etc., is best provided with its own ground electrode system. We have very few thunder storms in the UK. In all my years I have seen only one lightning strike which hit the ground. So what I have done when a storm seemed imminent (the tuner capacitor sparking over) is just disconnect the antenna at the lead-in to the shack and toss the loose end of the wire as far as I can along the back yard.

For antenna + mast grounding details I leave to more experienced people.

Reg, G4FGQ

4102. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 01:05:56 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308241705.78fa64c0@posting.google.com>
Source record: 109745

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308232046.2ad23531@posting.google.com>...
>
> Correction: rho = (Z - conj(R))/(Z + (R)), the conjugate being
> only in the denominator.
>
>
> Slick

Opps Again!

Correction: rho = (Z - conj(R))/(Z + (R)), the conjugate being
only in the numerator.

Slick

4103. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 01:07:44 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308241707.6ca38aa1@posting.google.com>
Source record: 109746

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:<s152b.7301$jY2.4316@newsread1.news.atl.earthlink.net>...
> Slick:
>
> [snip]
> > Correction: rho = (Z - conj(R))/(Z + (R)), the conjugate being
> > only in the denominator.
> >
> > Slick
> [snip]
>
> Well here we have to part company.
>
> Not using the same "thing" in both numerator and denominator *is* being
> inconsistent!
>
> See my algebraic development in another posting on this thread.

Opps Again!

Correction: rho = (Z - conj(R))/(Z + (R)), the conjugate being
only in the numerator.

Slick

4104. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 01:12:41 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <dod2b.8122$jY2.5522@newsread1.news.atl.earthlink.net>
Source record: 109748

Cecil:

[snip]
> Ever try to develop Morse code from first principles? :-)
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

Even Morse didn't do that! Apparently historians believe that his faithful servant Vail did that.

--
Peter K1PO
dah di dah

4105. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 01:17:51 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308241717.367f6f3f@posting.google.com>
Source record: 109749

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f492905$1_4@corp.newsgroups.com>...
> Dr. Slick wrote:
> > I've got the same paper. It's a bit confusing, because then he
> > calls [s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2 the "power reflection
> > coefficent". Where if you take the square root to the power reflection
> > coefficient, you should get the voltage r. c. So perhaps s =
> > (ZL - Zo*) / (ZL + Zo) really IS the voltage R. C., even in this paper!
>
> There's no confusion at all (except here on this newsgroup). The power
> reflection coefficient is known as the "Reflectance" in optics. The
> voltage reflection coefficient that we know and love in RF is one
> of the Fresnel (1788-1827) Equations. In optics, it is known as the
> "amplitude reflection coefficient", equation 4.34 in _Optics_, 4th edition.
>
> May I suggest that everyone obtain a copy of _Optics_, by Hecht, and
> contribute to his/her basic understanding of EM waves. Light was
> detectable eons before RF and thus had an extreme head start. We are
> presently arguing principles that were already resolved by the end of
> the 18th century.

Cecil, email me privately and i will send you the paper. He calls
the voltage reflection coefficient the "power wave reflection
coefficient". And then squares this to get the "power reflection
coefficient".

It's really a bad nomenclature, and no wonder there is confusion.

Slick

4106. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 01:22:45 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308241722.2e53754a@posting.google.com>
Source record: 109750

"David Robbins" <k1ttt@arrl.net> wrote in message
news:<ToKdncND1Kt5h9SiU-KYvw@crocker.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308241025.1ff03291@posting.google.com...
>
> > [s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2 the "power reflection
> > coefficent".
> >
> > Note the squares.
> >
> yes, please do note the squares.... and remember, just because
>
> [s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2
> does NOT mean that
> s = (ZL - Zo*) / (ZL + Zo)
>
> this is the one big trap that all you guys that like to use power in your
> calculations fall into. just because you know the power doesn't mean that
> you know squat about the voltage and current on the line. you can not work
> backwards. that is why it is always better to work with voltage or current
> waves and then in the end after you have solved all those waves you can
> always calculate power if you really need to know it.

yes, but he does say that s = (ZL - Zo*) / (ZL + Zo) , first.

But he foolishly calls it a "power wave R. C."

Then he squares the magnitudes [s]**2 = [(ZL - Zo*) / (ZL +
Zo)]**2

And calls this the "power R. C."

The bottom label is fine, we've all see this before, as the ratio
of the RMS incident and reflected voltages, when squared, should give
you the ratio of the average incident and reflected powers, or the
power R. C.

But to call the voltage reflection coefficient a "power wave R.
C."
is really foolish, IMO.

Slick

4107. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 01:36:59 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308241736.60075217@posting.google.com>
Source record: 109751

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030824183940.05610.00000504@mb-m16.aol.com>...
>
> Ah, the fatuous irony of youth. Say, Yee, I'm curious. Did you ever attend
> Lowell? Also, what got you interested in radio? I would think a self-anointed
> artist cum musician like you would avoid technical subjects like the
> plague. You don't seem to be doing very well at any rate.
> 73,
> Tom Donaly, KA6RUH

I've been getting careless with my fast typing, i will admit, so
i'm gonna slow down a bit.

I got my B. S. engineering degree at U. C. Davis. What about
you?

I got hooked into broadcast engineering specifically and RF
generally as soon as i graduated.

This shows you how close-minded people like you can be, when you
tell then you can paint and play guitar too. Actually, LOTS of
engineers ARE musically inclined. The best ones really... :)

Some of my job responsibilities for the past 10 years include:

Design, development and test of circuit and board level RF designs
including impedance matching networks (simulating on MIMP) for E-PHEMT
power amplifiers for the GSM, DCS, and PCS cellular bands
(880MHz-1900MHz). Simulations on ADS to assess manufacturability and
robustness. Bias tuning for EDGE mode EVM and Adjacent channel power.
Optimize circuit design and board layout for PAE, gain flatness,
stability under mismatched loads, receive-band noise, AM to PM, input
VSWR and harmonic suppression.
Design and construction of FM stereo multiplexed Phase Locked
Loop transmitters, broadband design (88-108MHz). Design and selection
of VCOs, pre-scalers, and loop filters. Antenna design and
construction: 5/8ths vertical groundplane, 1/4 wavelength, and
dipoles. Compressor-limiter and Chebychev Low-pass filter design.
Microwave (MMIC) testing and tuning (2-18GHz). Design of
equalizers and filters. Linearity of Detector Logarithmic Video
Amplifiers. Temperature compensation networks.

You win a prize if you can guess where i last worked...

Your turn Tom...

Slick

4108. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 01:55:49 UTC
From: tdonaly@aol.com
Message-ID: <20030824215549.00734.00000484@mb-m02.aol.com>
Source record: 109752

>
> Design, development and test of circuit and board level RF designs
>including impedance matching networks (simulating on MIMP) for E-PHEMT
>power amplifiers for the GSM, DCS, and PCS cellular bands
>(880MHz-1900MHz). Simulations on ADS to assess manufacturability and
>robustness. Bias tuning for EDGE mode EVM and Adjacent channel power.
> Optimize circuit design and board layout for PAE, gain flatness,
>stability under mismatched loads, receive-band noise, AM to PM, input
>VSWR and harmonic suppression.
> Design and construction of FM stereo multiplexed Phase Locked
>Loop transmitters, broadband design (88-108MHz). Design and selection
>of VCOs, pre-scalers, and loop filters. Antenna design and
>construction: 5/8ths vertical groundplane, 1/4 wavelength, and
>dipoles. Compressor-limiter and Chebychev Low-pass filter design.
> Microwave (MMIC) testing and tuning (2-18GHz). Design of
>equalizers and filters. Linearity of Detector Logarithmic Video
>Amplifiers. Temperature compensation networks.
>
>
> You win a prize if you can guess where i last worked...
>
> Your turn Tom...
>
>
>Slick

Very impressive. You've designed 5/8s vertical ground planes,
1/4 wavelength [something or others, I guess] and dipoles.
Where are you working now? Did you go to Lowell?
73,
Tom Donaly, KA6RUH

4109. Re: 40 Foot Lengths of Irrigation Tubing - FREE

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 02:06:24 UTC
From: Mike Coslo <mcoslo@adelphia.net>
Message-ID: <3F496EE6.3090402@adelphia.net>
Source record: 109753

Brian Kelly wrote:
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308222023.2aeca9d@posting.google.com>...
>
>>Where I grew up and became a ham, there wasn't a lot of money floating
>>around, and most of the hams made do with whatever they could for rigs
>>and antennas. A favorite antenna was a 40 foot length of 4"
>>irrigation pipe, vertical, fed against some ground radials. It works
>>out to very nearly 5/8 wave on 20 meters, and isn't hard to load on 40
>>and 15.
>
>
> That's very good application. And they don't take much room to
> install.
>
>
>> Most of them did quite well with it. Maybe that will give
>>some youngster in your area some ideas. Your free offer is most of
>>what they'd need for that sort of antenna.
>>
>>Cheers,
>>Tom
>>
>
>
> I've seen 'em stacked end-to-end to build 40 & 80M verticals, masts to
> support dipoles & rhombics, for booms like the ones I made, etc. Their
> use has been limited only by imaginations. With hams being the
> ingenious buggers we are there aren't many limitations.

What was the BW on those things?

- mike KB3EIA -

4110. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 02:45:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4979c5$1_5@corp.newsgroups.com>
Source record: 109754

Tdonaly wrote:
> What's the radius of a virtual photon, Cecil?

From _Optics_, by Hecht: "When two electrons repel one another, or an electron and proton attract, it is by emitting and absorbing virtual photons and thereby transferring momentum from one to the other, ... Virtual photons can never escape to be detected directly by some instrument."
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4111. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 02:53:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f497ba4_5@corp.newsgroups.com>
Source record: 109755

Tdonaly wrote:
> O.K., Cecil, I want to make a Fresnel lens antenna for forty meters.
> What does it look like, and how do I make one?

Dunno, but the Fresnel Equation for the amplitude reflection coefficient,
assuming normal incidence, is the reflected electric field divided by
the incident electric field. Reckon your great, great, great, great,
great, great, great, great grandfather knew that along with Fresnel?
--
73, Cecil http://www.qsl.net/w5dxp

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-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4112. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 03:00:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f497d38_5@corp.newsgroups.com>
Source record: 109756

Dr. Slick wrote:
> Cecil, email me privately and i will send you the paper. He calls
> the voltage reflection coefficient the "power wave reflection
> coefficient". And then squares this to get the "power reflection
> coefficient".
>
> It's really a bad nomenclature, and no wonder there is confusion.

I agree, it is bad nomenclature. He should have called it the amplitude
or voltage reflection coefficient, the square of which is the power
reflection coefficient.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4113. Re: AH-4 vs. AT-180 w/resonant antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 03:37:50 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <231jkvksi3tqbc79f4c233krrbk1c52ksh@4ax.com>
Source record: 109757
Body handling: HTML body converted to readable text

See http://www.usfamily.net/web/k9eq/ah4/ah4.htm for a good example of
feeding balanced antennas with the AH-4

Dick - W6CCD

On Mon, 25 Aug 2003 00:38:20 GMT, "paulfriedman@comcast.net"
wrote:

>The AH-4 is designed for random wire type antennas. The radiator is attached
>to the AH-4 via a wire post (as is the ground wire).
>
>Paul AB0SI
>
>
>"Drink" wrote in message
>news:vkim4pc8brooa5@corp.supernews.com...
>> Hi OM's,
>> For the IC-706 MkIIG, Icom makes two separate tuners, the AH-4 and the
>> AT-180.
>> FYI: I run the MkIIG and AT-180 to feed a Comet UHV-6 and the setup is
>fine.
>> My curiosity is this. If the AH-4 will tune a non-resonant antenna
>> system, why then wouldn't I prefer it over the AT-180 which is used with a
>> resonant antenna. Couldn't I use the AH-4 with an antenna whether it was
>> resonant or not? Or, is there added benefit of the AT-180?
>> o_o_o_o
>> Best Regards, /| ,[_____],
>> Jim, WP3JQ |ï¿½ï¿½ï¿½L --O|||||||O-
>> ()_)ï¿½()_) ï¿½ï¿½ï¿½ï¿½ï¿½ï¿½ï¿½)_)
>> EM60qk 30.447439N 086.628959W
>>
>>
>

4114. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 05:44:30 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <eb8jkv8uvpu0dgq2apeq4kgbno9k9lhh83@4ax.com>
Source record: 109758

On Sun, 24 Aug 2003 12:57:36 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>
>"Richard Clark" <kb7qhc@comcast.net> wrote in message
>news:22qhkvkp0pts1361bsa53660grmb6u0bqs@4ax.com...
>> Chipman also discusses the relevancy of the characteristic Z of a
>> source to SWR, which is tucked away in the unread part. ;-)
>>
>> 73's
>> Richard Clark, KB7QHC
>
>Richard,
>
>There used to be a Dr. Chipman who taught a fields/waves course at the
>University of Toledo (OH) in the 60s. Do you know if it is the same guy?
>
>Tam/WB2TT
>

Hi Tam,

According to the front cover, one in the same.

73's
Richard Clark, KB7QHC

4115. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 05:53:51 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9v8jkvcappcbg2pvpj5vkmagbgmlb4c5o1@4ax.com>
Source record: 109759

On Sun, 24 Aug 2003 21:53:33 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Tdonaly wrote:
>> O.K., Cecil, I want to make a Fresnel lens antenna for forty meters.
>> What does it look like, and how do I make one?
>
>Dunno, but the Fresnel Equation for the amplitude reflection coefficient,
>assuming normal incidence, is the reflected electric field divided by
>the incident electric field. Reckon your great, great, great, great,
>great, great, great, great grandfather knew that along with Fresnel?

Hi Cecil,

Stumbling through optics again without a flashlight?

It would look like a beam. [Gad Tom, that was too easy.]

73's
Richard Clark, KB7QHC

4116. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 06:13:52 UTC
From: tdonaly@aol.com
Message-ID: <20030825021352.21828.00000439@mb-m17.aol.com>
Source record: 109760

>
>Hi Cecil,
>
>Stumbling through optics again without a flashlight?
>
>It would look like a beam. [Gad Tom, that was too easy.]
>
>73's
>Richard Clark, KB7QHC

Not for Cecil.
73,
Tom Donaly, KA6RUH

4117. Re: Take off angle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 06:44:35 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <3F49B053.8010709@eznec.com>
Source record: 109761

Corrections:

The *magnitude* of the reflection coefficient for horizontally polarized waves is very close to one. But the angle is 180 degrees. That is, there's a phase reversal when the wave reflects. I was also incorrect in saying that the difference in distances for a 30 degree elevation angle for the half wave high antenna is exactly a wavelength. The distance from the antenna to the reflection point is one wavelength, but the difference in distances the rays travel to a distant point is exactly 1/2 wavelength. This can be seen by drawing a line perpendicular to the direct and reflected rays as I suggested in my earlier posting, and looking at the total distances traveled by both rays from their intersection with it. Combined with the phase reversal, the 1/2 wavelength difference in distances results in complete reinforcement at a distant point.

I apologize for the errors. Many thanks to John Farr for reminding me of the phase reversal of the reflection.

Roy Lewallen, W7EL

Roy Lewallen wrote:
>. . .
> For example, if the antenna is a half
> wavelength high, you'll find that at an elevation angle of 30 degrees,
> the reflected ray travels exactly one wavelength farther than the direct
> ray, so the two rays will exactly add in phase.

>. . .

>You do also have to
> include a factor for the reflection coefficient of the reflected ray
> from the ground. But for horizontally polarized waves at moderate to
> low angles, it's very close to one.

>. . .

4118. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 08:01:58 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <o2aQSxC2JcS$EACk@ifwtech.co.uk>
Source record: 109762

Tdonaly wrote:
>>
>>
>>Since the days of Fresnel (1788-1827), this information has been known. To
>>admit that ham radio is 300 years behind the times is pretty sad.
>>--
>>73, Cecil http://www.qsl.net/w5dxp
>>
>
>O.K., Cecil, I want to make a Fresnel lens antenna for forty meters.
>What does it look like,

Big.

About 1429 times larger than the one for 10GHz that was published in
'Ham Radio' some years ago. Fresnel optics (either concentric refractive
rings or concentric apertures) works perfectly well at RF wavelengths.

> and how do I make one?

First hire a crane, and then...

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4119. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 09:28:48 UTC
From: kd1@sympatico.ca
Message-ID: <3F49D6D0.B0232FBB@sympatico.ca>
Source record: 109763

Richard Harrison wrote:
>
> Keith wrote:
> "And when the voltage or current is always zero, so must be the power."
>
> No. When power in each direction is alone measured in each direction,
> it`s found there`s no variation in intensity at all.along the line.

So as I try to understand the error in my logic, you are saying that
there can be power, even though the voltage or current is always 0.

In other words, the expression p(t) = v(t) * i(t) does not always
hold and sometimes when v or i is zero, there is power.

Further exploring my error, is this because p(t) = v(t) * i(t) is
not an expression for power or is it that it only holds under
certain conditions?

...Keith

4120. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 10:16:09 UTC
From: kd1@sympatico.ca
Message-ID: <3F49E1E9.53C3DD02@sympatico.ca>
Source record: 109764

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > It is instantaneous voltages which make standing waves.
>
> That's a no-brainer.
>
> > It is instantaneous signals which cause distortion in diode
> > demodulators.
>
> Please define "instantaneous" for us. I suspect it cannot be what
> happens in a dt=0 time slot.

With a time varying voltage, for each time t there is a particular
value of voltage. This voltage can be called the instantaneous voltage
to make it clear that it is not the average or RMS or peak or any
of the other voltages which may be of interest with regards to the
signal. Hence the notation v(t) representing the voltage at any
time t.

> > It is instantaneous voltages and currents which
> > are added and subtracted in Bird wattmeters.
>
> But the result is rectified and the maximum value is stored on
> a capacitor. By definition, a capacitor cannot accept an instantaneous
> value of voltage. If it could, it would be called an inductor. :-)

None the less, the original additions and subtractions of voltages
and currents must be done with the instantaneous values for the
proper results to be obtained.

> > But I notice an instantaneous willingness to reject the value of
> > instantaneous power.
>
> Please prove that the human brain is capable of instantaneous willingness. :-)

If you will accept proof by example, then simply re-read some of your
posts.

> > But to reject instantaneous power in a consistent manner, you need to
> > explain why you do not also reject instantaneous velocity, acceleration,
> > current, flow or any of the many other interesting things which are a
> > derivative with respect to time.
>
> Some things logically have an instantaneous value, e.g. voltage. Other
> instantaneous values do not seem to be related to reality. Let me use

> your mind-f__king techniques on you. So you are saying that all instantaneous
> values appearing in any math model anywhere have an associated existence
> in reality.

Absolutely not. But I have asked that if you wish to contend that
instantaneous power is of no use while instantaneous current is, that
some rationale be provided. The previous arguments were that it made
no sense because when dt was 0, there was no power. This seemed a weak
argument since a similar argument could be made for the other
instantaneous
value which do seem to be accepted.

> > Assertion A:
> > "In a shorted ideal transmission line which has reached steady state,
> > no energy can cross a voltage or current minimum because
> > p(t) = v(t) * i(t) and at a voltage or current minimum, the voltage
> > or current is always zero, so the power is always zero, so there is
> > no energy flow across a voltage or current minimum."
>
> Assertion B: Since the universe is about 15 billion years older than
> our solar system, transmission lines have probably been doing their
> thing for billions of years longer than your above statement has existed.

Does this non-sequitor mean that you accept Assertion A and wish to
deflect the discussion?

> > This conclusion contradicts a commonly held belief:
>
> Yes, and is therefore probably as wrong as can be.

Perhaps, but I observe that you have not yet pointed out the flaw.
Were you to find the flaw in the logic, I would willingly accept
it as false. Merely that the result disagrees with Belief B is
not, by itself, a flaw.

> There is absolutely
> nothing in physics that prohibits energy from flowing across an area
> where power is zero.

I had always understood that power was defined as the rate of energy
flow. If the power is zero, then by definition, there is no flow.
Perhaps your definition of power is different and we should resolve
that before proceeding.

> > Belief B:
> > "that in steady-state, energy is flowing along the transmission line
> > to the end where it is reflected and travels back to the beginning."
>
> Please present a model of how standing waves are possible without forward
> waves and reflected waves in a single-source, single feedline, single load
> system.

Well, as you agreed near the start of this post (with your statement
"That's a no brainer), it is voltage waves which produce standing waves,
not waves of energy. So Assertion A is not in conflict at all with
standing waves.

> Until you do that, you are just, IMHO, blowing smoke.

It is certainly possible that I have made an error in Assertion A. I
observe that you have not yet located that error. But Assertion A
is fairly short and based on the most basic of concepts. It should
be easy to locate and describe the error, if one exists.

> > Unless you can find an error in the logic of Assertion A, it would
> > seem reasonable that you re-assess your acceptance of Belief B.
>
> The error in assertion A is that EM light waves cause power nulls
> without having any effect on each other whatsoever. And that's exactly
> what happens in a transmission line.

Please go through each of the steps of Assertion A and describe the
first one which is in error and why.

> > Assertion A caused me to reject Belief B and the world did not
> > collapse:
>
> When you reject the primacy of consciousness in favor of the primacy
> of existence, you will understand why your thoughts don't effect reality.
> Your thoughts also do not affect much of reality. What happens when you
> God-like gurus disagree? - Close to nothing!

This, of course, would not assist with the understanding of the nature
of
'reflected' power.

> When you get through with that, consider what happens if time doesn't
> really exist and is simply a model of change invented by the human mind.
> What happens when you divorce change from the rotation of the earth?

Nor would this.

...Keith

4121. Re: Vee vs. Dipole

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 10:38:25 UTC
From: Tom Wagner <tfwagner@snet.net>
Message-ID: <BGl2b.32650$Vx2.14362847@newssvr28.news.prodigy.com>
Source record: 109765

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vkb4844h52sgbf@corp.supernews.com...
<snip>
> Although this is academically interesting, I don't see any immediate
> practical use for the information. It doesn't tell you how strong a
> signal your antenna will produce in a given direction, which is usually
> what you want to know.
>
> Roy Lewallen, W7EL

It tells you how hard to work at moving the ends of the vee out. My tower
is in the woods.
I can move the ends out as far as I want, but I have to cut down branches
and/or trees to
do that. So thanks for the analysis!

73,
Tom - N1MM
Check out the N1MM Free Contest Logger at:
http://www.n1mm.com
http://groups.yahoo.com/group/N1MMLogger/

4122. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 11:36:57 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <HcqdnX-6it5FadSiU-KYvg@crocker.com>
Source record: 109766

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308241722.2e53754a@posting.google.com...
> "David Robbins" <k1ttt@arrl.net> wrote in message
news:<ToKdncND1Kt5h9SiU-KYvw@crocker.com>...
> > "Dr. Slick" <radio913@aol.com> wrote in message
> > news:1d15af91.0308241025.1ff03291@posting.google.com...
> >
> > > [s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2 the "power reflection
> > > coefficent".
> > >
> > > Note the squares.
> > >
> > yes, please do note the squares.... and remember, just because
> >
> > [s]**2 = [(ZL - Zo*) / (ZL + Zo)]**2
> > does NOT mean that
> > s = (ZL - Zo*) / (ZL + Zo)
> >
> > this is the one big trap that all you guys that like to use power in
your
> > calculations fall into. just because you know the power doesn't mean
that
> > you know squat about the voltage and current on the line. you can not
work
> > backwards. that is why it is always better to work with voltage or
current
> > waves and then in the end after you have solved all those waves you can
> > always calculate power if you really need to know it.
>
>
> yes, but he does say that s = (ZL - Zo*) / (ZL + Zo) , first.
>
But he foolishly calls it a "power wave R. C."
>
> Then he squares the magnitudes [s]**2 = [(ZL - Zo*) / (ZL +
> Zo)]**2
>
> And calls this the "power R. C."
>
>
> The bottom label is fine, we've all see this before, as the ratio
> of the RMS incident and reflected voltages, when squared, should give
> you the ratio of the average incident and reflected powers, or the
> power R. C.

>
>
> But to call the voltage reflection coefficient a "power wave R.
> C."
> is really foolish, IMO.
>
>
> Slick

i don't know what he is refering to as the 'power wave rc' but its not the voltage or current reflection coefficient, they do not have a conjugate in the numerator.

4123. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 14:24:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4a1d97_5@corp.newsgroups.com>
Source record: 109767

kd1@sympatico.ca wrote:

> Richard Harrison wrote:
>>When power in each direction is alone measured in each direction,
>>it`s found there`s no variation in intensity at all.along the line.
>
> So as I try to understand the error in my logic, you are saying that
> there can be power, even though the voltage or current is always 0.

Take a look at a light interference pattern. The minimum irradiance
(power) is I1 + I2 - 2*Sqrt(I1*I2). This is called total destructive
interference, i.e. zero power. Yet those two light beams don't even
know each other is there. Their individual power flows are a constant
amplitude and constant direction.

Exactly the same thing holds true for forward and reflected waves. The
"zero power" points are simply the total destructive interference points.
The forward wave is unaffected by the reflected wave and vice versa.
A physical impedance discontinuity is required to cause interaction
between the forward waves and reflected waves. There is no physical
impedance discontinuity at an SWR voltage node in a constant Z0 feedline.
--
73, Cecil http://www.qsl.net/w5dxp

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4124. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 14:43:05 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <FjWdnWg1Uq7jvdeiXTWJhg@comcast.com>
Source record: 109768

Richard,

Thanks. *Really* sharp guy. Must be 90 years old by now.

Tam/WB2TT
"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:eb8jkv8uvpu0dgq2apeq4kgbno9k9lhh83@4ax.com...
> On Sun, 24 Aug 2003 12:57:36 -0400, "Tarmo Tammaru"
> <t-tammaru@home.com> wrote:
>
> >
> >"Richard Clark" <kb7qhc@comcast.net> wrote in message
> >news:22qhkvkp0pts1361bsa53660grmb6u0bqs@4ax.com...
> >> Chipman also discusses the relevancy of the characteristic Z of a
> >> source to SWR, which is tucked away in the unread part. ;-)
> >>
> >> 73's
> >> Richard Clark, KB7QHC
> >
> >Richard,
> >
> >There used to be a Dr. Chipman who taught a fields/waves course at the
> >University of Toledo (OH) in the 60s. Do you know if it is the same guy?
> >
> >Tam/WB2TT
> >
>
> Hi Tam,
>
> According to the front cover, one in the same.
>
> 73's
> Richard Clark, KB7QHC

4125. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 14:46:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4a22c0_5@corp.newsgroups.com>
Source record: 109769

kd1@sympatico.ca wrote:
> With a time varying voltage, for each time t there is a particular
> value of voltage. This voltage can be called the instantaneous voltage
> to make it clear that it is not the average or RMS or peak or any
> of the other voltages which may be of interest with regards to the
> signal. Hence the notation v(t) representing the voltage at any
> time t.

Which implies that (t2 - t1) cannot be zero because that would
make (tn - t1) also zero. So I repeat, power cannot exist if
dt=0.

> The previous arguments were that it made
> no sense because when dt was 0, there was no power. This seemed a weak
> argument since a similar argument could be made for the other
> instantaneous value which do seem to be accepted.

Not a weak argument at all. I think we agreed above that dt=(t2-t1)
is never zero.

> Does this non-sequitor mean that you accept Assertion A and wish to
> deflect the discussion?

Have you stopped beating your wife? See, I can do it also. Please
stop basing your false assertions on NET power and look at the
component energy flowing without effect upon each other.

> Perhaps, but I observe that you have not yet pointed out the flaw.

Observe again. Please reference _Optics_, by Hecht, Chapter 9,
"Interference". You key to understanding will lie in the understanding
of total destructive interference.

> I had always understood that power was defined as the rate of energy
> flow. If the power is zero, then by definition, there is no flow.

There is no NET power and no NET energy flow. There is plenty of
component power and component energy flow. You accuse me of dismissing
"instantaneous power" when you are dismissing a very large portion
of EM physics embodied in the works of Kepler, Descartes, Newton,
Huygens, Fresnel, Maxwell, and Einstein.

Please read up on "total destructive interference" before we continue.

> Well, as you agreed near the start of this post (with your statement
> "That's a no brainer), it is voltage waves which produce standing waves,
> not waves of energy.

So you are saying that voltages waves can exist without energy?
Can voltage waves exist without current waves?

> It is certainly possible that I have made an error in Assertion A. I
> observe that you have not yet located that error.

Of course, I have located the error. You simply do not understand
"total destructive interference" between two waves unaffected by
each other.

> Please go through each of the steps of Assertion A and describe the
> first one which is in error and why.

An SWR voltage (or current) node is the result of total destructive
interference between two waves traveling in opposite directions. Those
two waves have no effect on each other. Your error is in assuming
something about reality based on NET power instead of understanding
the component powers involved in total destructive interference.
--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured
against reality, is primitive and childlike ..." Albert Einstein

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4126. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 14:52:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4a240e_5@corp.newsgroups.com>
Source record: 109770

David Robbins wrote:
> i don't know what he is refering to as the 'power wave rc' but its not the
> voltage or current reflection coefficient, they do not have a conjugate in
> the numerator.

And since the power reflection coefficient (Reflectance) is simply the
square of the voltage (amplitude) reflection coefficient, presumably
neither would it. There is no conjugate in these equations in the field
of optics.
--
73, Cecil http://www.qsl.net/w5dxp

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4127. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 15:28:30 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308250728.23f83f8f@posting.google.com>
Source record: 109771

kd1@sympatico.ca wrote in message news:<3F49E1E9.53C3DD02@sympatico.ca>...
>...
> But I have asked that if you wish to contend that
> instantaneous power is of no use while instantaneous current is, that
> some rationale be provided. The previous arguments were that it made
> no sense because when dt was 0, there was no power.
...

(Agreeing with Keith...) Of course there MUST be instantaneous power,
because if there is not, then one cannot find energy by taking the
integral of power over time. The instantaneous value may be zero, or
positive, or negative, of course. Or perhaps another way to look at
it is that if energy, which itself is a function of time, is
differentiable, then power must take on instantaneous values.

Cheers,
Tom

4128. Re: Take off angle

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 15:31:01 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308250731.4a920cc1@posting.google.com>
Source record: 109772

Roy all of this has peaked up a new interest for me
when it appears that all already knew of this in detail.
I am still having diffriculty in reconciling it via AO
programming where vertical, cw and ccw radiation fields
now comes into being.(the relative patterns cannot be
overlaid as can std horizontal patterns)
I came across a rather large article on this matter in Radcom
March '98 (Ala Antenna topicss publication from the RSGB)
which was sparked off by our old friend Lew McCoy,
where it gives further insights to Moxon's statement regarding
the use of a two element instead of a three element with a
adjustment in height. Probably jumping the gun but I ponder
the fact that this subject may well be related to the yagi/quad
debate but for now I have to read and reread what I have including
your comments until it becomes locked and intuitive.
Thanks again.
And now back to conjugate matching, reflections
and the like which have the interests of all (other than myself)
Regards
Art

Roy Lewallen <w7el@eznec.com> wrote in message news:<3F49B053.8010709@eznec.com>...
> Corrections:
>
> The *magnitude* of the reflection coefficient for horizontally polarized
> waves is very close to one. But the angle is 180 degrees. That is,
> there's a phase reversal when the wave reflects. I was also incorrect in
> saying that the difference in distances for a 30 degree elevation angle
> for the half wave high antenna is exactly a wavelength. The distance
> from the antenna to the reflection point is one wavelength, but the
> difference in distances the rays travel to a distant point is exactly
> 1/2 wavelength. This can be seen by drawing a line perpendicular to the
> direct and reflected rays as I suggested in my earlier posting, and
> looking at the total distances traveled by both rays from their
> intersection with it. Combined with the phase reversal, the 1/2
> wavelength difference in distances results in complete reinforcement at
> a distant point.
>
> I apologize for the errors. Many thanks to John Farr for reminding me of
> the phase reversal of the reflection.
>
> Roy Lewallen, W7EL
>
> Roy Lewallen wrote:

> >. . .
> > For example, if the antenna is a half
> > wavelength high, you'll find that at an elevation angle of 30 degrees,
> > the reflected ray travels exactly one wavelength farther than the direct
> > ray, so the two rays will exactly add in phase.
>
> >. . .
>
> >You do also have to
> > include a factor for the reflection coefficient of the reflected ray
> > from the ground. But for horizontally polarized waves at moderate to
> > low angles, it's very close to one.
>
> >. . .

4129. Re: Help with EZNEC.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 17:25:09 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkkhjdlfrm453e@corp.supernews.com>
Source record: 109773

I'll amplify a little on what Danny said.

If you want to see if the choke is doing its job of reducing feedline radiation, then you have to include both it and the feedline in the model, as Danny described. But you do have to include the outside of the feedline (as described in the manual) all the way from the antenna to the rig, then another wire or wires from the rig to Earth ground. The reason is that this path is part of the radiating structure, if the choke isn't doing its job. You'll also have to know either the impedance of the choke at each frequency or at least band of interest, or its equivalent L and C. If you're using the dimensions of the air wound chokes in the ARRL Handbook near the center of its recommended range, a value of 1000 + j0 ohms is a good working number.

Alternatively, you can assume that the choke is doing its job, and that the feedline radiation is negligible. If you do that, you can put the source at the feedpoint and not include the transmission line or choke in the model. Or, if you're interested in including the impedance transformation of the line in your model, you can use the EZNEC transmission line model to represent it, assuming that the choke is doing its job and the line isn't radiating. In that case, you need to include the length of the line which is wound into a choke, but any effect of the choke itself. When you use the transmission line model, you're modeling the inside of the coax only, and winding the line into a choke has no effect on the inside.

Roy Lewallen, W7EL

Dan Richardson wrote:
> On Sat, 23 Aug 2003 14:23:23 -0600, "Ken Bessler"
> <kg0wx@NOSPAMyahoo.com> wrote:
>
>
>>When modeling an antenna, am I supposed to include the 6 turn,
>>2-5/8" dia rg8x coax choke at the feedpoint?
>>
>>Sorry if it's a dumb question but it's been 9 years since I studied
>>this sort of thing.... :)
>>
>>Ken
>>
>
>
> I presume that you wish to include a coax transmission line with a
> common mode choke? If so there is a section on a work-around for what

> I think you are wanting to do in the EZNEC manual. Look under
> Building the Model/Using Transmission Lines/Modeling Coax Cable in
> EZNEC's help file.
>
> You'll then model the choke as an impedance on the third wire.
>
> Danny, K6MHE
>

4130. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 17:32:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4a49bc_4@corp.newsgroups.com>
Source record: 109775

Tom Bruhns wrote:
> (Agreeing with Keith...) Of course there MUST be instantaneous power,
> because if there is not, then one cannot find energy by taking the
> integral of power over time. The instantaneous value may be zero, or
> positive, or negative, of course. Or perhaps another way to look at
> it is that if energy, which itself is a function of time, is
> differentiable, then power must take on instantaneous values.

I don't think there is any argument over whether it exists in the math
model or not. My argument is that the concept lacks a lot of usefulness.
--
73, Cecil http://www.qsl.net/w5dxp

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4131. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 17:36:11 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkki83pe48aa4a@corp.supernews.com>
Source record: 109774

"> I can not, however, deny that the antenna works."

"Works" is a binary quantity, with only two values. If we divide antennas up into only the two categories of "works" and "doesn't work", I could simplify the EZNEC output a tremendous amount. It would go through all its calculations, then either turn the screen red or green, and that's all the information you'd need. Sounds like your antenna already "works", so what's left to do?

Seriously, if all you want to do is listen to signals, nearly any antenna will "work". At HF, it can be very small and very, very inefficient, and you'll still hear just as many signals as somebody with a big, efficient antenna. I can hear plenty of DX with my tiny Sony radio and its 18" or so whip. So if listening is your goal, any more fussing around you do with the antenna is a waste of time.

But getting them to hear you is another matter entirely. If that's your goal, then effort spent in understanding your antenna is worthwhile, because it will lead the way to improving it.

If you want EZNEC to tell you what the antenna will do, you've got to describe the antenna accurately to EZNEC. In another posting I just made, I suggested three approaches you can take to deal with the feedpoint choke. Hopefully one of them will give you enough information to answer your questions about the antenna.

Roy Lewallen, W7EL

Ken Bessler wrote:
>
> I've run the antenna through EZNEC. I didn't include the feedline
> coil because I did'nt know how to model it. I'm still learning how
> to use the program.
>
> EZNEC not only shows a differant resonance point (3.2:1 @ 9.5 mhz
> with Z=19.81 - j 24.27 ohms) but shows a tighter bandwidth.
>
> I can not, however, deny that the antenna works. Again last night
> I listened in on the 40 meter 3905 century club net and I was hearing
> stations all over. I later moved to WWV @ 5 mhz and heard WWVH
> just as strong as WWV (60 miles away).
>
> Now if I could just figure out how to model the 6 turn choke at the
> feedpoint..... I'd be happy to e-mail anyone my antenna file if they
> would like to modify it. The wires are done and I think I got the feed-
> line right but I'm not sure. Then there is the choke - 6 turns of rg8x

> @ 2-5/8" dia at the feedpoint with 11 feet of rg8x going from there
> to my Z11 tuner.
>
> Any help?
>
> Ken KG0WX
>
>

4132. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 18:46:16 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308251046.25e3093d@posting.google.com>
Source record: 109776

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308231157.78003da6@posting.google.com>...
> "William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vkeu6sru5us08c@corp.supernews.com>...
> >
> > I am looking at W.C. Johnson, pages 15 and 16,
> > Equations 1.22 through 1.25, where he shows, very
> > concisely and elegantly, that the reflection
> > coefficient is zero only when the complex
> > terminating impedance is identically equal to the
> > the complex value of Z0.
> >
> > And not the complex conjugate of Z0.
> >
>
>
> This is ABSOLUTELY WRONG!
>
> The reflection coefficient is zero only when the Zload
> is the conjugate of the Zo.

Do you happen to know what particular form of dementia you are
suffering from? Could you share that with us if you do? It would
seriously help me to understand why you are persisting in this
nonsense.

Cheers,
Tom

4133. Re: Bricks effect in dipole resonance? Help!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 18:55:26 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <YGWdndcuH6MCxteiXTWJjA@comcast.com>
Source record: 109777

"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vkki83pe48aa4a@corp.supernews.com...
> "> I can not, however, deny that the antenna works."
>
> "Works" is a binary quantity, with only two values. If we divide
> antennas up into only the two categories of "works" and "doesn't work",
> I could simplify the EZNEC output a tremendous amount. It would go
> through all its calculations, then either turn the screen red or green,
> and that's all the information you'd need. Sounds like your antenna
> already "works", so what's left to do?
>
> Seriously, if all you want to do is listen to signals, nearly any
> antenna will "work". At HF, it can be very small and very, very
> inefficient, and you'll still hear just as many signals as somebody with
> a big, efficient antenna. I can hear plenty of DX with my tiny Sony
> radio and its 18" or so whip. So if listening is your goal, any more
> fussing around you do with the antenna is a waste of time.
>
> But getting them to hear you is another matter entirely. If that's your
> goal, then effort spent in understanding your antenna is worthwhile,
> because it will lead the way to improving it.
>
> If you want EZNEC to tell you what the antenna will do, you've got to
> describe the antenna accurately to EZNEC. In another posting I just
> made, I suggested three approaches you can take to deal with the
> feedpoint choke. Hopefully one of them will give you enough information
> to answer your questions about the antenna.
>
> Roy Lewallen, W7EL

I've since made several 6 land, 2 land and 8 land contacts on 20 & 40
with good signal reports. And that was with SF=110 A=45 & K=3!
One contact late saturday night in NJ on 40 was shocked at my antenna
setup - He strongly advised me not to change anything! Not that I could,
even if I wanted to....

I must be doing something right with my itty bitty 4 watts.......

Thanks for all the help.... :-)

Ken KG0WX

4134. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 19:17:32 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308251117.12dd7346@posting.google.com>
Source record: 109778

"David Robbins" <k1ttt@arrl.net> wrote in message
news:<HcqdnX-6it5FadSiU-KYvg@crocker.com>...
>
> i don't know what he is refering to as the 'power wave rc' but its not the
> voltage or current reflection coefficient, they do not have a conjugate in
> the numerator.

Incorrect. You need the conjugate in the numerator if the Zo is
complex. If it is purely real, WHICH MOST TEXTS ASSUME, then you can
use the normal equation.

Look here:

http://www.zzmatch.com/lcn.html

And look up Les Besser's notes on the Fundamentals of RF.

Slick

4135. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 19:18:47 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308251118.38541c34@posting.google.com>
Source record: 109779

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f497d38_5@corp.newsgroups.com>...
> Dr. Slick wrote:
> > Cecil, email me privately and i will send you the paper. He calls
> > the voltage reflection coefficient the "power wave reflection
> > coefficient". And then squares this to get the "power reflection
> > coefficient".
> >
> > It's really a bad nomenclature, and no wonder there is confusion.
>
> I agree, it is bad nomenclature. He should have called it the amplitude
> or voltage reflection coefficient, the square of which is the power
> reflection coefficient.

Agreed. I will send you the paper.

Slick

4136. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 19:31:46 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308251131.3a7988d1@posting.google.com>
Source record: 109780

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030824215549.00734.00000484@mb-m02.aol.com>...
>
> Very impressive. You've designed 5/8s vertical ground planes,
> 1/4 wavelength [something or others, I guess] and dipoles.
> Where are you working now? Did you go to Lowell?
> 73,
> Tom Donaly, KA6RUH

Did you skip the part about U. C. Davis?

I'm working part-time in the RF field, after being laid off among
what seems like everyone else. Gives me time to paint my next masterpiece!

Tit for Tat, maybe you can tell us something about you, Tom.

last school attended? Job responsibilities?

Slick

4137. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 19:35:36 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <MLWdnRrrKsCU-NeiXTWJiw@crocker.com>
Source record: 109781

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308251117.12dd7346@posting.google.com...
> "David Robbins" <k1ttt@arrl.net> wrote in message
news:<HcqdnX-6it5FadSiU-KYvg@crocker.com>...
> >
> > i don't know what he is refering to as the 'power wave rc' but its not
the
> > voltage or current reflection coefficient, they do not have a conjugate
in
> > the numerator.
>
>
> Incorrect. You need the conjugate in the numerator if the Zo is
> complex. If it is purely real, WHICH MOST TEXTS ASSUME, then you can
> use the normal equation.
>

sorry, the derivation for the table in the book i sent before is for the
general case of a complex Zo. they then go on to simplify for an ideal line
and for a nearly ideal line... nowhere does a conjugate show up.

and that reference you give is not for a load on a transmission line, it is
talking about a generator supplying power to a load... a completely
different animal.

4138. Hy Gain TH3 MK3 triband Beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 20:42:54 UTC
From: karoo <g7lrr@pcss.karoo.co.uk>
Message-ID: <bidsebjfa1@newsreaderg1.core.theplanet.net>
Source record: 109782

Hi Name here Andy i have gotten hold of 30 year old Hy Gain TH3 MK3 triband Beam it is in great nick for antenna over 25 years old clean up lovely but I am need of a manual or just the measurements for the antenna for phone use I have downloaded the TH3 MK4 manual but the beta match is not the same and I am told the measurement's are different the match on the th3 mk3 is the old so
called shotgun beta match can anyone help me out a copy or a scanned page of the measurements and beta system would help me greatly if you want to send by post or
email I will pay postage etc.. please send any reply to g7lrr@no.spam.karoo.co.uk please remove the no.spam when replying

Many thanks Andy G7LRR my Details for post are at QRZ

4139. Re: Re-Normalizing the Smith Chart (Changing the SWR into thesame...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 22:46:58 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308251446.3cb8aeca@posting.google.com>
Source record: 109783

W5DXP <Cecil.A.Moore@ieee.org> wrote in message news:<3f4a49bc_4@corp.newsgroups.com>...
> Tom Bruhns wrote:
> > (Agreeing with Keith...) Of course there MUST be instantaneous power,
> > because if there is not, then one cannot find energy by taking the
> > integral of power over time. The instantaneous value may be zero, or
> > positive, or negative, of course. Or perhaps another way to look at
> > it is that if energy, which itself is a function of time, is
> > differentiable, then power must take on instantaneous values.
>
> I don't think there is any argument over whether it exists in the math
> model or not. My argument is that the concept lacks a lot of usefulness.

Ah, I see. Well, consider this: the concept IS useful to me. That's
not an arguable point, as I am the only one who can evaluate it. If
it isn't to you, you don't have to use it. I'll not argue with that.

Cheers,
Tom

4140. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 23:24:14 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkl6kq9f6ud21b@corp.supernews.com>
Source record: 109784

Dan wrote:
> Now that the various typo mistakes have been corrected, and putting
> aside for the moment the name calling and ad hominem arguments, could
> it be that _both_ sides in this discussion are correct? Camp 'A' says
> that the reflection coefficient is computed the classical way, without
> using Zo conjugate, and offers various mathematical proofs and
> discussions of infinitely long lines. Camp 'B' says the reflection
> coefficient is computed with Zo* (Zo conjugate) in the numerator, and
> offers explanations dealing with the conservation of energy and
> maximum transfer of power.

No one from "Camp B" has given any justification for the assumption that the condition for minimum reflection is the condition for maximum power transfer. We're lacking either a proof, a derivation from known principles, or even a numerical example. I maintain that this assumption is false.

Likewise, there's no evidence that the conventional and universally accepted (within the professional community) formula for reflection coefficient violates the conservation of energy. If it did, it would have been shown to be in error long ago.

> Both sides may be correct since they are talking about _two different_
> meanings for the term "reflection coefficient." One has to do with
> voltage (or current) traveling waves and the other has to do with
> power. . .

Perhaps. Yet both groups have used it as though it's a voltage reflection coefficient, and as justification for statements made about the reflection of voltage waves.

If people want to argue about the reflection of power waves, I'll gladly bow out and let Cecil and his colleagues resume their interminable arguments without me. If anyone wants to discuss voltage or current waves, I'll try to continue to contribute, as long I don't have to deal with Slick and the insults he uses in place of supporting evidence.

>. . .

> So, it seems to me, everybody can agree as long as it is understood
> that there are different meanings for the term "reflection
> coefficient." One meaning, and its mathematical definition, applies
> to voltage or current waves. The other, with a slightly different
> mathematical definition, applies to the power transfer from a line to
> a load. They are one and the same only when the reactive portion of
> Zo (Xo) is ignored. It may or may not be acceptable to do so,

> depending on the attenuation of the line and the frequency. Lossy
> lines and lower frequencies yield more negative values for the Xo
> component of Zo.

I suggest that those who are using "reflection coefficient" as meaning the ratio of reflected to forward power so state, and restrict their conclusions dervived from it to power waves.

>. . .

Roy Lewallen, W7EL

4141. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-25 23:25:44 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkl6njn32rpn75@corp.supernews.com>
Source record: 109785

Hey, I've got it. It's sort of a "virtual reflection coefficient". Now I understand fully. Thanks!

Roy Lewallen, W7EL

W5DXP wrote:
> . . .
> The energy analysis on my web page deals only with physical reflection
> coefficients. If 'rho' is not a physical reflection coefficient, then
> it is the END RESULT of a mathematical calculation and is not the
> CAUSE of anything. If a source doesn't "see" a physical impedance
> discontinuity, it doesn't "see" anything except forward and reflected
> waves. Coherent waves traveling in opposite directions are "unaware" of
> each other. Coherent waves traveling in the same direction merge, lose
> their separate identies, and become indistinguishable from one another.

4142. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 00:09:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <Gyx2b.12640$8i2.5897@newsread2.news.atl.earthlink.net>
Source record: 109786

Roy:

[snip]
> No one from "Camp B" has given any justification for the assumption that
> the condition for minimum reflection is the condition for maximum power
> transfer. We're lacking either a proof, a derivation from known
> principles, or even a numerical example. I maintain that this assumption
> is false.
[snip]

I did just that in a separate posting on this thread a couple of days ago.

In fact I "proved" in that post, using basic algebra, that maximum power transfer [i.e. a
conjugate match] does not result in a null in the classical voltage reflection
coefficient. One only get's a null in the classic reflection coefficient if one has
an "image match", i.e. a Zo match to use Cecil's favorite name for that old term.

I believe that "Mother Nature's" voltage reflection coefficient is the well known
classical one, i.e.

rho = (Z - Zo)/(Z + Zo) is "Mother Nature's" reflection coefficient.

Simply because it corresponds to the "image match", i.e. rho will be null when Z = Zo [Not conj(Zo)], and is the condition for there to be no reflected voltage wave.

Note: this is *NOT* the condition for a "conjugate match" i.e. maximum power transfer does not result in a null voltage refelection coefficient in the
general case.

As a "thought experiment" to support my contention that

rho = (Z - Zo)/(Z + Zo)

Is "natural", consider the case of an infinitely long transmission line of surge
impedance [characteristic impedance] Zo, where in general Zo may be complex e.g.

Zo = sqrt((R + pL)/(G + pC))

Where, R, L, G and C are the primary parameters of the line.

Consider that you are standing in the "center" of this infinitely long line and that you
cut the line with a pair of pliers. Looking in one direction down the line you see a
driving point impedance equal to the surge impedance of that semi-infinite line which
is Zo. Looking in the other direction you will also see a driving point impedance
equal to the surge impedance Zo of a semi-infinite line. And so...

at the center cut you have made, one has an "image match". i.e. at the center cut
you have two equal driving point impedances Zo in each direction facing each other.

This is a Zo match, or "image match", it is not a conjugate match!

Next solder the cut back together and then consider a "wave" launched from one end
of this infinite line in one direction. Such a wave will move in one direction only on down
that Zo line forever and will never be reflected.

Now as the wave is passing the "cut" insert a reflectometer with internal reference
impedance equal to Zo the characteristic surge impedance of the line. This reflectometer
will read a rho of:

rho = (Z - Zo)/(Z + Zo) where Z = Zo and rho = 0, it should of course indicate zero reflected voltage since there are no reflections on this line.

And so I maintain that "Mother Nature" favors the *definition*

rho = (Z - Zo)/(Z + Zo)

or as I like to write it rho = (Z - R)/(Z + R) where I like to use R representing the
Reference impedance i.e. R = Zo because R is the reference impedance inside the reflectometer and may or may not be equal to a Zo as appropriate for the use.

And I have no problem whatsoever with this definition of rho not being null when there is a conjugate match. In the general case for "Mother Nature's" reflection coefficient rho will not be zero when there is maximum power transfer.
In fact there may well be considerable reflected VAR's in that case... VAR's
being Volt Amperes Reactive, i.e. reactive power at the conjugate match point.

On the other hand, I have no argument with those who choose to define rho as:

rho = (Z - conj(Zo))/(Z + conj(Zo)) as long as they are consistent in it's use
and the conclusions they draw from it. Here they will get a null rho for a conjugate
match, and they will not get a null rho for an image match.

But I maintain that is "unatural" and "Mother Nature" naturally likes the classical

rho = (Z - Zo)/(Z + Zo)

Thoughts, comments?

--
Peter K1PO
Indialantic By-the-Sea, FL.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4143. Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 00:28:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <uQx2b.12664$8i2.19@newsread2.news.atl.earthlink.net>
Source record: 109787

I believe that "Mother Nature's" voltage reflection coefficient is the well known classical one, i.e.

rho = (Z - Zo)/(Z + Zo) is "Mother Nature's" reflection coefficient.

I believe this simply because it corresponds to the "image match"!

i.e. rho will be null when Z = Zo [NOT conj(Zo)], and is the condition for there to be no reflected voltage wave.

Note: this is *NOT* the condition for a "conjugate match" i.e. maximum power transfer does not result in a null voltage refelection coefficient in the case of a general complex surge impedance Zo.

As a "thought experiment" to support my contention that

rho = (Z - Zo)/(Z + Zo)

Is "natural", consider the case of an infinitely long transmission line of surge
impedance [characteristic impedance] Zo, where in general Zo may be complex and not necessarily a real constant e.g. [Zo is not 50 Ohms resistive or some other
such simple case.] i.e.

Zo = Zo(p) = sqrt((R + pL)/(G + pC))

Where, R, L, G and C are the primary parameters of the line and p is the complex
frequency p = s + jw and the value of Zo is complex in general and may vary with frequency p.

In this thought experiment consider that you are standing in the "center" of this
infinitely long line of surge impedance Zo and that you cut said line with a pair of
pliers.

Looking in one direction down the semi-infinite line you see a
driving point impedance equal to the surge impedance Zo of that semi-infinite
line. Looking in the other direction you will also see a driving point impedance equal to the surge impedance Zo of a semi-infinite line.

And so...

at the cut you have made, there is an "image match". i.e. at the
cut two equal driving point impedances Zo are facing each

other.

This is a Zo match, or "image match", it is not a conjugate match! In a conjugate match Zo would be facing conj(Zo).

Now solder the cut back together and then consider a "wave" launched from one end of this infinite line in one direction. If you have trouble picturing this
situation just imagine it is Douglas Adams sitting on the patio of the Restaurant
at the End of the Universe with his handy wave generator who launches the wave!

Such a wave will move in one direction only on down that Zo line forever and will never be reflected because there are no discontinuities over that infinite
distance.

Now as the wave is passing the "cut" that you made in the center of that infinite
line, quickly insert a reflectometer with internal reference impedance R = Zo,
the characteristic surge impedance of the line.

This reflectometer will read a rho of:

rho = (Z - Zo)/(Z + Zo)

Where, since one sees Zo in both directions at the cut and so Z = Zo and rho = 0, as it should of course indicate zero reflected voltage since there are no
"reflections" on this infinite line with a wave travelling in only one direction.

This is a very natural situation...

And so I maintain that "Mother Nature" favors the *definition*

rho = (Z - Zo)/(Z + Zo)

or as I like to write it rho = (Z - R)/(Z + R) since I like to use R representing the
[R]eference impedance i.e. R = Zo because R is the [R]eference impedance used
inside the reflectometer and whichmay or may not be equal to Zo as appropriate for the
intended use.

I have no problem whatsoever with this definition of rho not being null when there is a conjugate match.

In the general case for "Mother Nature's" reflection coefficient rho will not be
zero when there is maximum power transfer.

In fact there may well be considerable reflected VAR's in that case...
VAR's being Volt Amperes Reactive, i.e. reactive power reflected at the
conjugate match point.

On the other hand, I have no argument with those who choose to define rho
as:

rho = (Z - conj(Zo))/(Z + conj(Zo))

just as long as they are consistent in it's use and the conclusions they
draw from
it. Here they will get a null rho for a conjugate match, and they will not
get a null
rho for an image match.

I can see situations in which such a defintion of rho using conj(Zo) might
be useful,
not necessary mind you, but perhaps more convenient for solving some
problems.

But I still maintain that defining rho in terms of the conjugate of Zo is
"unatural" and
that "Mother Nature" naturally likes the classical...

rho = (Z - Zo)/(Z + Zo)

because that is what she uses herself when she supports the natural
propagation of waves
on transmission lines.

Thoughts, comments?

--
Peter K1PO
Indialantic By-the-Sea, FL.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4144. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 01:48:29 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4abde6$1_6@corp.newsgroups.com>
Source record: 109788

Roy Lewallen wrote:
> If people want to argue about the reflection of power waves, I'll gladly
> bow out and let Cecil and his colleagues resume their interminable
> arguments without me.

I don't think there's anything to argue about. From _Optics_, by Hecht:
"We define the reflectance R to be the ratio of the reflected power to
the incident power." "When we talk about the 'amount' of light illuminating
a surface, we are referring to something called the irradiance, denoted by
I - the average energy per unit area per unit time." Light and RF are both
EM waves. These scientific facts concerning light have only been known to
physics for about 300 years.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4145. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 01:54:51 UTC
From: kd1@sympatico.ca
Message-ID: <3F4ABDEB.58A778E0@sympatico.ca>
Source record: 109791

W5DXP wrote:
> kd1@sympatico.ca wrote:
> > Richard Harrison wrote:
> >>When power in each direction is alone measured in each direction,
> >>it`s found there`s no variation in intensity at all.along the line.
> > >
> > > So as I try to understand the error in my logic, you are saying that
> > > there can be power, even though the voltage or current is always 0.
> >
> Take a look at a light interference pattern. The minimum irradiance
> (power) is I1 + I2 - 2*Sqrt(I1*I2). This is called total destructive
> interference, i.e. zero power. Yet those two light beams don't even
> know each other is there. Their individual power flows are a constant
> amplitude and constant direction.
>
> Exactly the same thing holds true for forward and reflected waves. The
> "zero power" points are simply the total destructive interference points.
> The forward wave is unaffected by the reflected wave and vice versa.
> A physical impedance discontinuity is required to cause interaction
> between the forward waves and reflected waves. There is no physical
> impedance discontinuity at an SWR voltage node in a constant Z0 feedline.

As I read your reply, I am having some difficulty understanding how it
applies to the question.

Are you saying that there can be power when the voltage or current
is always 0? And that this is the error in the sequence of steps
which makes Assertion A false?

Consider again, Assertion A, in more detail this time:
1) Consider a shorted ideal transmission line excited by a single
frequency sinusoidal signal which has reached steady state
2) At quarter wave points along this line, voltages and currents
which are always 0 can be observed -- the standing wave
3) Power is the rate at which energy flows
4) The power (rate of energy flowing) at time t can be computed
using p(t) = v(t) * i(t)
5) Substituting a voltage or current which is always 0 into the
expression above will result in a power which is also always 0
6) From 2) and 5), the power (rate of energy flowing) at quarter
wave points will be 0
7) From 6), the energy crossing quarter wave points is 0
8) From 7), energy can not be flowing down and up the line
crossing quarter wave points

Assume for the moment that all this optical talk has convinced me
that conclusion 8) from Assertion A is false. For Assertion A
to be false, one of the steps in Assertion A must be false.
All the steps in Assertion A seem correct to me.
Can you help me find the false step which makes Assertion A false?

...Keith

4146. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 01:55:47 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4abfa3_6@corp.newsgroups.com>
Source record: 109790

Peter O. Brackett wrote:
> But I maintain that is "unatural" and "Mother Nature" naturally likes the
> classical
>
> rho = (Z - Zo)/(Z + Zo)
>
> Thoughts, comments?

I agree with you, Peter. That's what I have been calling the physical
reflection coefficient. At the junction of two transmission lines of
different characteristic impedances, it becomes s11=(Z02-Z01)/(Z02+Z01)
and is usually not equal to rho=Sqrt(Pref/Pfwd).
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4147. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 01:56:36 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bieeok$4hn$1@titan.btinternet.com>
Source record: 109789

Dear Roy,

To reduce the amount of bafflegab to an absolute minimum why don't you just say that immediately the value of the reflection coefficient is squared (to allow 'power' to be introduced) half of the information it contains is tossed into the nearest garbage heap.

Any conclusions drawn from following calculations are inevitably ambiguous and highly suspicious to say the least.

To mention one well-known example, that's why it is impossible to deduce the value of the line-terminating impedance from the calculated SWR.

Ignorance is the root cause of these silly, time-wasting arguments.

Get back to basics, erase Smith Charts, mis-quoted worshipped idols, and ill-conceived inventions from your minds and start afresh from R, L, C, G, F and little t.

Fortunately, the success of proposed missions to Mars does not depend on the deliberations of this newsgroup.

Cec, by the way, are there any vinyards in Texas? It *is* as big as France.

Yours, Reg, G4FGQ

4148. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 02:08:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4ac291$1_6@corp.newsgroups.com>
Source record: 109792

Reg Edwards wrote:
> To reduce the amount of bafflegab to an absolute minimum why don't you just
> say that immediately the value of the reflection coefficient is squared (to
> allow 'power' to be introduced) half of the information it contains is
> tossed into the nearest garbage heap.
>
> Any conclusions drawn from following calculations are inevitably ambiguous
> and highly suspicious to say the least.

Nope, they're not Reg. For Z0-matched systems (which most ham systems are),
rho^2 is all you need to know along with the forward and reflected powers
to completely solve the voltage, current, and phase conditions at the
impedance discontinuity. If you know that Pref1=0, which it does for a
Z0-matched system, half the information is all you need. Given the length
of the feedline, you can calculate the exact load.

> Cec, by the way, are there any vinyards in Texas? It *is* as big as France.

We do have vineyards here and there's a winery about 35 miles from my house.
But I have never gotten up the nerve to go wine tasting there. :-) I tend
to like cold weather grapes.
--
73, Cecil http://www.qsl.net/w5dxp

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------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4149. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 02:19:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4ac523_6@corp.newsgroups.com>
Source record: 109794

kd1@sympatico.ca wrote:
> Are you saying that there can be power when the voltage or current
> is always 0? And that this is the error in the sequence of steps
> which makes Assertion A false?

There can and does exist component energy when the NET power is zero.
You will understand this when you understand complete destructive
interference in light waves represented by the equation

I1 + I2 -2*Sqrt(I1*I2) equation 9.16, page 388, in the 4th edition
of _Optics_, by Hecht.

Two waves are flowing with unchanging energies and producing an absolutely
black ring, i.e. zero irradiance equals zero power.

> Consider again, Assertion A, in more detail this time:

It won't do a bit of good to rehash this until you understand complete
destructive interference. The two interfering waves flow unabated.
You are being fooled by superposition of two waves whose component
energies are completely independent of each other.

> All the steps in Assertion A seem correct to me.
> Can you help me find the false step which makes Assertion A false?

Yes, I already did that more than once. You will not understand until
you understand how two light beams can cause zero power without even
knowing the other wave is there. There is absolutely no change in
the energy levels in the individual waves during complete destructive
interference.
--
73, Cecil http://www.qsl.net/w5dxp

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4150. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 02:20:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vklh04lt3svp48@corp.supernews.com>
Source record: 109793

I'm trying to follow this, but have gone astray on the first couple of steps.

Peter O. Brackett wrote:
>
> The definition of the reflection coefficient is dependent upon what you
> define the "reflected voltage" to be.
>
> Consider the classical bridge circuit for measuring reflection coefficients.
>
> If Z is an unknown load presented to a generator of internal impedance R and
> that internal impedance R is used as the "reference" impedance to
> observe/measure the reflected voltage b and that reflected voltage b is
> calculated/measured by observation of the voltage v across the load Z and
> the current i through the load Z then the classical definition of a
> reflected voltage would be calculated as:
>
> b = v - Ri = Zi - Ri = (Z - R)i Volts.

First of all, you're speaking of a circuit with a source impedance R and load impedance Z, rather than a terminated transmission line. Forward and reflected wave terminology is widely used in S parameter analysis, which also uses this model, so I'll be glad to follow along to see if and how S parameter terminology differs from the transmission line terminology we've been discussing so far. Please correct me where my assumptions diverge from yours.

Your "classical definition" of b isn't one familiar to me. v + Ri would of course be the source voltage (which I'll call Vs). So v - Ri is Vs - 2*Ri. Where does this come from and what does it mean?

From your equation, and given source voltage Vs, i = Vs/(R+Z). Therefore, your "classical definition" of reflected voltage b is, in terms of Vs, Vs*((Z-R)/(Z+R)).
>
> and the incident voltage a would be the Thevinins equivalent voltage across
> the sum of Z and R, i.e.
>
> a = (Z + R)i

Since i = Vs(Z+R), you're saying that a = the source voltage Vs (from your two equations). So what you're calling the "incident voltage" is simply the source voltage Vs.

Let's do a consistency check. The voltage at the load should be a + b = Vs + Vs*((Z-R)/(Z+R)) = Vs*2Z/(Z+R). Inspection of the circuit as I

understand it shows that the voltage at the load should be half this value. So, we already diverge. Which is true:

1. I've goofed up my algebra (a definite possibility)
2. I've misinterpreted your circuit, or
3. The voltage at the load is not equal to the sum of the forward and reflected voltages a and b, as you use the terms "forward voltage" and "reflected voltage". If v isn't equal to a + b, then what is the relationship between v, a, and b, and what are the physical meanings of the forward and reflected voltages?

I'd like to continue with the remainder of the analysis, but can't proceed until this problem is cleared up.

> . . .

Roy Lewallen, W7EL

4151. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 02:23:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4ac61c$1_6@corp.newsgroups.com>
Source record: 109796

Roy Lewallen wrote:
> As soon as anyone starts arguing about average power waves, I'm outta
> here. I'd just as soon argue about the temperature of ghosts.

You probably don't discuss light waves all that often, eh? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4152. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 02:24:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vklh782bathg19@corp.supernews.com>
Source record: 109795

Thanks for the suggestion, Reg, and it's absolutely true. But even more information is thrown away when you take the average of the power. Remember the statistician who drowned when crossing the creek whose average depth is only three feet.

As soon as anyone starts arguing about average power waves, I'm outta here. I'd just as soon argue about the temperature of ghosts.

Roy Lewallen, W7EL

Reg Edwards wrote:
> Dear Roy,
>
> To reduce the amount of bafflegab to an absolute minimum why don't you just
> say that immediately the value of the reflection coefficient is squared (to
> allow 'power' to be introduced) half of the information it contains is
> tossed into the nearest garbage heap.
>
> Any conclusions drawn from following calculations are inevitably ambiguous
> and highly suspicious to say the least.
>
> To mention one well-known example, that's why it is impossible to deduce the
> value of the line-terminating impedance from the calculated SWR.
>
> Ignorance is the root cause of these silly, time-wasting arguments.
>
> Get back to basics, erase Smith Charts, mis-quoted worshipped idols, and
> ill-conceived inventions from your minds and start afresh from R, L, C, G, F
> and little t.
>
> Fortunately, the success of proposed missions to Mars does not depend on the
> deliberations of this newsgroup.
>
> Cec, by the way, are there any vinyards in Texas? It *is* as big as France.
> ----
> Yours, Reg, G4FGQ
>
>

4153. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 02:32:56 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vklhmlsfv5i0e7@corp.supernews.com>
Source record: 109797

Actually, all you've got to do to understand this is to realize that energy is the time integral of power. (Remember that "useless" quantity of power as a time function?) When you integrate power to get energy, you get a constant. That constant is the energy present when power = 0, and it has to be evaluated by knowing something other than just the power. In a transmission line, that energy is stored in the electric and/or magnetic fields during the times energy isn't moving (i.e., when p(t) = 0). Really, math is cool.

Roy Lewallen, W7EL

W5DXP wrote:
> kd1@sympatico.ca wrote:
>
>> Are you saying that there can be power when the voltage or current
>> is always 0? And that this is the error in the sequence of steps
>> which makes Assertion A false?
>
>
> There can and does exist component energy when the NET power is zero.
> You will understand this when you understand complete destructive
> interference in light waves represented by the equation
> . . .

4154. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 02:59:36 UTC
From: kd1@sympatico.ca
Message-ID: <3F4ACD18.FDDF2DBB@sympatico.ca>
Source record: 109798

W5DXP wrote:
> kd1@sympatico.ca wrote:
> > All the steps in Assertion A seem correct to me.
> > Can you help me find the false step which makes Assertion A false?
>
> Yes, I already did that more than once. You will not understand until
> you understand how two light beams can cause zero power without even
> knowing the other wave is there. There is absolutely no change in
> the energy levels in the individual waves during complete destructive
> interference.

I conclude from this response that you are unable to detect any
flaws in the logic of steps 1 to 8. Oh well.

...Keith

4155. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 03:18:15 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308251918.1c704dc0@posting.google.com>
Source record: 109799

"David Robbins" <k1ttt@arrl.net> wrote in message
news:<MLWdnRrrKsCU-NeiXTWJiw@crocker.com>...
> >
> > Incorrect. You need the conjugate in the numerator if the Zo is
> > complex. If it is purely real, WHICH MOST TEXTS ASSUME, then you can
> > use the normal equation.
> >
>
> sorry, the derivation for the table in the book i sent before is for the
> general case of a complex Zo. they then go on to simplify for an ideal line
> and for a nearly ideal line... nowhere does a conjugate show up.
>

Please post this derivation again.

When they say "ideal line" do they mean purely real?

> and that reference you give is not for a load on a transmission line, it is
> talking about a generator supplying power to a load... a completely
> different animal.

Not at all really. The impedance seen by the load can be from
either a source or a source hooked up with a transmission line. It
doesn't matter with this equation.

As Reg points out about the normal equation:

"Dear Dr Slick, it's very easy.

Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.

Load it with a real resistor of 10 ohms in series with a real
inductance of
40 millihenrys.

The inductance has a reactance of 250 ohms at 1000 Hz.

If you agree with the following formula,

Magnitude of Reflection Coefficient of the load, ZL, relative to line
impedance

= (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,

and has an angle of -59.9 degrees.

The resulting standing waves may also be calculated.

Are you happy now ?"

Reg, G4FGQ

Well, i wasn't happy, because how can you have a R.C. greater than
one into a passive network??? Quite impossible.

But, if you use the conjugate formula, the R.C. will indeed be
less than one.

Convince yourself.

Slick

4156. Re: Hy Gain TH3 MK3 triband Beam

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 03:34:12 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f4ad7dd_4@news1.prserv.net>
Source record: 109800

Andy:
direct email at g7lrr@karoo etc. failed. Email me directly with a good
address. I have a TH3 original which may have the correct dimensions. Need
more specific details.

--
Crazy George
Remove NO and SPAM from return address
"karoo" <g7lrr@pcss.karoo.co.uk> wrote in message
news:bidsebjfa1@newsreaderg1.core.theplanet.net...
> Hi Name here Andy i have gotten hold of 30 year old Hy Gain TH3 MK3
triband
> Beam it is in great nick for antenna over 25 years old clean up lovely but
I
> am need of a manual or just the measurements for the antenna for phone use
I
> have downloaded the TH3 MK4 manual but the beta match is not the same and
I
> am told the measurement's are different the match on the th3 mk3 is the
old
> so
> called shotgun beta match can anyone help me out a copy or a scanned page
of
> the measurements and beta system would help me greatly if you want to send
> by post or
> email I will pay postage etc.. please send any reply to
> g7lrr@no.spam.karoo.co.uk please remove the no.spam when replying
>
> Many thanks Andy G7LRR my Details for post are at QRZ
>
>
>

4157. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 04:03:54 UTC
From: richardharrison@webtv.net
Message-ID: <26331-3F4ADC2A-341@storefull-2312.public.lawson.webtv.net>
Source record: 109801

Keith wrote:
"2) At quarter wave points along this line, voltages and currents which are always 0 can be observed -- the standing wave."

This is proof positive in Keith`s own words that the first 0-volt point encountered by either forward or reflected wave is completely ineffective in halting or abating progress of the waves.

Keith also wrote:
"6) From 2) and 5), the power (rate of energy flow) at quarter wave points will be 0."

The contradiction is obvious. Were energy flow or power reduced by SWR zeros, you would not have multiple zeros along the line.

Best regards, Richard Harrison, KB5WZI

4158. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 04:19:10 UTC
From: tdonaly@aol.com
Message-ID: <20030826001910.12079.00000410@mb-m20.aol.com>
Source record: 109802

>
>tdonaly@aol.com (Tdonaly) wrote in message
>news:<20030824215549.00734.00000484@mb-m02.aol.com>...
>>
>> Very impressive. You've designed 5/8s vertical ground planes,
>> 1/4 wavelength [something or others, I guess] and dipoles.
>> Where are you working now? Did you go to Lowell?
>> 73,
>> Tom Donaly, KA6RUH
>
>
> Did you skip the part about U. C. Davis?
>
> I'm working part-time in the RF field, after being laid off among
>what seems like everyone else. Gives me time to paint my next masterpiece!
>
> Tit for Tat, maybe you can tell us something about you, Tom.
>
> last school attended? Job responsibilities?
>
>
>Slick
>
>

My pitifully inadequate education could be of no interest to you, Garvin; I'm
just a humble ham. (This is an _amateur_ newsgroup after all.) It is
interesting to me, though, that a person of your age and attainments
would pose as a potty-mouth little black-faced god whenever someone
disagreed with you about something as abstruse as the reflection
coefficient on a transmission line. I can only suppose that your social
education was deficient, or that you really do want your name to be the
most popular in the group's collective killfile. Anyway, you're wasting your
time with the infantile behavior. Most of the fellows on this group are old
men
who gave up that form of discourse when they learned to talk.
By the way, some of your art isn't half bad and shows the influence of some
training. Did you have an art minor in college?
73,
Tom Donaly, KA6RUH

4159. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 04:29:09 UTC
From: tdonaly@aol.com
Message-ID: <20030826002909.12079.00000411@mb-m20.aol.com>
Source record: 109803

>
>Cec, by the way, are there any vinyards in Texas? It *is* as big as France.
>----
>Yours, Reg, G4FGQ
>

That's where they used to make Thunderbird, and Ripple.
73,
Tom Donaly, KA6RUH

4160. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 04:38:50 UTC
From: tdonaly@aol.com
Message-ID: <20030826003850.12079.00000412@mb-m20.aol.com>
Source record: 109804

>
>But I still maintain that defining rho in terms of the conjugate of Zo is
>"unatural" and
>that "Mother Nature" naturally likes the classical...
>
>rho = (Z - Zo)/(Z + Zo)
>
>because that is what she uses herself when she supports the natural
>propagation of waves
>on transmission lines.
>
>Thoughts, comments?
>
>--
>Peter K1PO
>Indialantic By-the-Sea, FL.

Do you ever notice the fleeting look of fear on the faces of
people as they suddenly recognize you as you walk down the street, Peter?
73,
Tom Donaly, KA6RUH

4161. Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 04:42:48 UTC
From: antennas@yahoo.com
Message-ID: <e8be44e3.0308252042.5b126f2e@posting.google.com>
Source record: 109805

Can anyone tell me if to model ground accurately where I live, what I should use as the data. IE if poor ground will suffice. I live in Yellowknife, NWT. The soil here, oh wait there really isn't any! That's the problem, there is bedrock of granite everywhere here. For miles out and miles down! What figures could I plug into EZNEC say , to get accurate results?
Thanks
73
Andrew VE8AE

4162. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 04:56:39 UTC
From: richardharrison@webtv.net
Message-ID: <6704-3F4AE887-432@storefull-2313.public.lawson.webtv.net>
Source record: 109807

Keith wrote:
"I conclude from this response that you are unable to detect any flaws in the logic of steps 1 to 8."

They are contradictory. That`s a fatal flaw.

Volts and amps on a transmission line are manifestations of E&H fields guided by the line. These fields are generating the volts and amps seen on the line as the wave travels along its length.

Even a hard short or an open circuit doesn`t annihilate the signal on a line. The short or open only produces a reflection.

At the open or short, amps or volts are forced to zero. That event forces the energy which had resided in the H-field or E-field to temporarily be accomodated in the field which is its partner in transporting energy. This doubles volts right at the open or doubles amps right at the short.. This single field is only temporary because in a very short travel distance, energy is again balanced between the two fields.

Note that the open or short does not stop energy flow. It just turns it around as a reflection. This happens at an actual discontinuity. At an SWR interference point, nothing upsets energy flow at all in a uniform line. SWR nulls are just demonstrations of commingled waves passing through each other without serious consequence. For the nth time, were you to separate the going and coming signals, you would find no variation in average signal power in either direction along the line at any point, including the SWR nulls..

Best regards, Richard Harrison, KB5WZI

4163. Re: Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 05:01:41 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vklqdkllluo5609@corp.supernews.com>
Source record: 109806

The short answer is that there isn't any value you can plug in to get accurate results.

According to Reference Data for Radio Engineers, the conductivity of granite is 1E-9 - 1E-11 Siemens/m. That is, it's a good insulator. I wouldn't trust EZNEC's ground models for values that extreme. Furthermore, any field that enters it will eventually be affected by the first conductive soil it encounters underneath, since the granite won't appreciably attenuate the field. EZNEC doesn't have any way of dealing with stratified grounds. The best you can probably do is use a free space analysis.

Roy Lewallen, W7EL

VE8AE Andrew wrote:
> Can anyone tell me if to model ground accurately where I live, what I
> should use as the data. IE if poor ground will suffice. I live in
> Yellowknife, NWT. The soil here, oh wait there really isn't any!
> That's the problem, there is bedrock of granite everywhere here. For
> miles out and miles down! What figures could I plug into EZNEC say ,
> to get accurate results?
> Thanks
> 73
> Andrew VE8AE

4164. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 05:35:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4af32c_7@corp.newsgroups.com>
Source record: 109808

kd1@sympatico.ca wrote:
> I conclude from this response that you are unable to detect any
> flaws in the logic of steps 1 to 8. Oh well.

You conclude wrong. I have already pointed out the flaws in your logic.
Complete destructive interference (power equal zero) does not affect
the energy flow at all in the interfering waves. The forward wave and
reflected wave each have an energy flow that does not affect the other.
That's the flaw in your logic and this is about the 5th time I have
explained it to you. You are being fooled by NET power when you should
be considering component energies. There exists a forward power flow
vector and a reflected power flow vector as explained by Ramo & Whinnery,
a reference I provided earlier.
--
73, Cecil http://www.qsl.net/w5dxp

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4165. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 05:59:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4af8bf$1_7@corp.newsgroups.com>
Source record: 109809

kd1@sympatico.ca wrote:
> 6) From 2) and 5), the power (rate of energy flowing) at quarter
> wave points will be 0

The NET power will be zero. The forward power flow vector is NOT
zero and the reflected power flow vector is NOT zero. The NET power
of zero is complete destructive interference in action. It happens
all the time to two light beams whose energies are not affected by
the interference.

> 7) From 6), the energy crossing quarter wave points is 0

The NET energy crossing quarter wave points is 0. The two component
energies crossing quarter wave points are not 0. They are the
constant forward power flow vector and the constant reflected
power flow vector as explained in Ramo & Whinnery. Their ratio
is the power reflection coefficient. Equation 3, page 350, _Fields_
and_Waves_in_Communications_Electronics_, Ramo, Whinnery, & Van Duzer.

(Pz-)/(Pz+)=|rho|^2

> All the steps in Assertion A seem correct to me.

Yes, that is your problem. They are not correct for the two
component energies.

> Can you help me find the false step which makes Assertion A false?

Here it is again, for the Nth time. There are two waves flowing in opposite
directions, each possessing its own constant energy, each flowing unopposed
end to end in the transmission line.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4166. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 06:24:17 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <I2D2b.13108$8i2.8667@newsread2.news.atl.earthlink.net>
Source record: 109810

Tom:

[snip]
> Do you ever notice the fleeting look of fear on the faces of
> people as they suddenly recognize you as you walk down the street, Peter?
> 73,
> Tom Donaly, KA6RUH
[snip]

Yes!!! Finally I'm recognized for what I am...

The Darth Vader of USENET.

Thanks,

--
Peter K1PO
Indialantic By-the-Sea, FL

4167. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 06:54:49 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <Kr5IldF5QwS$EAmK@ifwtech.co.uk>
Source record: 109817

W5DXP wrote:
>
>Nope, they're not Reg. For Z0-matched systems (which most ham systems are),
>rho^2 is all you need to know along with the forward and reflected powers
>to completely solve the voltage, current, and phase conditions at the
>impedance discontinuity.

There in one sentence is the whole problem with the "power" approach.
For a complete solution including phase conditions, you have to assume a
Z0-match, and even Cecil acknowledges that is only true for "most ham
systems".

As Reg says, this is because the power approach throws away the phase
information at the start, and if you want it back again, you have to
make assumptions.

So the problem is not that the "power" approach cannot give a complete
solution, but that it cannot do it for all cases. In other words, it
isn't completely general - and that flaw is fatal.

The conventional approach based on voltage (or current) waves doesn't
discard the phase information, but uses it to give a complete solution
for every case. It is completely general, and that's precisely why
engineers use it.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4168. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 07:03:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <nDD2b.13114$8i2.12503@newsread2.news.atl.earthlink.net>
Source record: 109811

Roy:

[snip]
> > b = v - Ri = Zi - Ri = (Z - R)i Volts.
>
> First of all, you're speaking of a circuit with a source impedance R and
> load impedance Z, rather than a terminated transmission line. Forward
> and reflected wave terminology is widely used in S parameter analysis,
> which also uses this model, so I'll be glad to follow along to see if
> and how S parameter terminology differs from the transmission line
> terminology we've been discussing so far. Please correct me where my
> assumptions diverge from yours.
>
> Your "classical definition" of b isn't one familiar to me. v + Ri would
> of course be the source voltage (which I'll call Vs). So v - Ri is Vs -
> 2*Ri. Where does this come from and what does it mean?
[snip]

Yes it should be familiar to you because it is the most common definition
and one you seem to agree with. I presume that you are not used to seeing
the use
of the symbols "a" and "b" for those quantities. The use of "a" and "b" is
widely
used in Scattering Formalism and is less confusing to many than using
subscripts.
In your terminology above the "Vs" symbol is nothing more than the incident
voltage
usually given the symbol "a" in the Scattering Formalism, or the symbol V
with a "+"
sign subscript in many developments. Often you will find authors use a V
with a plus
sign "+" as a subscript to indicate the "a" voltage and a V with a minus
sign "-" subscript
to idicate the "b" voltage. Personally I find the use of math symbols "-"
and "+" or other
subscripts to variables to be confusing, I much prefer the use of "a" and
"b" for forward
or incident and reflected voltages.

Simply put, if a generator with "open circuit" voltage "a" and "internal
impedance" R
is driving a load Z [Z could be a transmission line driving point impedance,
for instance
Z would be the characteristic or surge impedance Zo of a transmission line
if

the generator was driving a semi-infinite line.] then v is the voltage drop
across Z
and I is the current through Z, and so...

a = v + Ri = Zi - Ri = (Z - R)i

is simply the [usual] forward voltage or incident voltage applied by the
generator to the
to the load Z, which may be a lumped element load or if you prefer to talk
about transmission
lines, Z can be just the driving point impedance of a transmsision line,
whatever you wish.

Then its'just a simple application of Ohms Law tosee that b = v - Ri = Zi -
Ri = (Z - R)i is
the [usual] reflected voltage. b is just the difference between the voltage
across Z which is
calculated as Zi and the voltage that would be across Z if Z was actually
equal to R. i.e. the
reflected voltage b is just the voltage that would exist across Z if there
was an "image match"
between Z and R. [If Z is the Zo of a semi-infinite transmsision line you
could call this a Zo match].

Taking the ratio of "b" to "a" just yeilds the [usual] reflection
coefficient as
b/a = (Z - R)i/(Z + R)i = (Z - R)/(Z + R). A well known result. Simple?

[snip]
> From your equation, and given source voltage Vs, i = Vs/(R+Z).
> Therefore, your "classical definition" of reflected voltage b is, in
> terms of Vs, Vs*((Z-R)/(Z+R)).
> >
> > and the incident voltage a would be the Thevinins equivalent voltage
across
> > the sum of Z and R, i.e.
> >
> > a = (Z + R)i
[snip]

Yep you got it all right!

[snip]
> Since i = Vs(Z+R), you're saying that a = the source voltage Vs (from
> your two equations). So what you're calling the "incident voltage" is
> simply the source voltage Vs.
[snip]

Yes, mathematically "a" = "Vs", what else would it be? Nothing mysterious
about
that. The incident voltage is always simply the open circuit voltage of the
source. In
words a is not the source voltage because the source is a Thevinin

equivalent made up
of the ideal voltage generator Vs = a behind the "internal" source impedance
R. A better
way to describe Vs = a in words would be the incident voltage a is the "open
circuit source
voltage".

[snip]
> Let's do a consistency check. The voltage at the load should be a + b =
> Vs + Vs*((Z-R)/(Z+R)) = Vs*2Z/(Z+R). Inspection of the circuit as I
> understand it shows that the voltage at the load should be half this
> value. So, we already diverge. Which is true:
[snip]

No, the voltage at the load is not (a + b) rather it is [the quite obvious
by Ohms Law] v = Zi.

and the sum of the incident and reflected voltage is simply

a + b = (v + Ri) + (v - Ri) = 2v = 2Zi

Now if there is an "image match" and the "unknown" Z is actually equal to R,
i.e. let Z = R
in all of the above, then...

a = Vs

b = 0

a + b = 2Ri

and i = Vs/2R = a/2R.

[snip]
> 1. I've goofed up my algebra (a definite possibility)
[snip]

Only a little :-)

[snip]
> 2. I've misinterpreted your circuit, or
[snip]

No you have it correct!

[snip]
> 3. The voltage at the load is not equal to the sum of the forward and
> reflected voltages a and b, as you use the terms "forward voltage" and
> "reflected voltage". If v isn't equal to a + b, then what is the
> relationship between v, a, and b, and what are the physical meanings of
> the forward and reflected voltages?
[snip]

I showed those relationships above. There is nothing new here... these are
the [most] widely accepted definitions of incident and reflected voltages.

[snip]
> I'd like to continue with the remainder of the analysis, but can't
> proceed until this problem is cleared up.
>
> Roy Lewallen, W7EL
[snip]

OK, let's carry on.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4169. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 07:28:45 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kt2mkv8mue3qpogsokbm5k88havfiuh9na@4ax.com>
Source record: 109812

On Mon, 25 Aug 2003 21:19:24 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>Two waves are flowing with unchanging energies and producing an absolutely
>black ring, i.e. zero irradiance equals zero power.

Hi Cecil,

Only when you violate conservation of energy, i.e. you have not summed
over the complete interval, only that part that satisfies your
argument (which allows anyone to perform similar miracles).

73's
Richard Clark, KB7QHC

4170. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 10:16:30 UTC
From: kd1@sympatico.ca
Message-ID: <3F4B337E.9065F477@sympatico.ca>
Source record: 109813

Richard Harrison wrote:
>
> Keith wrote:
> "I conclude from this response that you are unable to detect any flaws
> in the logic of steps 1 to 8."
>
> They are contradictory. That`s a fatal flaw.

This may be, but there seems to be some reluctance to point out WHICH
step is contradictory.

> Volts and amps on a transmission line are manifestations of E&H fields
> guided by the line. These fields are generating the volts and amps seen
> on the line as the wave travels along its length.
>
> Even a hard short or an open circuit doesn`t annihilate the signal on a
> line. The short or open only produces a reflection.
>
> At the open or short, amps or volts are forced to zero. That event
> forces the energy which had resided in the H-field or E-field to
> temporarily be accomodated in the field which is its partner in
> transporting energy. This doubles volts right at the open or doubles
> amps right at the short.. This single field is only temporary because in
> a very short travel distance, energy is again balanced between the two
> fields.
>
> Note that the open or short does not stop energy flow.

I'll accept that, but no energy flows past the short or open where the
voltage or current is zero which is consistent with p(t) = v(t) * i(t).

Similarly, I suggest that no energy flows past the other points in
the line where the voltage or current is zero, again to be consistent
with p(t) = v(t) * i(t).

> It just turns it around as a reflection.
> This happens at an actual discontinuity. At an
> SWR interference point, nothing upsets energy flow at all in a uniform
> line. SWR nulls are just demonstrations of commingled waves passing
> through each other without serious consequence. For the nth time, were
> you to separate the going and coming signals, you would find no
> variation in average signal power in either direction along the line at
> any point, including the SWR nulls..

I do understand the derivation from this separation of the going and
coming signals. But I am unable to rationalize this explanation with

the very basic and widely accepted p(t) = v(t) * i(t) and the observed zero voltages and currents.

Do think of that voltage or current 0 at the shorted or open end of the line. In your model, this voltage or current 0 produces a reflection while other voltage or current zeroes do not. Is this consistent?

Consider adding another quarter wave section to the end of the line. The voltage or current 0 remains and to the left of the original end of the line nothing changes, but by your model, suddenly there is no longer a reflection at the original end of the line, but it has moved to the new end. But the voltage and current distributions have remained the same. There is no observable difference. Why are you convinced the reflection point had to move?

...Keith

4171. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 10:37:12 UTC
From: kd1@sympatico.ca
Message-ID: <3F4B3858.CDEEBDB0@sympatico.ca>
Source record: 109815

W5DXP wrote:
> kd1@sympatico.ca wrote:
> > I conclude from this response that you are unable to detect any
> > flaws in the logic of steps 1 to 8. Oh well.
>
> You conclude wrong. I have already pointed out the flaws in your logic.

Actually, not. You continue to resist pointing out which step is wrong.

Is it step 1)?
"1) Consider a shorted ideal transmission line excited by a single
frequency sinusoidal signal which has reached steady state"

Hard for this step to be wrong since it just sets up the
conditions for the experiment.

Is it step 2)?
"2) At quarter wave points along this line, voltages and currents
which are always 0 can be observed -- the standing wave"

This seems to be generally accepted.

Is it step 3)?
"3) Power is the rate at which energy flows"

This is the definition of power.

Is it step 4)?
"4) The power (rate of energy flowing) at time t can be computed
using p(t) = v(t) * i(t)"

This is the well know expression of power in terms of volts and
amps.

Is it step 5)?
5) Substituting a voltage or current which is always 0 into the
expression above will result in a power which is also always 0

Just normal subsitution of actual values into an equation.

Is it step 6)?
"6) From 2) and 5), the power (rate of energy flowing) at quarter
wave points will be 0"

The result obtained after substitution.

Is it step 7)?
"7) From 6), the energy crossing quarter wave points is 0"

If steps 1) to 6) are not in error, then step 7) follows.

Is it step 8)?
"8) From 7), energy can not be flowing down and up the line
crossing quarter wave points"

Simply follows from 7).

You have not yet pointed to any error in the derivation.

If your extensive study of optics leads you to believe that
the conclusion is incorrect, and, if the conclusion is incorrect,
there must be an error in the derivation. What is it?

No amount of repeating "why optics disagrees with the conclusion"
will locate the error in the derivation.

But the derivation is quite simple. If after some reasonable
study you are unable to locate an error in it, it would seem
reasonable to re-assess whether the conclusion is, in fact,
in error.

Since you have not yet pointed to an error in the derivation
(which would be the obvious way to close the question), I
conclude that you have been unable to locate such an error.
Seems reasonable, does it not?

The alternative, that you have located an error but refuse
to disclose it, seems much less likely.

...Keith

4172. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 10:46:18 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkmejkfqqmk586@corp.supernews.com>
Source record: 109814

Thanks, it's becoming clear why we're getting different results.

When analyzing a transmission line, the forward and reflected voltages have a meaning that comes from the solutions to the wave equations. One of the fundamental properties of these waves is that their sum is the total voltage in the transmission line. (Likewise for current.) We assume that these are the only voltage waves on the line, so their sum is necessarily the total voltage. We sum these waves, for example, and look at the resulting maxima and minima to get the standing wave ratio. So it was a basic tenet of my analysis that the sum of the forward and reverse voltage waves at any point on the line (including the end) equals the voltage at that point. (Again, likewise for current, with attention paid to the defined direction of positive flow.) This was explicitly given as equation 5 (for voltage) and 6 (for current) of my analysis.

Another property of the waves is that the ratio of V to I of either of the waves equals the Z0 of the cable (equations 1 and 2).

Again making sure I see your model circuit correctly, it's a voltage source of voltage a or V+, connected to R in series with Z. If that's correct, then i = a / (Z + R), so your calculated value of b in your analysis below, (Z - R)i, then equals a * (Z - R) / (Z + R). The sum of a and b is a * (1 + (Z - R) / (Z + R)) = 2 * Z * a / (Z + R).

While in or at the ends of a transmission line the voltage always equals the sum of the forward and reflected voltages, the sum of a and b, which you call forward and reflected voltages, don't sum to the voltage at the load. The voltage at the load is, from inspection of the circuit, a * Z / (Z + R); the sum of a and b is twice that value.

Of course, if we define "forward voltage" and "reflected voltage" to be something other than the waves we're familiar with on a transmission line, while maintaining a definition of voltage reflection coefficient as being the ratio of forward to reverse voltage, we can come up with any number of formulas for reflection coefficient.

And this seems to be done. I have only two texts which deal with S parameters in any depth. One, _Microwave Transistor Amplifiers: Analysis and Design_ By Guillermo Gonzalez, consistently uses forward and reverse voltage to mean exactly what they do in transmission line analysis. Consequently, he consistently ends up with the same equation for voltage reflection coefficient I've been using, and states several places that the reflection is zero when the line or port is terminated in its characteristic or source impedance (not conjugate). And this all without an assumption that Z0 or source Z is purely real. The other book,

however, _Microwave Circuit Design Using Linear and Nonlinear Techniques_ by Vendelin, Pavio, and Rohde, uses a different definition of V+, V- than either of us does, and different a and b than you do. To them, a = V+ * sqrt(Re(Zg)) / Zg* where Zg is the source impedance, and b = V- * sqrt(Re(Zg))/Zg. They end up with three different reflection coefficients, Gammav, Gammai, and one they just give as Gamma. Gammav is V-/V+, Gammai is I-/I+, and plain old Gamma, which they say is equal to b/a, turns out to be equal to Gammai. Incidentally, their equation for Gammav, the voltage reflection coefficient, is:

Gammav = [Zg(Z - Zg*)]/[Zg*(Z + Zg)]

Which is different from yours, Slick's, and mine.

The whole trick seems to be in defining what forward and reflected or reverse voltage mean. In transmission line analysis, the meaning is, I hope, pretty universal and agreed upon. If not, a whole bunch of equations, statements, assumptions, and definitions have to go out the window, along with the idea that those are the only voltages on the line. If you use those widely accepted meanings, you unavoidably end up with the common equation I've been giving for voltage reflection coefficient. (At least nobody reputable so far seems to want to define voltage reflection coefficient as anything but the ratio of reflected to forward voltage, thankfully.) On the other hand, you and the authors of at least one book put a different meaning of forward and reflected voltage (and you two use different meanings), and therefore come up with correspondingly different formulas for reflection coefficient.

At this point I have to concede that in some S parameter analysis at least, various different meanings are given to "forward" or "incident", and "reverse" or "reflected" voltage than are used in transmission line analysis. And the two books I have disagree with each other, and both disagree with you, as to what they do mean. With that kind of non-standardization, it's useless to argue which is "more right" than another. It just points out the importance of carefully defining what you mean by forward and reverse voltages before you begin your analysis -- and being very careful about what conclusions you draw from the "reflections" or lack of them. When the definitions are different from those used with transmission lines, the meaning and consequences of reflections and impedance match are correspondingly different.

Your analysis is self consistent, given your definitions of forward and reverse voltage. So are the analyses in the two books I have dealing with S parameters. So all three of you reach different but valid conclusions. Unless someone comes up with a convincing argument that one definition of forward and reverse voltages is better or more meaningful than another in that context, I have to agree that any of these three, or any of an infinite number of other possibilities, is equally valid for S parameter analysis.

But not for transmission lines. There, forward and reverse voltages do have real meaning and a rigorous derivation. So anyone redefining them

in that context is certainly deviating from very well understood usage.

Consequently, I don't see how it would be productive, or add insight to the problem of voltages, currents, and reflections in a transmission line, to bring in S parameter terminology which obviously differs and in an inconsistent way from author to author. I'll be glad to continue discussing transmission lines, which is what this discussion originally involved, with the first step being for someone disagreeing with the formula for voltage reflection coefficient to point out which of the equations or assumptions preceding it are incorrect. Your analysis disagrees with equations 5 and 6 and, I believe, 1 and 2, by virtue of your different definition of forward and reverse voltage. I don't believe this can be justified within and at the end of a transmission line -- if the forward and reverse voltages on the line don't add up to the total, then you have to come up with at least one more voltage wave you assume is traveling along the line (which summed with the others does equal the total), and justify its existence.

Roy Lewallen, W7EL

Peter O. Brackett wrote:
> Roy:
>
> [snip]
>
>>>b = v - Ri = Zi - Ri = (Z - R)i Volts.
>>
>>First of all, you're speaking of a circuit with a source impedance R and
>>load impedance Z, rather than a terminated transmission line. Forward
>>and reflected wave terminology is widely used in S parameter analysis,
>>which also uses this model, so I'll be glad to follow along to see if
>>and how S parameter terminology differs from the transmission line
>>terminology we've been discussing so far. Please correct me where my
>>assumptions diverge from yours.
>>
>>Your "classical definition" of b isn't one familiar to me. v + Ri would
>>of course be the source voltage (which I'll call Vs). So v - Ri is Vs -
>>2*Ri. Where does this come from and what does it mean?
>
> [snip]
>
> Yes it should be familiar to you because it is the most common definition
> and one you seem to agree with. I presume that you are not used to seeing
> the use
> of the symbols "a" and "b" for those quantities. The use of "a" and "b" is
> widely
> used in Scattering Formalism and is less confusing to many than using
> subscripts.
> In your terminology above the "Vs" symbol is nothing more than the incident
> voltage
> usually given the symbol "a" in the Scattering Formalism, or the symbol V

> with a "+"
> sign subscript in many developments. Often you will find authors use a V
> with a plus
> sign "+" as a subscript to indicate the "a" voltage and a V with a minus
> sign "-" subscript
> to idicate the "b" voltage. Personally I find the use of math symbols "-"
> and "+" or other
> subscripts to variables to be confusing, I much prefer the use of "a" and
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> Simply put, if a generator with "open circuit" voltage "a" and "internal
> impedance" R
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> about transmission
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> the [usual] reflected voltage. b is just the difference between the voltage
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> calculated as Zi and the voltage that would be across Z if Z was actually
> equal to R. i.e. the
> reflected voltage b is just the voltage that would exist across Z if there
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> between Z and R. [If Z is the Zo of a semi-infinite transmsision line you
> could call this a Zo match].
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> coefficient as
> b/a = (Z - R)i/(Z + R)i = (Z - R)/(Z + R). A well known result. Simple?
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> [snip]
>
>> From your equation, and given source voltage Vs, i = Vs/(R+Z).
>>Therefore, your "classical definition" of reflected voltage b is, in
>>terms of Vs, Vs*((Z-R)/(Z+R)).

>>
>>>and the incident voltage a would be the Thevinins equivalent voltage
>
> across
>
>>>the sum of Z and R, i.e.
>>>
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> [snip]
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> Yep you got it all right!
>
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> Yes, mathematically "a" = "Vs", what else would it be? Nothing mysterious
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> that. The incident voltage is always simply the open circuit voltage of the
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> words a is not the source voltage because the source is a Thevinin
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> of the ideal voltage generator Vs = a behind the "internal" source impedance
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> way to describe Vs = a in words would be the incident voltage a is the "open
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> i.e. let Z = R
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>
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> b = 0
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> [snip]
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>>1. I've goofed up my algebra (a definite possibility)
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> [snip]
>
> Only a little :-)
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> [snip]
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> [snip]
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> No you have it correct!
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>>reflected voltages a and b, as you use the terms "forward voltage" and
>>"reflected voltage". If v isn't equal to a + b, then what is the
>>relationship between v, a, and b, and what are the physical meanings of
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> the [most] widely accepted definitions of incident and reflected voltages.
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>>I'd like to continue with the remainder of the analysis, but can't
>>proceed until this problem is cleared up.
>>
>>Roy Lewallen, W7EL
>
> [snip]
>
> OK, let's carry on.

>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.
>
>
>
>

4173. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 10:48:18 UTC
From: kd1@sympatico.ca
Message-ID: <3F4B3AF2.8894D06@sympatico.ca>
Source record: 109816

Richard Harrison wrote:
>
> Keith wrote:
> "2) At quarter wave points along this line, voltages and currents which
> are always 0 can be observed -- the standing wave."
>
> This is proof positive in Keith`s own words that the first 0-volt point
> encountered by either forward or reflected wave is completely
> ineffective in halting or abating progress of the waves.
>
> Keith also wrote:
> "6) From 2) and 5), the power (rate of energy flow) at quarter wave
> points will be 0."
>
> The contradiction is obvious. Were energy flow or power reduced by SWR
> zeros, you would not have multiple zeros along the line.

Your analysis overlooks that we are discussing an ideal line that has reached steady state. Before the line reaches steady state, energy does cross the quarter wave points, but, of course, while this is happening the voltages and currents at the quarter wave points are not yet zero.

As an aside, were we to discuss a line that was not open or shorted but rather terminated in other than its characteristic impedance, we would still find voltage and current minimas. At these minima, rather than the energy flow being 0 as it is for a shorted or open line, the energy flow (power) is exactly the energy being delivered down the line.

Something similar occurs while an opern or shorted line is approaching steady state.

...Keith

4174. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 11:42:34 UTC
From: richardharrison@webtv.net
Message-ID: <7746-3F4B47AA-474@storefull-2318.public.lawson.webtv.net>
Source record: 109619

Keith wrote:
"Why are you convinced the reflection point had to move?"

This is the case when a line is extended to greater length, and the short or open also is moved to the new end of the line.

Ever had a short or open somewhere in the middle of a line? I have, and can testify that the signal doesn`t get past a real hard short or open in the line. As energy can`t be destroyed it had to be reflected by the hard short or open.

In the case where the line short is moved to a point nearer the source, or where the short or open is moved to a place more distant on the line from the source, we know the energy travels all the way to the actual short or open where it is reflected because nulls occur at several points along a long transmission line. If the energy were turned around before it reached the end of the line, nulls more distant from the source than the turnaround point would not exist. There would be no energy at the actual short or open at the end of the line were the energy turned around before it reached the end of the line.

Best regards, Richard Harrison, KB5WZI

4175. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 11:53:43 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <bTH2b.10291$jY2.6721@newsread1.news.atl.earthlink.net>
Source record: 109818

Roy:

[snip]
> Consequently, I don't see how it would be productive, or add insight to
> the problem of voltages, currents, and reflections in a transmission
> line, to bring in S parameter terminology which obviously differs and in
> an inconsistent way from author to author. I'll be glad to continue
> discussing transmission lines, which is what this discussion originally
> involved, with the first step being for someone disagreeing with the
> formula for voltage reflection coefficient to point out which of the
> equations or assumptions preceding it are incorrect. Your analysis
> disagrees with equations 5 and 6 and, I believe, 1 and 2, by virtue of
> your different definition of forward and reverse voltage. I don't
> believe this can be justified within and at the end of a transmission
> line -- if the forward and reverse voltages on the line don't add up to
> the total, then you have to come up with at least one more voltage wave
> you assume is traveling along the line (which summed with the others
> does equal the total), and justify its existence.
>
> Roy Lewallen, W7EL
[snip]

Thanks for following along with my development. I like to develop stuff from first principles, instead of quoting often questionable sources.

Roy apart from a few typos and a small factor of 1/2 it seems that we agree on everything!

Sorry if I messed up a little with typos, and... there is that potentially confusing but unimportant factor of 1/2 that appears in my definitions of the incident "waves" a and b.

Your claim as to my definitions being quite different from the "mainstream" of transmission line theory was a bit hasty, because in fact with a closer look I believe that you will see that my definitions and yours [Which are hhe mainstream transmission line definitions and equations] only differ by a simple numerical factor of 2. I don't use that factor of 1/2 because it drops out whenever you take a ratio of waves anyway.

Perhaps I should have defined my a to be a = 1/2(v + Ri) and b = 1/2(v - Ri) instead of a = v + Ri and b = v - Ri as I have done. Including that factor of 1/2 in my a and b makes them identical to your incident and reflected voltages.

This factor of 1/2 is a very minor "scaling" difference in the "waves" and there is absolutely no difference in reflection coefficient, or indeed in

Scattering Matrix definitions since the factor of 1/2 in each of "my" wave definitions simply cancels out in rho = b/a, when you divide b by a to get rho or indeed in calculating with wave vectors and Scattering Matrixs of any order. My definition of the scaling factor [1/2] for the wave variables works as well as any other as long as consistency is maintained. Like you I have found that different Scattering Theory books often use a variety of different scaling factors in defining the waves, for instance some use a factor of 1/2*sqrt(R) = 1/2*sqrt(Zo) in the definition of the waves, etc... It simply doesn't matter as long as you are consistent.

In any case, the scaling value in the definition of the "waves" was not my point.

The point I was trying to make was to address the subtle point initiated by Slick, i.e. the one about the definition of rho which is the ratio of reflected to incident waves, where the scaling factors drop out, and whether the CONJUGATE of the reference impedance should be used in the definition for rho or not.

My point was that the conventional definition of rho = (Z - R)/(Z + R) without the CONJUGATE is in fact the "natural" definition for wave motion whether on transmission lines or in impedance matching to a generator. And...

That with the conventional definition of rho in the case of a general Zo the reflected voltage will *NOT* be zero at a conjugate match. At a conjugate match, the classical rho and b will only be null in the special case of the reference impedance Zo being a pure real resistance.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4176. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 12:18:57 UTC
From: richardharrison@webtv.net
Message-ID: <10512-3F4B5031-476@storefull-2317.public.lawson.webtv.net>
Source record: 109620

Keith wrote:
"Is it step 7)?"

"7) From 6), the energy crossing quarter wave points is zero"

False, as are several other of Keith`s speculations.

Standing waves throughout a long transmission line with a hard short or open-circuit at its end are proof enough that SWR nulls other than the one at the actual discontinuity don`t bring the energy crossing 1/4-wave points to zero. SWR nulls other than the one at the actual open or short have no effect on traveling waves, absent an additional actual discontinuity. SWR can`t exist without energy flow in both directions. Energy flow is continuous. It doesn`t start and stop at SWR nulls. This continuity is proved by measurements at the nulls, taken in one direction at a time.

No speculation or even math is needed to observe this behavior on an actual line. It is usless to try to conform the observable to some theory. It is far more productive to conform theory to the observable.

Best regards, Richard Harrison, KB5WZI

4177. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 12:49:27 UTC
From: richardharrison@webtv.net
Message-ID: <10512-3F4B5757-482@storefull-2317.public.lawson.webtv.net>
Source record: 109625

Keith wrote:
"At these minima, rather than the energy flow being 0 as it is for an open or shorted line, the energy flow (power) is exactly the energy being delivered down the line."

The power is not zero at an SWR zero, provided that the line has power flow. The power flow at the specified null is equal in forward and reflected wave directions as shown by the complete zero.

Power delivered by the source and to the load is the forward power minus the reflected power. In the case of a complete reflection, the difference between forward and reflected power is zero, so the load is rejecting all the forward power, which is turned around and becomes the reflected power.

In a lossless line, forward and reflected powers flow unabated from end to end of the line and are thus have their same amplitudes wherever they are measured in the line, including SWR null points.

Best regards, Richard Harrison, KB5WZI

4178. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 12:59:13 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkmmc1r4lvig25@corp.supernews.com>
Source record: 109621

Roy Lewallen wrote:
>
>
> I have only two texts which deal with S
> parameters in any depth. One, _Microwave Transistor Amplifiers: Analysis
> and Design_ By Guillermo Gonzalez, consistently uses forward and reverse
> voltage to mean exactly what they do in transmission line analysis.
> Consequently, he consistently ends up with the same equation for voltage
> reflection coefficient I've been using, and states several places that
> the reflection is zero when the line or port is terminated in its
> characteristic or source impedance (not conjugate). And this all without
> an assumption that Z0 or source Z is purely real. The other book,
> however, _Microwave Circuit Design Using Linear and Nonlinear
> Techniques_ by Vendelin, Pavio, and Rohde, uses a different definition
> of V+, V- than either of us does, and different a and b than you do. To
> them, a = V+ * sqrt(Re(Zg)) / Zg* where Zg is the source impedance, and
> b = V- * sqrt(Re(Zg))/Zg. They end up with three different reflection
> coefficients, Gammav, Gammai, and one they just give as Gamma. Gammav is
> V-/V+, Gammai is I-/I+, and plain old Gamma, which they say is equal to
> b/a, turns out to be equal to Gammai. Incidentally, their equation for
> Gammav, the voltage reflection coefficient, is:
>
> Gammav = [Zg(Z - Zg*)]/[Zg*(Z + Zg)]

This formula is Gonzalez's definition of voltage
reflection coefficient, based on *power wave*
theory (not *transmission line* theory) on page 48
of his *second edition*. We need to keep in mind
that a power wave is a different kind of wave than
the ones that we are used to thinking about in
transmission lines (Gonzalez's words).

If you don't have his second edition, I suggest
get on-line and buy it. It has a lot of stuff not
found in the first edition. The discussion of
power waves is excellent and readable, with some
mental suffering.

The power wave concept is quite valid. We need to
come to grips with this and learn to accept it. It
is the actual basis for microwave simulation
programs. In these programs transmission lines are
treated as "circuit elements" with certain
properties and calculated scattering parameters.
But we must wear a different "hat" when dealing

with it. The idea of "power wave" requires some
meditation.

I discussed some of this in a previous post.

Bill W0IYH

4179. Re: Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 12:59:32 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030826085932.29694.00000389@mb-m24.aol.com>
Source record: 109622

Another property of rock, granite and like is that they "eat" RF. Experienced that when driving around and operating from areas in OK3 and VE3 (Kingston). Just like ocean gives you 10 -15 dB plus, seems that rocky areas take away about as much. Like driving into an anechoic chamber vs. into amplifier at the ocean beach.
Looks like perhaps absence of good reflecting?
As far as modeling, use it to compare various designs in similar conditions and perhaps try them in real life, see how they reflect the modeling.
I would use radials or ground screens under antennas, perhaps good verticals will perform better than horizontals?

Yuri, oK3BU, VE3BMV, VE1BY

4180. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 13:15:28 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkmna26bpgh619@corp.supernews.com>
Source record: 109624

William E. Sabin wrote:

> Roy Lewallen wrote:
>
>>
>>
>> I have only two texts which deal with S parameters in any depth. One,
>> _Microwave Transistor Amplifiers: Analysis and Design_ By Guillermo
>> Gonzalez, consistently uses forward and reverse voltage to mean
>> exactly what they do in transmission line analysis. Consequently, he
>> consistently ends up with the same equation for voltage reflection
>> coefficient I've been using, and states several places that the
>> reflection is zero when the line or port is terminated in its
>> characteristic or source impedance (not conjugate). And this all
>> without an assumption that Z0 or source Z is purely real. The other
>> book, however, _Microwave Circuit Design Using Linear and Nonlinear
>> Techniques_ by Vendelin, Pavio, and Rohde, uses a different definition
>> of V+, V- than either of us does, and different a and b than you do.
>> To them, a = V+ * sqrt(Re(Zg)) / Zg* where Zg is the source impedance,
>> and b = V- * sqrt(Re(Zg))/Zg. They end up with three different
>> reflection coefficients, Gammav, Gammai, and one they just give as
>> Gamma. Gammav is V-/V+, Gammai is I-/I+, and plain old Gamma, which
>> they say is equal to b/a, turns out to be equal to Gammai.
>> Incidentally, their equation for Gammav, the voltage reflection
>> coefficient, is:
>>
>> Gammav = [Zg(Z - Zg*)]/[Zg*(Z + Zg)]
>
>
> This formula is Gonzalez's definition of voltage reflection coefficient,
> based on *power wave* theory (not *transmission line* theory) on page 48
> of his *second edition*. We need to keep in mind that a power wave is a
> different kind of wave than the ones that we are used to thinking about
> in transmission lines (Gonzalez's words).
>
> If you don't have his second edition, I suggest get on-line and buy it.
> It has a lot of stuff not found in the first edition. The discussion of
> power waves is excellent and readable, with some mental suffering.
>
> The power wave concept is quite valid. We need to come to grips with
> this and learn to accept it. It is the actual basis for microwave
> simulation programs. In these programs transmission lines are treated as
> "circuit elements" with certain properties and calculated scattering
> parameters.

Mason's Rule is then applied to the collection of
circuit elements to get the system response.

But we must wear a different "hat" when dealing
with it. The
> idea of "power wave" requires some meditation.
>
> I discussed some of this in a previous post.
>
> Bill W0IYH
>

Bill W0IYH

4181. Re: Re-Normalizing the Smith Chart (Changing the SWR into the same...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 13:19:04 UTC
From: richardharrison@webtv.net
Message-ID: <3010-3F4B5E48-12@storefull-2313.public.lawson.webtv.net>
Source record: 109626

Reg wrote:
"How do you know that?"

It squares with my observations and has been reviewed by countless
others and usually has survived various editions not being disproved.

Best regards, Richard Harrison, KB5WZI

4182. recommendations on non-crank-up self-supporting towers

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 13:19:48 UTC
From: "Carl R. Stevenson" <wk3cqth@wk3c.com>
Message-ID: <U7J2b.2792$EC4.53108@nnrp1.ptd.net>
Source record: 109623

I'm looking for recommendations and rough costing info (from
experienced owners of the make/model they tout) on
non-crank-up (fixed) self-supporting (un-guyed) towers .

(I would *consider* buying an excellent condition used tower
within 100 miles or so radius of Allentown, PA, but I'm thinking
primarily about buying a new tower. I have no ht. restrictions
where I live and want to move on this before winter sets in, so
I need to make a decision and act ASAP.)

I'm looking at the range of 55'-75' ish, depending on several
factors:

1) cost vs. height and wind loading
(looking to put a "large" (6-9 element?) 6m beam just above the
top of the tower, with a 2m/70cm/? satellite array above that, and
a PD-220 "SuperStationmaster" side mounted with the tip near the
top ... and almost certainly some other small VHF/UHF antennas
side-mounted at various locations ... but the latter will not contribute
significantly to wind loading as they will be very modest)

2) code here requires 90 mph wind survival rating

3) I have space for a foundation base up to the 5'x5' range
by, say 6' deep. Actually, I have 12 acres, but where this tower
will go, next to the house between some windows, I want to
limit the size to 5'x5' if at all possible (it's rocky here and digging
that hole will be a SOB ... I'll almost certainly look to have it dug
by someone with a machine ...)

4) a HD rotor must fit inside the top section, with a top plate
for thrust bearing available to handle vertical loads ...

5) Within cost constraints, there is no such thing as "too heavy-duty."

Any help, please?

73,
Carl - wk3c

4183. Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 14:00:40 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <rQCdnfXCtI-Y9daiXTWJgA@comcast.com>
Source record: 109627

I recall reading about this many years ago but can't find it in any of the books I have now.

How do I couple the meter to the antenna?

The project is a 3-element 2 meter yagi and I'm trying to set the length of the driven element. I can't find a dip within the band using the rig and an swr bridge.

Tom, N3IJ

4184. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 14:08:39 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0308260608.1e1b6ac@posting.google.com>
Source record: 109628

Hi all,
the electrical codes differ in different countries. Consult the
current one in your country.

> One is that the Radio Shack tester can detect certain forms of
> mis-wiring, but there's at least one which it cannot detect. This is
> one in which you have a three-wire outlet, hooked up to a two-wire
> power feed (one which doesn't actually have a ground), and the
> installer simply wired the "neutral" and "ground" screws together at
> the outlet.
This setup was legal and widely used in Czechoslovakia for many years.
Now it should not be used in new or reconstructed instalations, but it
is still in use in thousands of houses and flats. It doesn't seem
hazardous provided that the network is fused properly.

> ...
> The other reason I'd discourage wiring the power-outlet ground to your
> hot-water-heater pipe, is that the National Electric Code doesn't
> permit this. If a short circuit occurs somewhere on this circuit, it
> would cause your water pipes to carry some of the current back to the
> house ground, and this could result in a shock hazard for anyone in
> contact with the pipes (e.g. somebody in a shower or tub).
The Czech code requires to interconnect all tubing and conductive
items in a bathroom and connect them to the protective wire
(protective AND NEUTRAL in older installations, see higer)...

BR from Ivan

4185. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 14:08:43 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b6b64$1_2@corp.newsgroups.com>
Source record: 109629

Ian White, G3SEK wrote:
> There in one sentence is the whole problem with the "power" approach.
> For a complete solution including phase conditions, you have to assume a
> Z0-match, and even Cecil acknowledges that is only true for "most ham
> systems".

But Ian, what we have been arguing about for two years is what happens to the energy around a *Z0-match point*. Now you admit that, for a Z0-matched system (which most ham systems are) the power approach yields a "complete solution including phase conditions". We are making progress.

> As Reg says, this is because the power approach throws away the phase
> information at the start, and if you want it back again, you have to
> make assumptions.

For an energy analysis, you don't need the phase information. Energy, like SWR, is the same for 50+j50 and 50-j50.

> So the problem is not that the "power" approach cannot give a complete
> solution, but that it cannot do it for all cases. In other words, it
> isn't completely general - and that flaw is fatal.

You don't understand the purpose of a "power" approach. It is not to solve for the phases. It is to analyze the energy flow. For that purpose, like SWR, it is not necessary to know the sign of the reactance. I have specifically said that the power approach does not attempt to replace conventional approaches. It augments conventional approaches to determine the details of the energy flow, something the conventional approach sadly lacks.
--
73, Cecil http://www.qsl.net/w5dxp

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4186. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 14:11:27 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <tladnUklSrXf9taiXTWJhg@ctc.net>
Source record: 109630

> I recall reading about this many years ago but can't find it in any of the
> books I have now.
>
> How do I couple the meter to the antenna?
>
> The project is a 3-element 2 meter yagi and I'm trying to set the length
of
> the driven element. I can't find a dip within the band using the rig and
an
> swr bridge.
>
> Tom, N3IJ
>
The length of the driving element is not critical and may not resonate by
itsself depending on the matching device used.

4187. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 14:17:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b6d78$1_3@corp.newsgroups.com>
Source record: 109631

Richard Clark wrote:
> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>Two waves are flowing with unchanging energies and producing an absolutely
>>black ring, i.e. zero irradiance equals zero power.
>
> Only when you violate conservation of energy, ...

No violation at all, Richard. The power (irradiance) that is lost
in the black rings is gained in the bright rings as explained in
Optics, by Hecht where he says constructive interference is
always equal to destructive interference.
--
73, Cecil http://www.qsl.net/w5dxp

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4188. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 14:24:17 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b6f0a$1_3@corp.newsgroups.com>
Source record: 109632

kd1@sympatico.ca wrote:

> Richard Harrison wrote:
>>They are contradictory. That`s a fatal flaw.
>
> This may be, but there seems to be some reluctance to point out WHICH
> step is contradictory.

The reluctance seems to be your unwillingness to read the replies
which point out exactly that.

> I'll accept that, but no energy flows past the short or open where the
> voltage or current is zero which is consistent with p(t) = v(t) * i(t).

No NET energy flows past such a point. Plenty of component energy flows
past the point in both directions as explained in Ramo, Whinnery, & Van
Duzer.

> I do understand the derivation from this separation of the going and
> coming signals. But I am unable to rationalize this explanation with
> the very basic and widely accepted p(t) = v(t) * i(t) and the observed
> zero voltages and currents.

You are talking about NET energy and NET power. Drop down one level to
component energy and power and all will become clear - especially if
you take a look at light wave interference patterns.

> Do think of that voltage or current 0 at the shorted or open end of the
> line. In your model, this voltage or current 0 produces a reflection
> while other voltage or current zeroes do not. Is this consistent?

Yes, perfectly consistent. The short or open end of the line is a physical
impedance discontinuity. The other voltage and current zeros are NOT
physical impedance discontinuities. They are a result, not a cause of
anything. You are simply confusing cause and effect.

> Consider adding another quarter wave section to the end of the line.
> The voltage or current 0 remains and to the left of the original
> end of the line nothing changes, but by your model, suddenly there
> is no longer a reflection at the original end of the line, but it
> has moved to the new end. But the voltage and current distributions
> have remained the same. There is no observable difference.

Are you telling us that you cannot locate the physical short or open
at the end of the line and don't observe any difference between a physical
short or open and a piece of continuous transmission line? All you have
to do is open your eyes.

--
73, Cecil http://www.qsl.net/w5dxp
"One thing I have learned in a long life: that all our science, measured against reality, is primitive and childlike ..." Albert Einstein

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4189. What is the best method of mounting a pvc-tube fitted Slim Jim?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 14:59:42 UTC
From: "L. Overdulve" <luco.removethisfirst@chello.nl>
Message-ID: <yBK2b.95735$JX1.18422425@amsnews02.chello.com>
Source record: 109633

Hi everyone!

At last (after some years) I will build a weather protected Slim Jim, fitted into a pvc tube.
I have found the right method of calculating the dimensions and I expect no problems so far.
But...after all is done, the antenna will have to be mounted to the mast (metal). What is the best way of mounting such an antenna? I have searched the web, but I could not find anything.

At this site (http://www.trival-antennas-masts.com/trival-com/Frames.htm) I found this mounting frame, but because it is made of a conducting material perhaps it is not a good idea...
May be the pvc tube can be mouted directly to the mast using two of three giant cable ties, but perhaps this will put the antenna too close to the conducting mast...

Thanks for thinking about this and thanks in advance!

Luc

4190. Racal 1649-100

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:24:33 UTC
From: Rosta <alessandrorostellato@fimm.com>
Message-ID: <bifu3j$qv2$1@newsreader.mailgate.org>
Source record: 109634

73s to everyone!
I'm an SWL from Italy.
At last Pordenone's exhibition I've bought the "scanner antenna"
indicated as subject of this thread for about 15 euro.
The antenna was sell without technical information and manual.
The dealer indicated that it cover from 25 to 1300 Mhz, but nothing
else.
Does anyone have other information about it?
Thanks for your attention

Best 73s de I4575/VE

4191. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:28:26 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b7e14_7@corp.newsgroups.com>
Source record: 109636

kd1@sympatico.ca wrote:
> W5DXP wrote:
> Actually, not. You continue to resist pointing out which step is wrong.

You obviously have not read all of my replies.

> Is it step 2)?
> "2) At quarter wave points along this line, voltages and currents
> which are always 0 can be observed -- the standing wave"
>
> This seems to be generally accepted.

This is where your confusion starts. There are points where the
NET voltage and NET current are zero. Those are merely the points
where the forward Poynting vector and reflected Poynting vector
are out of phase.

> Is it step 3)?
> "3) Power is the rate at which energy flows"
>
> This is the definition of power.

So please apply it to the forward Poynting vector and the reflected
Poynting vector as described in Ramo & Whinnery.

> Is it step 4)?
> "4) The power (rate of energy flowing) at time t can be computed
> using p(t) = v(t) * i(t)"
>
> This is the well know expression of power in terms of volts and
> amps.

This is NET power. Your sin is not a sin of commission. It is a
sin of omission.

> Is it step 5)?
> 5) Substituting a voltage or current which is always 0 into the
> expression above will result in a power which is also always 0
>
> Just normal subsitution of actual values into an equation.

Again, you are dealing only with NET power when you need to be dealing
with component energies.

> Is it step 6)?
> "6) From 2) and 5), the power (rate of energy flowing) at quarter
> wave points will be 0"

>
> The result obtained after substitution.

Again, your assertions apply ONLY to NET power which is not what
is being discussed.

> Is it step 7)?
> "7) From 6), the energy crossing quarter wave points is 0"
>
> If steps 1) to 6) are not in error, then step 7) follows.

The NET energy is zero. The component energies are not zero.

> Is it step 8)?
> "8) From 7), energy can not be flowing down and up the line
> crossing quarter wave points"
>
> Simply follows from 7).

And completely false for component energies.

> You have not yet pointed to any error in the derivation.

Yes, I have, numerous times. Let me give you an analogy. To prove
my point I say: "My pickup is white. Please prove otherwise." My
statement is absolutely true and absolutely irrelevant. So are
yours.

> If your extensive study of optics leads you to believe that
> the conclusion is incorrect, and, if the conclusion is incorrect,
> there must be an error in the derivation. What is it?

Your error is one of omission. Your assertions are simply not
relevant to the discussion.

> But the derivation is quite simple.

Yes, too simple and completely irrelevant.

> Since you have not yet pointed to an error in the derivation
> (which would be the obvious way to close the question), I
> conclude that you have been unable to locate such an error.
> Seems reasonable, does it not?

Since you have not proven that my pickup is not white, you lose
the argument. See, I can do the same thing you are attempting.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4192. Added a few turns.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:28:53 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <o6idnRBhS6YI4daiU-KYvA@comcast.com>
Source record: 109635

I was running my dipole with a 6 turn, 2-5/8" dia rg8x coax choke
at the feed point. I got the following "dips" on my SWR meters:

2.330 mhz, 1:1
8.000 mhz 1.8:1
23.615 mhz 1.2:1

A message I got specified that at 6 turns (2.342 uH), I might want
to consider adding a few turns. I added 3, for a new inductance of
4.798 uH. Now I get the following "dips" in my SWR meters:

2.330 mhz, 1:1
8.040 mhz, 1.8:1
13.630 mhz, 1:1 <<<new!
23.615 mhz, 1.2:1

I didn't add any coax to make the turns - I simply used the slack
in the line I had to wind the turns. I can't wind any more without
adding coax at this point..... I have 8-1/2' of rg8x between the
coil and my Z11 autotuner.

Anyone know what's going on here? FYI the antenna is a 153'2"
dipole wrapped closely around a brick building. The feedpoint
is on the third floor window, the ends are 1) chest height and
2) 10' high. Everything is very well grounded (covered here
before)......

72's de Ken KG0WX

4193. FYI: Many Hy-Gain Manuals NOW On-Line

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:34:58 UTC
From: Signal In The Noise <SITN@opinion.com>
Message-ID: <C6L2b.19695$S_.7769@fed1read01>
Source record: 109637

At URL:
http://www.hy-gain.com/manuals.php

More Manual searches at URL:
http://ac6v.com/manuals.htm

The Keyboard In The Wilderness

4194. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:39:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ocvmkvglq6tvc6kht80c9lneble9ngsmnh@4ax.com>
Source record: 109638

On Tue, 26 Aug 2003 09:17:33 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>Two waves are flowing with unchanging energies and producing an absolutely
>>>black ring, i.e. zero irradiance equals zero power.
>>
>> Only when you violate conservation of energy, ...
>
>No violation at all, Richard. The power (irradiance) that is lost
>in the black rings is gained in the bright rings as explained in
>_Optics_, by Hecht where he says constructive interference is
>always equal to destructive interference.

Hi Cecil,

So you contradict yourself. Two waves do not produce a black ring,
they produce two rings (one dark, one bright) over an interval of one
wavelength (the proper bounds for an energy solution) and the sum of
them are the same as the applied powers - not zero. Choosing lesser
bounds to craft your "proof" constitutes an invalid proof.

73's
Richard Clark, KB7QHC

4195. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:40:15 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b80d9_7@corp.newsgroups.com>
Source record: 109639

Roy Lewallen wrote:
> Consequently, I don't see how it would be productive, or add insight to
> the problem of voltages, currents, and reflections in a transmission
> line, to bring in S parameter terminology which obviously differs and in
> an inconsistent way from author to author.

A good reference is HP's application note, AN 95-1, available for download
from Agilent: http://contact.tm.agilent.com/Agilent/tmo/an-95-1/index.html

Another good reference is: _Fields_and_Waves_... by Ramo, Whinnery, and
Van Duzer, section 11.09. The basic equations are pretty simple:

b1 = s11*a1 + s12*a2 b2 = s21*a1 + s22*a2
--
73, Cecil http://www.qsl.net/w5dxp

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4196. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:41:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b813a$1_7@corp.newsgroups.com>
Source record: 109640

kd1@sympatico.ca wrote:
> Your analysis overlooks that we are discussing an ideal line that
> has reached steady state. Before the line reaches steady state, energy
> does cross the quarter wave points, but, of course, while this is
> happening the voltages and currents at the quarter wave points are not
> yet zero.

Please stop discussing NET energy and start discussing component energies.
--
73, Cecil http://www.qsl.net/w5dxp

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4197. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:48:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b82ac_7@corp.newsgroups.com>
Source record: 109642

William E. Sabin wrote:
> The power wave concept is quite valid.

In fact, power waves are used almost exclusively in the field of optics,
the "other" EM waves. Since the phase of light is extremely hard to
measure, it is deduced from the irradiance (power) patterns. The same
deductive logic can be used with RF transmission lines (if anyone actually
cares about logical thought).
--
73, Cecil http://www.qsl.net/w5dxp

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4198. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:51:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <b50nkvgdlka5m3hncoam1d3vat6euc5g8s@4ax.com>
Source record: 109641

On Tue, 26 Aug 2003 00:35:49 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>That's the flaw in your logic and this is about the 5th time I have
>explained it to you.

Hi Cecil,

And what makes this remarkable? Your obvious gusting on to no effect
or his lack of understanding?

If what you said comes to no particular change once, twice, or thrice,
why would you think two or more times beyond that will do it? You've
shown no less obduracy to others and your example hardly offers a
compelling resolution to either of your problems.

73's
Richard Clark, KB7QHC

4199. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 15:52:30 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b83b6$1_7@corp.newsgroups.com>
Source record: 109643

Tom Coates wrote:

> I recall reading about this many years ago but can't find it in any of the
> books I have now.
>
> How do I couple the meter to the antenna?

Usually a couple of loops of coil are fastened to the end of the transmission line and the grid dip coil is inserted into the loops. Seems I had more fun with that old grid dip meter than I now do with an antenna analyzer. It contains a 6C4 and still works.
--
73, Cecil http://www.qsl.net/w5dxp

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4200. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 16:04:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b8699$1_7@corp.newsgroups.com>
Source record: 109644

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>No violation at all, Richard. The power (irradiance) that is lost
>>in the black rings is gained in the bright rings as explained in
>>_Optics_, by Hecht where he says constructive interference is
>>always equal to destructive interference.
>
> So you contradict yourself. Two waves do not produce a black ring,
> they produce two rings (one dark, one bright) ...

Don't know what planet you live on, Richard, but on this one if there are two rings, one dark and one bright, there exists a dark ring. No contradiction at all. Please sober up and try to do a better job next time.
--
73, Cecil http://www.qsl.net/w5dxp

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4201. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 16:13:45 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4b88b3_7@corp.newsgroups.com>
Source record: 109647

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>That's the flaw in your logic and this is about the 5th time I have
>>explained it to you.
>
> And what makes this remarkable?

... his ability to ignore the great body of scientific facts contained
in the field of physics from which I have previously quoted. Most of what
we are discussing has been known for about 300 years. If he (and you) choose
to ignore the known facts of physics, there is absolutely nothing I can do
about it. Understanding interference patterns is centuries old but my daughter
still cannot understand them. Probably only a small percentage of the human
population understand interference patterns - which is a pity.
--
73, Cecil http://www.qsl.net/w5dxp

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4202. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 16:15:27 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <hq0nkvoeggoe9odsvbd671tu5nasgl5sia@4ax.com>
Source record: 109646

On Mon, 25 Aug 2003 21:54:51 -0400, kd1@sympatico.ca wrote:

>Consider again, Assertion A, in more detail this time:
>1) Consider a shorted ideal transmission line excited by a single
> frequency sinusoidal signal which has reached steady state
>2) At quarter wave points along this line, voltages and currents
> which are always 0 can be observed -- the standing wave
>3) Power is the rate at which energy flows
>4) The power (rate of energy flowing) at time t can be computed
> using p(t) = v(t) * i(t)
>5) Substituting a voltage or current which is always 0 into the
> expression above will result in a power which is also always 0
>6) From 2) and 5), the power (rate of energy flowing) at quarter
> wave points will be 0
>7) From 6), the energy crossing quarter wave points is 0
>8) From 7), energy can not be flowing down and up the line
> crossing quarter wave points
>
>Assume for the moment that all this optical talk has convinced me
>that conclusion 8) from Assertion A is false. For Assertion A
>to be false, one of the steps in Assertion A must be false.
>All the steps in Assertion A seem correct to me.
>Can you help me find the false step which makes Assertion A false?

Hi Keith,

One obvious and glaring mistake that you share with everyone is found
in your step (2).

To observe these variables necessarily involves extracting energy and
consuming power. Hence the Assertion is rendered false in its own
confirmation.

So what now? Step back and retract (2)? Then where's your proof?
Offer that the "assumption" that replaces the reality of this step
renders the reality unnecessary?

These issues are then argument in faith between those who have none.
This is because other methods that do employ reality exist to offer
"proof" in equal measure, and yet no one seems prepared to go there,
or show any awareness of those paths.

You need only recite the virtues of the TR/ATR tube in RADAR systems
to offer Richard, KB5WZI, a model he can accept, and one that is
solidly based in reality. You could posit the complete solution to
the interference model so expounded upon by Cecil, except he seems to

have a patent on its application to his uniquely crafted solutions.

73's
Richard Clark, KB7QHC

4203. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 16:22:39 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <jPL2b.203305$lt4.96674@rwcrnsc51.ops.asp.att.net>
Source record: 109648

W5DXP wrote:
> Tom Coates wrote:
>
>> I recall reading about this many years ago but can't find it in any of
>> the
>> books I have now.
>>
>> How do I couple the meter to the antenna?
>
>
> Usually a couple of loops of coil are fastened to the end of the
> transmission
> line and the grid dip coil is inserted into the loops. Seems I had more fun
> with that old grid dip meter than I now do with an antenna analyzer. It
> contains
> a 6C4 and still works.

I have an AN/PRM-10 GDO and I will not part with it.

I have a MFJ 259B and I will not part with it, either.

Follow the instructions above with a GDO. For more detailed analysis the
MFJ 259B or equivalent Analyzer will do a FB job.

Deacon Dave, W1MCE

4204. Info on 450 ohm ladder-line,

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 16:29:17 UTC
From: kalin <kalin@tnet.com.au>
Message-ID: <3f4b8701$0$95046$c30e37c6@lon-reader.news.telstra.net>
Source record: 109645

[No readable article body recovered]

4205. Re: Added a few turns.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 16:39:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <422nkvcgm38s4an79ccg3nfqng0ipo2m7g@4ax.com>
Source record: 109649

On Tue, 26 Aug 2003 09:28:53 -0600, "Ken Bessler"
<kg0wx@NOSPAMyahoo.com> wrote:

>
>2.330 mhz, 1:1
>8.040 mhz, 1.8:1
>13.630 mhz, 1:1 <<<new!
>23.615 mhz, 1.2:1
>
>I didn't add any coax to make the turns - I simply used the slack
>in the line I had to wind the turns. I can't wind any more without
>adding coax at this point..... I have 8-1/2' of rg8x between the
>coil and my Z11 autotuner.
>
>Anyone know what's going on here? FYI the antenna is a 153'2"
>dipole wrapped closely around a brick building. The feedpoint
>is on the third floor window, the ends are 1) chest height and
>2) 10' high. Everything is very well grounded (covered here
>before).....

Hi Ken,

One of several things going on, barring more data.
>I have 8-1/2' of rg8x between the
>coil and my Z11 autotuner.
How much distance between the choke and the feedpoint? How much
distance between the auto tuner and your station?

If considerably less then that means you and your domicile are
immersed in the very near fields of the antenna. This complicates
matters and certainly offers the prospects of Common Mode issues
galore (simply through imbalances offered by life in the 'burbs).

How near is too near? For 160M you cannot escape being part of the
radiator by living in the conventional house in a conventional tract.
Higher frequencies only reduce this prospect by degrees. For 20M the
near field, by various assessments, extends as little as 20M away from
the antenna to more conservative expectations of 100M to 200M.

How much does it matter? You seemed to have reduced what Common Mode
issues you could perceive enough. This doesn't mean you completely
removed them, just reduced them below your thresh hold of detection.
So, in that sense, mattering is an issue of detection and if your
neighbors do not detect your activity, nor do you burn yourself on
equipment ground, then there is no "problem."

If you want to increase your thresh hold of detection, break a ferrite bead in half (to get a C shaped, half torus) and wrap the leads of a high output LED around it once (same thing as shorting the leads and inserting the half torus through them). Red LEDs rated at 1 Candela or better are very suitable and can be found at Radio Shack. Hold the half torus near conductors and check for a glow. This should offer 10 to 100ï¿½A sensitivity and something new to worry about. ;-)

73's
Richard Clark, KB7QHC

4206. Re: Added a few turns.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 16:55:36 UTC
From: Ken Bessler <kg0wx@NOSPAMyahoo.com>
Message-ID: <PxycnWyWSqqXDNaiXTWJhw@comcast.com>
Source record: 109650

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:422nkvcgm38s4an79ccg3nfqng0ipo2m7g@4ax.com...
> Hi Ken,
>
> One of several things going on, barring more data.
> >I have 8-1/2' of rg8x between the
> >coil and my Z11 autotuner.
> How much distance between the choke and the feedpoint? How much
> distance between the auto tuner and your station?

Between the choke and the feedpoint is 3 3/4".
Between the Z11 and the station about 6"....

>
> If considerably less then that means you and your domicile are
> immersed in the very near fields of the antenna. This complicates
> matters and certainly offers the prospects of Common Mode issues
> galore (simply through imbalances offered by life in the 'burbs).
>
> How near is too near? For 160M you cannot escape being part of the
> radiator by living in the conventional house in a conventional tract.
> Higher frequencies only reduce this prospect by degrees. For 20M the
> near field, by various assessments, extends as little as 20M away from
> the antenna to more conservative expectations of 100M to 200M.
>
> How much does it matter? You seemed to have reduced what Common Mode
> issues you could perceive enough. This doesn't mean you completely
> removed them, just reduced them below your thresh hold of detection.
> So, in that sense, mattering is an issue of detection and if your
> neighbors do not detect your activity, nor do you burn yourself on
> equipment ground, then there is no "problem."

I rember reading a thread awhile back that suggested one could get
an RF burn even at 5 watts, so I tested for that. I transmitted on all
freqs while touching various points (case screws, Pl-259 cases, etc.)
while I ramped up the freq from 1.8-30 mhz continuos <sp>. I felt no RF
and saw no change in SWR or power draw when tapping these points.

>
> 73's
> Richard Clark, KB7QHC

Thanks for the good info, Richard - I hadn't though of near field issues...

72's de Ken KG0WX

4207. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:01:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qb4nkv8i46jbt6hm2bh1631lhq7qpmn2e8@4ax.com>
Source record: 109651

On Tue, 26 Aug 2003 11:13:45 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>Richard Clark wrote:
>
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>That's the flaw in your logic and this is about the 5th time I have
>>>explained it to you.
>>
>> And what makes this remarkable?
>
>there is absolutely nothing I can do about it.

Hi Cecil,

And yet you gust on in indifference. Well, I am going to step inside
out of the elements and watch the leaves dance. ;-)

73's
Richard Clark, KB7QHC

4208. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:06:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2j4nkvs9dah5rt0k7b56r94pcr8run8k61@4ax.com>
Source record: 109652

On Tue, 26 Aug 2003 11:04:48 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>No violation at all, Richard. The power (irradiance) that is lost
>>>in the black rings is gained in the bright rings as explained in
>>>_Optics_, by Hecht where he says constructive interference is
>>>always equal to destructive interference.
>>
>> So you contradict yourself. Two waves do not produce a black ring,
>> they produce two rings (one dark, one bright) ...
>
>Don't know what planet you live on, Richard, but on this one if there
>are two rings, one dark and one bright, there exists a dark ring. No
>contradiction at all. Please sober up and try to do a better job next
>time.

Hi Cecil,

I live on the blue marble your planet is now approaching as close as
it has been in 70,000 years. The sobriety you speak of is a matter of
having more oxygen than you. As for jobs? Write when you find work,
buckaroo. We have a dead rover somewhere near you that could stand
fixing. ;-)

73's
Richard Clark, KB7QHC

4209. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:14:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <n75nkvor3n98kue6o10amn4l4uqvim5789@4ax.com>
Source record: 109653

On Tue, 26 Aug 2003 06:24:17 GMT, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Yes!!! Finally I'm recognized for what I am...
>
>The Darth Vader of USENET.

Hi Darth,

When you run across your son, please keep it a family secret.

73's
Richard Clark, KB7QHC

4210. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:16:59 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkn5g36d7g5cf6@corp.supernews.com>
Source record: 109654

In transmission line analysis, we're not free to rescale the forward and reverse voltage waves, unless we also scale all the voltages, currents and powers accordingly. The forward and reverse waves have to add to the total voltage in the line and at its ends, and the ratio of each component to the corresponding current component has to equal the Z0 of the line. It's quite apparent that in S parameter analysis you're quite free to scale them as you wish, as you have. Vendelin et al didn't just scale them, but chose a set of V+ and V- which aren't even related to a and b by the same constant.

By defining V+ and V- as we wish, we can make the reflection coefficient V-/V+ to be zero when there's a Z0 match, when there's a conjugate match, or when any other impedance of our choice is used as a termination. And when we relieve the requirement that the sum of V+ and V- add to the total voltage, we can have any value of V+ we choose, when V- is zero. The various analyses I've seen have made different choices, and arrived at different V+, V-, and voltage reflection coefficient values.

Again, though, when dealing with a transmission line we don't have the luxury of choosing any definitions of V+ and V- we want. Consequently, in a transmission line, the ratio of V-/V+, universally defined at the voltage reflection coefficient, can be calculated with the familiar non-conjugate formula. The formula can be derived as I did it, from basic principles. And from it or other methods, we can conclude that when a transmission line is terminated in its characteristic impedance, there is no reflection of the voltage (or current) wave. When it's terminated in the complex conjugate of its characteristic impedance, or any other impedance except its characteristic impedance, there is a reflection.

Roy Lewallen, W7EL

Peter O. Brackett wrote:
> Roy:
>
> [snip]
>
>>Consequently, I don't see how it would be productive, or add insight to
>>the problem of voltages, currents, and reflections in a transmission
>>line, to bring in S parameter terminology which obviously differs and in
>>an inconsistent way from author to author. I'll be glad to continue
>>discussing transmission lines, which is what this discussion originally
>>involved, with the first step being for someone disagreeing with the
>>formula for voltage reflection coefficient to point out which of the
>>equations or assumptions preceding it are incorrect. Your analysis

>>disagrees with equations 5 and 6 and, I believe, 1 and 2, by virtue of
>>your different definition of forward and reverse voltage. I don't
>>believe this can be justified within and at the end of a transmission
>>line -- if the forward and reverse voltages on the line don't add up to
>>the total, then you have to come up with at least one more voltage wave
>>you assume is traveling along the line (which summed with the others
>>does equal the total), and justify its existence.
>>
>>Roy Lewallen, W7EL
>
> [snip]
>
> Thanks for following along with my development. I like to develop stuff
> from first principles, instead of quoting often questionable sources.
>
> Roy apart from a few typos and a small factor of 1/2 it seems that we agree
> on everything!
>
> Sorry if I messed up a little with typos, and... there is that potentially
> confusing but unimportant factor of 1/2 that appears in my definitions of
> the incident "waves" a and b.
>
> Your claim as to my definitions being quite different from the "mainstream"
> of transmission line theory was a bit hasty, because in fact with a closer
> look I believe that you will see that my definitions and yours [Which are
> hhe mainstream transmission line definitions and equations] only differ by a
> simple numerical factor of 2. I don't use that factor of 1/2 because it
> drops out whenever you take a ratio of waves anyway.
>
> Perhaps I should have defined my a to be a = 1/2(v + Ri) and b = 1/2(v - Ri)
> instead of a = v + Ri and b = v - Ri as I have done. Including that factor
> of 1/2 in my a and b makes them identical to your incident and reflected
> voltages.
>
> This factor of 1/2 is a very minor "scaling" difference in the "waves" and
> there is absolutely no difference in reflection coefficient, or indeed in
> Scattering Matrix definitions since the factor of 1/2 in each of "my" wave
> definitions simply cancels out in rho = b/a, when you divide b by a to get
> rho or indeed in calculating with wave vectors and Scattering Matrixs of any
> order. My definition of the scaling factor [1/2] for the wave variables
> works as well as any other as long as consistency is maintained. Like you I
> have found that different Scattering Theory books often use a variety of
> different scaling factors in defining the waves, for instance some use a
> factor of 1/2*sqrt(R) = 1/2*sqrt(Zo) in the definition of the waves, etc...
> It simply doesn't matter as long as you are consistent.
>
> In any case, the scaling value in the definition of the "waves" was not my
> point.
>
> The point I was trying to make was to address the subtle point initiated by

> Slick, i.e. the one about the definition of rho which is the ratio of
> reflected to incident waves, where the scaling factors drop out, and whether
> the CONJUGATE of the reference impedance should be used in the definition
> for rho or not.
>
> My point was that the conventional definition of rho = (Z - R)/(Z + R)
> without the CONJUGATE is in fact the "natural" definition for wave motion
> whether on transmission lines or in impedance matching to a generator.
> And...
>
> That with the conventional definition of rho in the case of a general Zo the
> reflected voltage will *NOT* be zero at a conjugate match. At a conjugate
> match, the classical rho and b will only be null in the special case of the
> reference impedance Zo being a pure real resistance.
>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.
>
>

4211. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:24:36 UTC
From: dplatt@radagast.org
Message-ID: <vkn5uk2uv8idc5@corp.supernews.com>
Source record: 109655

OK1SIP <remove_ok1sip@atlas.cz> wrote:
>Hi all,
>the electrical codes differ in different countries. Consult the
>current one in your country.

#snip# neutral-ground interconnection

>This setup was legal and widely used in Czechoslovakia for many years.
>Now it should not be used in new or reconstructed instalations, but it
>is still in use in thousands of houses and flats. It doesn't seem
>hazardous provided that the network is fused properly.

#snip# ground/piping interconnection

>The Czech code requires to interconnect all tubing and conductive
>items in a bathroom and connect them to the protective wire
>(protective AND NEUTRAL in older installations, see higer)...
>
>BR from Ivan

Fascinating information, Ivan - thanks very much! "Curiouser and
curiouser..."

--
Dave Platt <dplatt@radagast.org> AE6EO
Hosting the Jade Warrior home page: http://www.radagast.org/jade-warrior
I do _not_ wish to receive unsolicited commercial email, and I will
boycott any company which has the gall to send me such ads!

4212. Small Directional Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:34:38 UTC
From: rjw01@yahoo.com
Message-ID: <1db36613.0308260934.1460401d@posting.google.com>
Source record: 109656

Want to make a small directional antenna in UHF bands- either a yagi or HB9CV or ??? Want the elements to be less than .5 WL. Anyone know how to center or end load elements so that width of antenna could collapse down to half to two-thirds the normal .5 WL? Perhaps some other antenna design would do it but element loading comes first to mind. Goal is VSWR of 1.5, a FB of 10db or better and beam width of +/- 20 to 30 degress. In the 900 mhz band would like to limit width to say 3 to 4 inches versus the nominal 6+. Any thoughts or directions to look? Thanks!

4213. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:35:52 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkn6jfs4dkac91@corp.supernews.com>
Source record: 109657

Peter O. Brackett wrote:
> Roy:
>
> [snip]
>
>>No one from "Camp B" has given any justification for the assumption that
>>the condition for minimum reflection is the condition for maximum power
>>transfer. We're lacking either a proof, a derivation from known
>>principles, or even a numerical example. I maintain that this assumption
>>is false.
>
> [snip]
>
> I did just that in a separate posting on this thread a couple of days ago.
>
> In fact I "proved" in that post, using basic algebra, that maximum power
> transfer [i.e. a
> conjugate match] does not result in a null in the classical voltage
> reflection
> coefficient. One only get's a null in the classic reflection coefficient if
> one has
> an "image match", i.e. a Zo match to use Cecil's favorite name for that old
> term.

> . . .

I'll restate something I mentioned before (first incorrectly, then corrected). Connecting a load to a transmission line which is the complex conjugate of the transmission line Z0 does *not* guarantee maximum power delivery from the source, or to the load. The load impedance which provides maximum load power is the complex conjugate of the impedance looking back from the load toward the source. That impedance is the source impedance transformed through the transmission line between source and load, and it's not generally the same as the line's Z0, or its complex conjugate. When this condition of maximum load power is met, there will almost certainly be voltage and current wave reflections on the line -- there would be none only if the optimum load impedance coincidentally happened to be equal to the line Z0. So the argument that there can be no reflection of the voltage wave under the condition of maximum power transfer is wrong.

You didn't show differently in your analysis, and no one has stepped forward with a contrary proof, derivation from known principles, or numerical example that shows otherwise.

Roy Lewallen, W7EL

4214. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:51:02 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4B9E06.29CA9ECA@uci.edu>
Source record: 109660

W5DXP wrote:
> I don't think there's anything to argue about. From _Optics_, by Hecht:
> "We define the reflectance R to be the ratio of the reflected power to
> the incident power."

He certainly wasn't including Max Born and Emil Wolf when he said "We".
They define reflectance in terms of indices of refraction i.e.
(n1-n2)/(n1+n2).

73, ac6xg

4215. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 17:52:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qm6nkvsad4a5m3htf9q90rfvr11meuojb5@4ax.com>
Source record: 109658

On Sun, 24 Aug 2003 15:27:02 GMT, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Give me your results for
>any arbitrary reference impedance and provided you have not done anything
>inconsistent in your measurements or mathematics then I can readily convert
>[mathematically] all of your measurements and conclusions into my own
>viewpoint and my own reference impedance.

Hi Peter,

The scenario begins:

"A 50-Ohm line is terminated with a load of 200+j0 ohms.
The normal attenuation of the line is 2.00 decibels.
What is the loss of the line?"

Having stated no more, the implication is that the source is matched
to the line (source Z = 50+j0 Ohms). This is a half step towards the
full blown implementation such that those who are comfortable to this
point (and is in fact common experience) will observe their answer and
this answer are:

"A = 1.27 + 2.00 = 3.27dB"

"This is the dissipation or heat loss...."

we then proceed:

"...the generator impedance is 100+0j ohms, and the line is 5.35
wavelengths long."

I could have simply given you the answer to allow you to fulfill your
challenge above (by predicting the generator Z from that answer), but
I thought a simple resolution of a real value would be more to the
point - quicker that is.

I know you eschew academic references in favor of "first principles,"
but others may want more material than the simple puzzle aspect.
They can consult "Transmission Lines & Networks," Walter C. Johnson,
Chapter 13, "Insertion Loss and Reflection Factors." But lest those
who go there for the answer, I will state it is from another
reference, Johnson simply is offered as yet another reference to
balance the commonly unstated inference of SWR mechanics being
conducted with a Z matched source. "Transmission Lines," Robert
Chipman is another (and not the source of the puzzle either).

73's
Richard Clark, KB7QHC

4216. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 18:03:18 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4ba264_7@corp.newsgroups.com>
Source record: 109659

Roy Lewallen wrote:
> It's quite apparent that in S parameter analysis you're quite
> free to scale them as you wish, as you have.

The scaling is defined by the s-parameter specification. Nobody is
free "to scale them as you wish". For instance, a1 is defined as:

(V1+I1*Z0)/2*Sqrt(Z0)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4217. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 18:16:41 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4ba584_7@corp.newsgroups.com>
Source record: 109661

Jim Kelley wrote:

> W5DXP wrote:
>>I don't think there's anything to argue about. From _Optics_, by Hecht:
>>"We define the reflectance R to be the ratio of the reflected power to
>>the incident power."
>
> He certainly wasn't including Max Born and Emil Wolf when he said "We".
> They define reflectance in terms of indices of refraction i.e.
> (n1-n2)/(n1+n2).

The Reflectance is equal to the square of the amplitude reflection
coefficient.

R = Ir/Ii = [(n1-n2)/(n1+n2)]^2

Hecht says the definition "leads to" the last term above.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4218. Re: Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 18:30:49 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <big90p$c1h$1@titan.btinternet.com>
Source record: 109662

Andrew, Just enter in EZNEC :

Conductivity = 0.1 milli-Siemens,

(Or Resistivity = 10,000 ohm-metres.)

Permittivity, or dielectric constant K = 4,

and you will get results just as accurate as EZNEC is able
to provide with more usual values of ground 'constants'.

At HF, in the case of granite, as discussed below, the
controlling factor is permittivity K and any reasonable
very high value for resistivity will suffice. Granite is a
fairly low-loss material. Roy, you should have more
confidence in your 'baby'.

Soil, or whatever you are blessed with, has an
impedance Zs = Rs - jXs. It can be modelled to the
first order of accuracy by a resistance in parallel
with a capacitance.

Rs and jXs are the equivalent series components.

Soil resistivity is that measured between opposite
faces of a 1-metre cube of the material. Easy to
visualise and understand.

Capacitance is that measured between a pair of
1-metre square plates spaced 1-metre apart,
multiplied by the permittivity of the material.

Unless iron filings or crushed ferrite are mingled with the soil, the
permeabilty of this 1-metre cube of space will be unity and can be ignored.
Such mixtures are not known in the natural world.

Soil loss occurs due to current flowing in the soil
through Rs. Note carefully that Rs, a series
component, reduces as frequency increases. And
so soil loss decreases with increasing frequency.

Permittivity K increases fast with water content. In
solid rock moisture content is negligible and K is
that of the material itself, crudely 3 to 7. Mica is
a rock, K = 7. Quartz, another rock, K = 4.
Sahara sand has a lot of dry air in it, K = 3.

Lumping all sorts of backyards together, soil impedance is resistive below 1 or 2 MHz with a small -ve angle. Around 5 to 12 MHz impedance has an angle around 45 degrees. At 30 MHz impedance is that of a lossy capacitor, but low in value and therefore a good reflector. At VHF soil impedance is very low, has a high negative angle, and is an efficient low-loss reflector.

The best reflectors are those with a small impedance magnitude relative to 377 ohms combined with an impedance angle approaching -90 degrees. The angle of incidence is also in there somewhere. But don't forget skin depth in the soil is quite shallow at VHF and only the top thin surface layer may be involved.

If anybody intends to do any calculations it's far more convenient and meaningful to work in practical terms of ohm-metres. Milli-Siemens sounds pseudo-scientific and is not particularly impressive.

The capacitance between two 1-metre square plates, spaced 1-metre apart, is 8.8 picofarads. Doesn't seem very much. But with an ordinary garden soil permittivity of 15, the impedance at 7 MHz is - j170 ohms. And with an ordinary garden soil resistivity of 170 ohms-metres we have an angle of -45 degrees.

Two programs, EARTHRES and RADIOETH may be of interest. Download in a few seconds from the following website and run immediately. In addition, program SOILSKIN, as may be expected, calculates skin depth in soil.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

4219. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 19:14:14 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308261114.3b06ce8b@posting.google.com>
Source record: 109663

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030826001910.12079.00000410@mb-m20.aol.com>...
> >
>
> My pitifully inadequate education could be of no interest to you, Garvin; I'm
> just a humble ham. (This is an _amateur_ newsgroup after all.) It is
> interesting to me, though, that a person of your age and attainments
> would pose as a potty-mouth little black-faced god whenever someone
> disagreed with you about something as abstruse as the reflection
> coefficient on a transmission line. I can only suppose that your social
> education was deficient, or that you really do want your name to be the
> most popular in the group's collective killfile. Anyway, you're wasting your
> time with the infantile behavior. Most of the fellows on this group are old
> men
> who gave up that form of discourse when they learned to talk.

Errmm...Pot calling the Kettle Black? You just described me as a
"a potty-mouth little black-faced god"!!! You don't call this
infantile behaviour?

And why "Black-faced"?

And many of the other "adults" in this NG act infantile IN THEIR
OWN WAY.
Witness how Roy will compare someone to his adolescent son, when they
don't agreed with him. And then look at Cecil. Same sh**.

And you know, you could be a high-school drop out for all i care.
The great thing about the NGs is that people don't judge you by your
age or looks, only by what you write. If you wrote logically, like
Richard, then i would respect you...but you don't. I don't care where
Richard went to school, he knows his sh**.

> By the way, some of your art isn't half bad and shows the influence of some
> training. Did you have an art minor in college?
> 73,
> Tom Donaly, KA6RUH

No, i took one painting class and that's it. I'm a modern day
renaissance-man i guess... :)

Slick

4220. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 19:27:00 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4BB484.DCF36E7C@uci.edu>
Source record: 109664

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>I don't think there's anything to argue about. From _Optics_, by Hecht:
> >>"We define the reflectance R to be the ratio of the reflected power to
> >>the incident power."
> >
> > He certainly wasn't including Max Born and Emil Wolf when he said "We".
> > They define reflectance in terms of indices of refraction i.e.
> > (n1-n2)/(n1+n2).
>
> The Reflectance is equal to the square of the amplitude reflection
> coefficient.
> R = Ir/Ii = [(n1-n2)/(n1+n2)]^2

Again, Born and Wolf disagree with Hecht. They define Reflectivity as
being the square of the reflection coefficient.

> Hecht says the definition "leads to" the last term above.

Certainly he didn't feel that some relative amounts of power are what
determine the indices of refraction of the system. That would be
ridiculous.

73, ac6xg

4221. Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 22:19:26 UTC
From: Bob <bob@agawamnet.com>
Message-ID: <zsScnc1c1qzTRtaiU-KYvg@comcast.com>
Source record: 109665

Any recommendations for an antenna to put in the attic for use with a bc895xlt scanner. Will be for general scanning and not on any particular frequency. Dimensions would be helpful if anyone has this.

Bob

4222. Re: Info on 450 ohm ladder-line,

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 22:20:15 UTC
From: Francois Pare <francoispare2002@yahoo.ca>
Message-ID: <3F4BDE03.7000906@yahoo.ca>
Source record: 109666

kalin a ï¿½crit:

no text my friend ... ?

;) watch that delete button ... hi hi

4223. WTB: inexpensive 40mtr monobander

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 22:29:29 UTC
From: W5IDX <W5IDX@qsl.net>
Message-ID: <dbR2b.267$oV2.93@newssvr23.news.prodigy.com>
Source record: 109667
Cross-posted to: rec.ham-radio.swap,rec.radio.amateur.antenna,rec.radio.amateur.equipment,rec.radio.amateur.swap

Wanted inexpensive 40 meter monobander
Thanks
W5IDX

4224. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 22:29:59 UTC
From: kd1@sympatico.ca
Message-ID: <3F4BDF67.5B40F08C@sympatico.ca>
Source record: 109569

Richard Clark wrote:
> Hi Keith,
>
> One obvious and glaring mistake that you share with everyone is found
> in your step (2).
>
> To observe these variables necessarily involves extracting energy and
> consuming power. Hence the Assertion is rendered false in its own
> confirmation.

It would seem that if we are allowed to posit, for the purposes
of discussion, the existence of ideal transmission lines, we should
also be allowed to posit the existence of ideal observation tools.

Once the world of the ideal is agreed and understood, then will be
the time to add in the necessary complexity so that the model agrees
with reality to the desired degree of accuracy (one dB, perhaps?).

When the discussion moves too quickly to the complexities of reality,
it seems that a thorough understanding of the basics is often not
attained.

...Keith

4225. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 22:35:29 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <S4WdnVXv7OtFfdaiU-KYgw@crocker.com>
Source record: 109668

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308251918.1c704dc0@posting.google.com...
> "David Robbins" <k1ttt@arrl.net> wrote in message
news:<MLWdnRrrKsCU-NeiXTWJiw@crocker.com>...
> > >
> > > Incorrect. You need the conjugate in the numerator if the Zo is
> > > complex. If it is purely real, WHICH MOST TEXTS ASSUME, then you can
> > > use the normal equation.
> > >
> >
> > sorry, the derivation for the table in the book i sent before is for the
> > general case of a complex Zo. they then go on to simplify for an ideal
line
> > and for a nearly ideal line... nowhere does a conjugate show up.
> >
>
> Please post this derivation again.

sorry, i don't have time for this. its really quite simple, just apply
kirchoff's and ohm's laws at the connection point and it falls right out.

>
> When they say "ideal line" do they mean purely real?

yes, purely real with no loss terms.

>
>
> > and that reference you give is not for a load on a transmission line, it
is
> > talking about a generator supplying power to a load... a completely
> > different animal.
>
> Not at all really. The impedance seen by the load can be from
> either a source or a source hooked up with a transmission line. It
> doesn't matter with this equation.
>

the reference you gave is looking at a generator connected to a load. true,
it doesn't matter if there is a transmission line in between the generator
and the 'load' but the impedance being used is the one transformed back to
the generator end of the line, not the one at the far end of the line... so
basically that equation is not a transmission line equation, it is a
generator to load reflection calculation done to maximize power not to
satisfy kirchoff.

4226. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 23:00:03 UTC
From: kd1@sympatico.ca
Message-ID: <3F4BE673.DC727A36@sympatico.ca>
Source record: 109570

Richard Harrison wrote:
>
> Keith wrote:
> "Why are you convinced the reflection point had to move?"
>
> This is the case when a line is extended to greater length, and the
> short or open also is moved to the new end of the line.
>
> Ever had a short or open somewhere in the middle of a line?

Actually, no.

> I have, and
> can testify that the signal doesn`t get past a real hard short or open
> in the line.
> As energy can`t be destroyed it had to be reflected by the
> hard short or open.

Or just stopped and stored, perhaps. This is certainly what happens
when you excite the line with a step function rather than a sinusoid.
When excited by a sinusoid, no energy moves at the quarter wave points
where the voltage or current is always 0. As you move away from the
quarter wave points, more and more energy moves on each cycle until
a maximum amount of energy is moved at the point half way between the
quarter wave points. And then it decreases back towards the next
quarter wave point.

All of this is easily visualized by observing the amplitude of the
p(t) function at various points along the line.

> In the case where the line short is moved to a point nearer the source,
> or where the short or open is moved to a place more distant on the line
> from the source, we know the energy travels all the way to the actual
> short or open where it is reflected because nulls occur at several
> points along a long transmission line.

"we know" is rather strong. I would strongly suggest that no energy
crosses those points in the line where the voltage and current are
always zero since p(t) is always zero at these points.

> If the energy were turned around
> before it reached the end of the line, nulls more distant from the
> source than the turnaround point would not exist.

Not so, the line has reached steady-state. Now the nulls exist. They
did not exist before the line reached steady-state.

> There would be no
> energy at the actual short or open at the end of the line were the
> energy turned around before it reached the end of the line.

Not necessarily. Only once the line has been charged, does the energy move back and forth between the quarter wave points, while not crossing them.

Try visualizing how a step function charges the line. How the voltage step propagates down the line. How the voltage step is reflected at the open end and starts travelling back towards the start. How between the start of the line and the returning voltage step, energy is flowing to charge the line, but between the returning voltage step and the open end of the line, the energy previously delivered is statically stored in the capacitance of the line. How once the line is completely charged, no current flows, there is no power, and the energy delivered during charging is stored in the capacitance.

Sinusoidal excitation is more difficult to visualize, but the prinicipal is the same.

...Keith

4227. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 23:13:38 UTC
From: kd1@sympatico.ca
Message-ID: <3F4BE9A2.2719E66F@sympatico.ca>
Source record: 109571

Richard Harrison wrote:
>
> Keith wrote:
> "Is it step 7)?"
>
> "7) From 6), the energy crossing quarter wave points is zero"
>
> False, as are several other of Keith`s speculations.

I do not see any flaw in step 7).

Assuming that step 6)
"6) From 2) and 5), the power (rate of energy flowing) at quarter
wave points will be 0"
is correct, then step 7)
"7) From 6), the energy crossing quarter wave points is 0"
must also be true, since,

If the rate of energy flowing is zero, then there is no energy
flowing so there can not be any energy crossing the point.

I do not find that step 7) is in error.

If there is an error in the final conclusion then I do not think
that it is an error in step 7) which causes the final error,
but, rather, the error must be in one of the earlier steps.

...Keith

4228. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 23:37:26 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qvqnkvsrsqalc8hpbbf4bb463fhlp2ld7k@4ax.com>
Source record: 109572

On Tue, 26 Aug 2003 18:29:59 -0400, kd1@sympatico.ca wrote:

>
>It would seem that if we are allowed to posit, for the purposes
>of discussion, the existence of ideal transmission lines, we should
>also be allowed to posit the existence of ideal observation tools.
>

Hi Keith,

All fine and well, but you have simply "defined" your own solution. You haven't explored it, explained it, or learned from it. Saying "it is thus" is meaningless. It's like Cecil's logic of zero power arising from the combination of all possible powers. "A gazzillion watts facing -gazzillion watts is zero watts - how can you deny a gazzillion watts?"

You may allow yourself these ideal tools, but you have wholly neglected their description, method, and application. The same solutions exist in reality, they are simply rough around the edges. Knowing the scope of error in context let's us judge for ourselves how significant the argument is. As I pointed out, there are a number of metaphors available to do this, and they still go wanting.

This so-called "ideal" is an illusion. I've measured physical constants out so many decimal places that the random noise of the big bang limited its accuracy, and yet there were still more places to report if anyone wished hard enough to believed in it. Perfection allows for error too.

73's
Richard Clark, KB7QHC

4229. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 23:40:05 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <urrnkvg8gd78nq3og8sqn2v0caepk74gqc@4ax.com>
Source record: 109573

On Tue, 26 Aug 2003 22:35:29 -0000, "David Robbins" <k1ttt@arrl.net>
wrote:
>the reference you gave is looking at a generator connected to a load. true,
>it doesn't matter if there is a transmission line in between the generator
>and the 'load' but the impedance being used is the one transformed back to
>the generator end of the line, not the one at the far end of the line... so
>basically that equation is not a transmission line equation, it is a
>generator to load reflection calculation done to maximize power not to
>satisfy kirchoff.
>
Hi David,

If it is time invariant (linear), it doesn't matter.

73's
Richard Clark, KB7QHC

4230. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-26 23:51:49 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308261551.56256db@posting.google.com>
Source record: 109574

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<qm6nkvsad4a5m3htf9q90rfvr11meuojb5@4ax.com>...

> The scenario begins:
>
> "A 50-Ohm line is terminated with a load of 200+j0 ohms.
> The normal attenuation of the line is 2.00 decibels.
> What is the loss of the line?"
>
> Having stated no more, the implication is that the source is matched
> to the line (source Z = 50+j0 Ohms). This is a half step towards the
> full blown implementation such that those who are comfortable to this
> point (and is in fact common experience) will observe their answer and
> this answer are:
>
> "A = 1.27 + 2.00 = 3.27dB"

Interesting. I'd first have asked if the line was really 50 ohms,
completely nonreactive. If so, L/C=R/G and I'd have said A=3.266dB.
If the line was just 50 ohms nominal, then I can think of at least one
scenario in which A=0.60dB. And I can think of another in which A=
5.2dB. The definition I have used for loss in those cases is
A=-10*log10(P1/P2), where P2 is the power delivered to the (line+load)
and P1 is the power delivered to the load, with steady-state
excitation. The answer, given that definition, never depends on
source impedance of the driving source. Of course it could with a
different definition, for example involving the maximum available
power from the source, but that just confuses the issue by lumping
"(source) mismatch loss" with acutal line loss, as has been pointed
out before.

Cheers,
Tom

4231. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:03:51 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <HzS2b.15894$8i2.12081@newsread2.news.atl.earthlink.net>
Source record: 109575

Richard:

[snip]
"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:n75nkvor3n98kue6o10amn4l4uqvim5789@4ax.com...
> On Tue, 26 Aug 2003 06:24:17 GMT, "Peter O. Brackett"
> <ab4bc@ix.netcom.com> wrote:
>
> >Yes!!! Finally I'm recognized for what I am...
> >
> >The Darth Vader of USENET.
>
> Hi Darth,
>
> When you run across your son, please keep it a family secret.
>
> 73's
> Richard Clark, KB7QHC
[snip]

Actually I have two sons [That I know of?] which one do you refer to, the "good" one or the "evil" one?

One som lives in Seattle [Tim], the other in San Francisco [Steve]... both are inactive hams, both think I'm far too old and... irrelevant anyway. Sigh... My wife gives me no respect, my sons give me no respect, the only respect I get is from the denziens of this Newsgroup, and even then it's only when I attempt to "terrorize" the group with tidbits of algebra! :-)

What?

--
Peter K1PO
Indialantic By-the-Sea, FL.

4232. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:15:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <EKS2b.15910$8i2.9816@newsread2.news.atl.earthlink.net>
Source record: 109576

Roy:

[snip]
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vkn5g36d7g5cf6@corp.supernews.com...
> In transmission line analysis, we're not free to rescale the forward and
> reverse voltage waves, unless we also scale all the voltages, currents
> and powers accordingly. The forward and reverse waves have to add to the
> total voltage in the line and at its ends, and the ratio of each
> component to the corresponding current component has to equal the Z0 of
> the line.
[snip]

I agree, that's why I say the definition of rho with Zo and not the
conjugate is
actually Mother Natures definition. Simply because that's the way the
solution
to the wave equation [The Telegraphists Equation] turns out.

[snip]
> It's quite apparent that in S parameter analysis you're quite
> free to scale them as you wish, as you have. Vendelin et al didn't just
> scale them, but chose a set of V+ and V- which aren't even related to a
> and b by the same constant.
[snip]

Actually you are free!

Just define the waves a and b as any linear combination of i and v and as
long as the linear combination is non-singular you will be just fine! You
can Engineer systems to your hearts content and get all the right answers.
[It's sort of like the assumption of current flow in conductors from + to -,
even though we "know" electrons flow the other way, it always
gives us the correct Engineering answers, so who cares!]

[snip]
> basic principles. And from it or other methods, we can conclude that
> when a transmission line is terminated in its characteristic impedance,
> there is no reflection of the voltage (or current) wave. When it's
> terminated in the complex conjugate of its characteristic impedance, or
> any other impedance except its characteristic impedance, there is a
> reflection.
>
> Roy Lewallen, W7EL
[snip]

Roy my friend we are in violent agreement!

--
Peter K1PO
Indialantic By-the-Sea, FL.

4233. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:17:08 UTC
From: NN7K@reno.rmci.net
Message-ID: <gCS2b.1256$xD2.93@fe01.atl2.webusenet.com>
Source record: 109577

And, it gets even better!! As most homes now use EITHER Plastic, or Copper pipes.
Obviously, Plastic is an insulator. What many DON'T appreciate, however, is that COPPER PLUMBING (to the water main) most likely (and , if it doesn't , should be installed) has Insulated UNIONS ! These are placed on the feeds to prevent electrolysis! With them, copper pipe will survive 20 + Years, before being eaten thru. Without, more like 5-8 years!! And, even in OLDER HOMES , with Iron pipes, if the lines have been replaced, you may encounter this !
Word to the wise: sink a 8 FOOT ground rod!! Better to be safe than sorry-- Jim NN7K

k1ttt wrote

> > I haven't read the rest of the thread, but here's something glaringly
> > obvious...
> >
> > > Grounding will be easy when I get around to it - I have
> > > baseboard hot water radiators that I can ground to.
> >
> > NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
> > as it goes directly to the earth outside the building. The hot water
> > pipes are routed through the hot water heater(s) and are NOT a direct
> > path to ground.
> >
>
> first a couple of truisms:
> NEVER say NEVER.
> NEVER believe anyone who asserts an ALWAYS.
> In the end an easy job is rarely as easy as you first thought.

RIGHT ON !!!

> That being said, NEVER rely on pipes of any kind for safety (either AC or
> lightning) grounding of equipment, ALWAYS run your own wire to the proper
> ground rod or electrical service connection as required by electrical codes.
>
> RF "grounds" are another problem. The problem here is to remember that any
> conductor more than a small fraction of a wavelength will have currents
> induced in it and thus have a different voltage at one end than the other
> when exposed to an HF RF field. The real aim here is two fold: First, to
> provide a low resistance path for 'ground' currents back to the antenna end

> of the feedline so the currents in the feedline can be properly balanced.
> Second, to keep all equipment and personel in the antenna field near the
> same potential to prevent injury and reduce interference.

4234. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:23:24 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <0SS2b.15923$8i2.13057@newsread2.news.atl.earthlink.net>
Source record: 109578

Cecil:

[snip]
> The scaling is defined by the s-parameter specification. Nobody is
> free "to scale them as you wish". For instance, a1 is defined as:
>
> (V1+I1*Z0)/2*Sqrt(Z0)
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

I like that definition best of all in a theoretical setting... but be
prepared...
there are many others to be found in the literature.

Even though I like the definition you have shown above, I find the
definitions...

a = v + Zo*i and b = v - Zo*i

To be very convenient in practice since they correspond to a very easy to
understand, visualize and manipulate single Operational Amplifier
reflectometer
circuit.

As long as the relationship between v and i and a and b are simple linear
combinations
without singularities, i.e. the transformation matrix M which allows you to
transform between
the [a, b] vectors and the [i, v] vectors is non-singular then you are just
fine, as long as
you remain consistent with your initial definition. You can perform
reliable and accurate
Engineering with any definition of the "waves" [a, b] that are a suitable
linear combination of the
"electricals" [i, v].

--
Peter K1PO
Indialantic By-the-Sea, FL.

4235. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:27:27 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <PVS2b.15932$8i2.6005@newsread2.news.atl.earthlink.net>
Source record: 109579

Richard:

[snip]
> I know you eschew academic references in favor of "first principles,"
> but others may want more material than the simple puzzle aspect.
> They can consult "Transmission Lines & Networks," Walter C. Johnson,
> Chapter 13, "Insertion Loss and Reflection Factors." But lest those
> who go there for the answer, I will state it is from another
> reference, Johnson simply is offered as yet another reference to
> balance the commonly unstated inference of SWR mechanics being
> conducted with a Z matched source. "Transmission Lines," Robert
> Chipman is another (and not the source of the puzzle either).
>
> 73's
> Richard Clark, KB7QHC
[snip]

I hear you...

I don't eschew academic references, but when it comes to systems
Engineering, I do try to follow what our great President Regan once said,
"Trust, but Verify!"

--
Peter K1PO
Indialantic By-the-Sea, FL.

4236. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:33:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <L%S2b.15950$8i2.626@newsread2.news.atl.earthlink.net>
Source record: 109580

Roy:

[snip]
> You didn't show differently in your analysis, and no one has stepped
> forward with a contrary proof, derivation from known principles, or
> numerical example that shows otherwise.
>
> Roy Lewallen, W7EL
[snip]

Yes I did. I guess that you missed that post.

I'll paste a little bit of that posting here below so that you can see it again.

[begin paste]
We are discussing *very* fine points here, but...

[snip]
ratio of the reflected to incident voltage as rho = b/a would yeild the usual formula:

rho = b/a = (Z - R)i/(Z + R)i = (Z - R)/(Z+ R).

In which no conjugates appear!

Now if we take the internal/reference impedance R to be complex as R = r + jx then for a "conjugate match" the unknown Z would be the conjugate of the internal/reference impedance and so that would be:

Z = r - jx

Thus the total driving point impedance faced by the incident voltage a would be 2r:

R + Z = r + jx + r - jx = 2r

and the current i through Z would be i = a/2r with the voltage v across Z being v = a/2.

Now the reflected voltage under this conjugate match would not be zero, rather it would be:

b = (Z - R)i = ((r - jx) - (r + jx))i = (r - r -jx -jx)i = -2jxi = -2jxa/2r = -jax/r

and the reflection coefficient value under this conjugate match would be simply:

b/a = rho = - jx/r

Thus I conclude that, under the classical definitions, when one has a "conjugate match" [i.e. maximum power transfer] the reflected voltage and the reflection coefficient are not zero.
:
:
In summary:

Under the classical definition of rho = (Z - R)/(Z + R) rho will be not be zero for a "conjugate match" and in fact there will be a "residual" reflected voltage of -jx/r times the incident voltage at a conjugate match. The only time the classical definition of rho and the reflected voltage is null is for an "image match" when the load equals the reference impedance.
:
:
Unless one changes ones definition of the reflected voltage/reflection coefficient to utilize the conjugate of the internal impedance as the "reference" impedance then the reflected voltage is not zero at a conjugate match. End of story.
[snip]

Regards,

--
Peter K1PO
Indialantic By-the-Sea, FL.

4237. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:42:57 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c000e$1_6@corp.newsgroups.com>
Source record: 109581

Jim Kelley wrote:
> Again, Born and Wolf disagree with Hecht. They define Reflectivity as
> being the square of the reflection coefficient.

From the IEEE dictionary: "reflectivity - The reflectance of the surface
of a material so thick that the reflectance does not change with increasing
thickness" Looks like Born and Wolf are wrong.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4238. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:49:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c01b1$1_6@corp.newsgroups.com>
Source record: 109583

kd1@sympatico.ca wrote:
> When excited by a sinusoid, no energy moves at the quarter wave points
> where the voltage or current is always 0.

You keep saying that and it keeps being a false statement. There is
absolutely nothing magic about sinusoids.

> "we know" is rather strong. I would strongly suggest that no energy
> crosses those points in the line where the voltage and current are
> always zero since p(t) is always zero at these points.

What about Ramo and Whinnery's forward Poynting vector and reflected
Poynting vector? Why do you choose to ignore them?

> Not necessarily. Only once the line has been charged, does the energy
> move back and forth between the quarter wave points, while not
> crossing them.

That has been shown to be a false assertion regarding component waves.
There is no impedance discontinuity to cause any reflections. Therefore,
the waves do not move back and forth. Do you really believe that the
energy in a bright interference ring is trapped inside the ring? Get
serious!
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4239. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:52:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c024f$1_6@corp.newsgroups.com>
Source record: 109584

kd1@sympatico.ca wrote:
> I do not see any flaw in step 7).

Try opening your eyes.

> If the rate of energy flowing is zero, then there is no energy
> flowing so there can not be any energy crossing the point.

There is no NET energy flow. There is plenty of component energy
flow as defined by Ramo & Whinnery's forward Poynting vector and
reflected Poynting vector. Why do you continue to ignore those
vectors? Why do you continue to ignore the wealth of knowledge
contained in light interference patterns?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4240. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 00:53:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <eiT2b.11396$jY2.6054@newsread1.news.atl.earthlink.net>
Source record: 109582

Ian:

[snip]
> The conventional approach based on voltage (or current) waves doesn't
> discard the phase information, but uses it to give a complete solution
> for every case. It is completely general, and that's precisely why
> engineers use it.
> --
> 73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
[snip]

I agree, you are absolutely right!

One should not take advice from the optics folks, simply because their instrumentation when compared to that of our RF types is defficient.

In our RF applications we have no difficulty making "coherent" measurements. We can measure and utilize all of the phase information relatively easily at RF frequencies.

The same is not true for optical frequencies. The laser was only invented a couple of decades ago... there are no optical phase locked loops even today, etc... Most optical folks use the incoherent "power" measurements only because of the great difficulty of making coherent phase measurements with optics.

Acutally the optics experimental folks have a lot to learn from we low frequency folks who have fully explored the use of coherent phase aware metrology!

I am afraid that Cecil has been seduced by the "age" of some of the optical publications into believing that the opticians are ahead of the elecricians, but that is simply not so... we electricians know lots more about wave dynamics than opticians.

Aside: With the singular exception of quantum mechanics, and quantum electrodynamics [QED] which of course at the low intensity photon-at-a-time level of interaction takes us miles away from waves and classical electrodynamics and into particles, entanglement, etc..

--
Peter K1PO
Indialantic By-the-Sea, FL.

4241. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 01:03:03 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c04c1$1_6@corp.newsgroups.com>
Source record: 109585

Peter O. Brackett wrote:
> I am afraid that Cecil has been seduced by the "age" of some of the optical
> publications into believing that the opticians are ahead of the elecricians,
> but that is simply not so... we electricians know lots more about wave
> dynamics than opticians.

So, Peter, what mechanism of physics causes the reversal in the momentum
of the reflected wave when a Z0-match exists?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4242. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 01:14:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <351okvcrh3e2s5dbns3tjopa4pn57m73lr@4ax.com>
Source record: 109586

On Wed, 27 Aug 2003 00:27:27 GMT, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Richard:
>
>[snip]
>> I know you eschew academic references in favor of "first principles,"
>> but others may want more material than the simple puzzle aspect.
>> They can consult "Transmission Lines & Networks," Walter C. Johnson,
>> Chapter 13, "Insertion Loss and Reflection Factors." But lest those
>> who go there for the answer, I will state it is from another
>> reference, Johnson simply is offered as yet another reference to
>> balance the commonly unstated inference of SWR mechanics being
>> conducted with a Z matched source. "Transmission Lines," Robert
>> Chipman is another (and not the source of the puzzle either).
>>
>> 73's
>> Richard Clark, KB7QHC
>[snip]
>
>I hear you...
>
>I don't eschew academic references, but when it comes to systems
>Engineering, I do try to follow what our great President Regan once said,
>"Trust, but Verify!"

Hi Peter,

I presume by this you have neither a solution nor an analysis by first
principles. Just as well, this stumper has baffled many. Two
resistors and a hank of line....

73's
Richard Clark, KB7QHC

4243. Re: MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 01:27:24 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <642okvg6e4lcbtpt6herc87nnovsj4ech8@4ax.com>
Source record: 109589

On Wed, 27 Aug 2003 07:59:39 -0500, Bob Miller
<bxmiller@texas.netNOSPAM> wrote:

>I'm tuning up a dipole with the 989c, using it for the first time in
>several years.
>
>Does maximum inductance occur with the reference counter at 000, and
>minimum inductance at 125?
>
>The MFJ manual I downloaded contradicts itself on this point, and I'd
>like to get it clear.

Not wanting to be facetious but have you thought to lift up the cover
and take a look?

Danny, K6MHE

4244. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 01:28:57 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <q92okvogt5bc1v4roqmgm1dtkp9833k7e8@4ax.com>
Source record: 109590

On Tue, 26 Aug 2003 17:17:08 -0700, <NN7K@reno.rmci.net> wrote:

>Word to the wise: sink a 8 FOOT ground rod!! Better to be safe than
>sorry-- Jim NN7K

An eight foot ground rod makes a lousy RF ground.

Danny, K6MHE

4245. Re: MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 01:35:17 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F4C0AD5.A1929944@cwis.net>
Source record: 109588

Bob,
The only sure way of telling is to take the lid off of
the tuner. The maximum inductance ~should~ be at the highest
reference number, but don't take that for granted.
'Doc

4246. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 01:45:36 UTC
From: kd1@sympatico.ca
Message-ID: <3F4C0D40.DF8FCBEB@sympatico.ca>
Source record: 109591

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > W5DXP wrote:
> > Actually, not. You continue to resist pointing out which step is wrong.
>
> You obviously have not read all of my replies.

On the contrary. But finally this one actually addresses
one of the steps rather than just attempting to show that that
conclusion is wrong.

> > Is it step 2)?
> > "2) At quarter wave points along this line, voltages and currents
> > which are always 0 can be observed -- the standing wave"
> >
> > This seems to be generally accepted.
>
> This is where your confusion starts. There are points where the
> NET voltage and NET current are zero. Those are merely the points
> where the forward Poynting vector and reflected Poynting vector
> are out of phase.

This emphasis on NET seems to be the place where the difficulties
begin. An (ideal) voltmeter placed at a voltage minima on the line
indicates a voltage of 0 volts. You appear to be saying that
despite this indication of 0, there is actually voltage present.

This contention leads to a number of questions related to voltmeters:
- when I use a voltmeter to measure the voltage in a circuit,
how do I know when an indication of 0 means 0?
- how do I know when an indication of 0 means there are
really a number of voltages which sum to 0?
- how do I determine what these voltages are which sum to 0?
- if it indicates other than 0, is it really indicating a
number of voltages which sum to the result?
- how do I determine what these voltages actually are?
- can voltmeters be trusted at all?
- when?

In my world, voltmeters indicate volts. There is no need for
second guessing.

Until this very fundamental difference is settled, there is
no value in examining the remaining steps.

...Keith

4247. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 02:01:02 UTC
From: kd1@sympatico.ca
Message-ID: <3F4C10DE.BC015B21@sympatico.ca>
Source record: 109592

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > When excited by a sinusoid, no energy moves at the quarter wave points
> > where the voltage or current is always 0.
>
> You keep saying that and it keeps being a false statement. There is
> absolutely nothing magic about sinusoids.

Seems to me that the sinusoidal standing wave with minima and maxima
at the quarter wave points can only arise with single frequency
sinusoidal excitation of the line. Are there other signals which
will produce this result?

> > "we know" is rather strong. I would strongly suggest that no energy
> > crosses those points in the line where the voltage and current are
> > always zero since p(t) is always zero at these points.
>
> What about Ramo and Whinnery's forward Poynting vector and reflected
> Poynting vector? Why do you choose to ignore them?

I haven't used them because I don't need them to arrive at an answer.
Basic electricity, a dash of circuit theory, a bit of knowledge of
trigonometry, some basic calculus and the ability to think is all
that is required.

Why make the solution more complex than necessary?
Just to scare off the neophyte?

> > Not necessarily. Only once the line has been charged, does the energy
> > move back and forth between the quarter wave points, while not
> > crossing them.
>
> That has been shown to be a false assertion regarding component waves.

Perhaps. Or maybe component waves are not the answer.

> There is no impedance discontinuity to cause any reflections. Therefore,
> the waves do not move back and forth.
> Do you really believe that the
> energy in a bright interference ring is trapped inside the ring? Get
> serious!

In this context, we are discussing transmission lines. I make NO
assertions about light, how rings happen, or don't, or whether the
theory and practice of optics is in way analogous to what happens
on a transmission line.

Transmission lines and their understanding can stand on their own
without the help of optics.

...Keith

4248. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 02:20:48 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030826222048.28531.00000815@mb-m18.aol.com>
Source record: 109593

>My wife gives me no respect, my sons give me no respect, the only
>respect I get is from the denziens of this Newsgroup, and even then it's
>only when I attempt to "terrorize" the group with tidbits of algebra! :-)
>
>What?
>
>--
>Peter K1PO
>Indialantic By-the-Sea, FL.
>

Canucks in exile rspect you tremendously. You would get even more respect if you can proclaim Indialantic new DXCC entity. Does it have to do anything with Indians, Indiana Jones, in Diana, Atlantis, dial, In Dial Antic or what?

Yuri da BUm in BMV (Buick really) by the see (if he can make it)

4249. 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 02:38:04 UTC
From: Mark Sheffield <sheffield@earthlink.net>
Message-ID: <ja6okvkd196k8c83bs4fspu7qih0kkbotp@4ax.com>
Source record: 109594

With the downturn in the solar cycle and worse days ahead, I'm faced with operating on the lower hf bands. 20M has gotten to be very hit or miss wrt propagation and it seems that more and more dx is happening on 40 (with some on 30). I have a 40M dipole up about 30 ft or so, but that really doesn't cut it.

I know that this is like a discussion about "what's the best color", but what antenna systems will work well on 40M, maybe even 80M, that I could mount either on the ground or up no higher than 30 ft? I need to at least get some general direction on this from an experiential data set rather than starting with the ads in QST or CQ.

Tnx - Mark Sheffield/N0LF

4250. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 02:42:06 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <i96okvknaptsifnc8ot69kujuoi3qtirgo@4ax.com>
Source record: 109595

On Tue, 26 Aug 2003 21:45:36 -0400, kd1@sympatico.ca wrote:

>
>This emphasis on NET seems to be the place where the difficulties
>begin. An (ideal) voltmeter placed at a voltage minima on the line
>indicates a voltage of 0 volts. You appear to be saying that
>despite this indication of 0, there is actually voltage present.
>

Hi Keith,

We covered this before. The NET 0 "could be" the result of a
bajillion volts and -bajillion volts. Now you couldn't possibly
ignore a bajillion volts now, could you? ALL things are possible when
we have a zero to rummage up arguments that revolve around what "could
be." It takes only a slight rhetorical slide to become "is."

You certainly would need a perfect voltmeter to withstand the
potential fields nearby. ;-)

73's
Richard Clark, KB7QHC

4251. Re: Small Directional Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 02:43:59 UTC
From: oldtime radio <nospam@spam.net>
Message-ID: <dn6okvcahnrdtn0786jibf8j1t3v8l1ant@4ax.com>
Source record: 109597

How about a Moxen rectangle? Very easy to build.
If you are familiar with the layout.....
900 MHz =
12 wire
Driven element length of 4.68" plus 'legs' of 0.56"
Reflectors element of 4.68" plus 'legs' of 0.91"
Gap between the 'legs' of 0.28"

If you're not familiar, do a Google search and you will probably find
a dimensions calculator. If not, tell me your exact frequency and
I'll calculate them for you.

OTR

On 26 Aug 2003 10:34:38 -0700, rjw01@yahoo.com (Ron) wrote:

>Want to make a small directional antenna in UHF bands- either a yagi
>or HB9CV or ??? Want the elements to be less than .5 WL. Anyone know
>how to center or end load elements so that width of antenna could
>collapse down to half to two-thirds the normal .5 WL? Perhaps some
>other antenna design would do it but element loading comes first to
>mind. Goal is VSWR of 1.5, a FB of 10db or better and beam width of
>+/- 20 to 30 degress. In the 900 mhz band would like to limit width
>to say 3 to 4 inches versus the nominal 6+. Any thoughts or directions
>to look? Thanks!

4252. How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 02:47:14 UTC
From: junkmail@altonillinois.com
Message-ID: <70729ae5.0308261847.71df2eae@posting.google.com>
Source record: 109596

On the surface, this sounds like a stupid question, but how do I know my shortwave wire dipole antenna is picking up all it can?

If I live in the St. Louis Missouri Area, is there a list of stations X, Y, and Z that I should be able to pick up? (thinking shortwave here, not local stations)

And if so, If I can pick up station A from Egypt, station B from Japan, and station C from Moscow, then I'm doing really good?

Just wondering.

Thanks..

4253. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 03:07:30 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030826230730.28426.00000793@mb-m18.aol.com>
Source record: 109598

>
>On the surface, this sounds like a stupid question, but how do I know
>my shortwave wire dipole antenna is picking up all it can?
>

Just look at ground around the antenna. If you do not see any stations rejected and dropped in the mud, then your antenna is doing fine job and picking up everything it can.

Get some books on antennas and propagation, it is fascinating reading and will answer many questions and provide food for some experimentation in your quest in hearing everything.

BUm

4254. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 03:10:55 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <of7okvo8f4j09qclknro873ucnbesbk7n3@4ax.com>
Source record: 109599

On 26 Aug 2003 19:47:14 -0700, junkmail@altonillinois.com (Walter) wrote:

>On the surface, this sounds like a stupid question, but how do I know
>my shortwave wire dipole antenna is picking up all it can?
>
>If I live in the St. Louis Missouri Area, is there a list of stations
>X, Y, and Z that I should be able to pick up? (thinking shortwave
>here, not local stations)
>
>And if so, If I can pick up station A from Egypt, station B from
>Japan, and station C from Moscow, then I'm doing really good?
>
>Just wondering.
>
>Thanks..

Hi Walter,

This is a tough nut to solve lacking comparisons.

So, it must be done by comparison. One way to judge band conditions is to maintain a log of familiar and fairly constant sources. Among those, WWV and WWVH (or CBUT in Canada, and other time signals throughout the world) offer that across many frequencies. However, this goes only so far unless you manage to DX those remote time standards (WWV is not very far away in the scope of things).

There are also stations known as beacons transmitting in the Amateur frequencies (as well as commercial beacons) that transmit for this very purpose. Use a web search engine to find beacon forecasting software (try using the term Tabor, who is one source).

All this aside, it says nothing of the inherent sensitivity (or lack of it) for your receiver. Barring your having been hit by high voltage due to a nearby strike of lightning, you stand every chance of having all that you are going to get (the receiver will be fairly deaf otherwise).

Right now I am listening to Radio New Zealand that comes in with broadcast quality, you may not be so lucky, but on the flip side, you may get Europe with far more ease than I do (the North magnetic Pole is the pits for the Pacific Northwest). VOA, BBC, CBC, Deutsche Welle, Radio Nederland (actually out of the Caribbean), Radio Habana, Radio South Africa, Radio Australia, HCJB, NHK, Radio Moscow, and others are also often quite strong. Get to know their schedules

through the day and night, and visit frequently while taking notes in a log. Patterns should begin to emerge (and then shift as the year progresses, and shift again as the sunspot numbers fall).

73's
Richard Clark, KB7QHC

4255. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 03:32:39 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308261932.7cca26e1@posting.google.com>
Source record: 109600

"Bob" <bob@agawamnet.com> wrote in message news:<zsScnc1c1qzTRtaiU-KYvg@comcast.com>...
> Any recommendations for an antenna to put in the attic for use with a
> bc895xlt scanner. Will be for general scanning and not on any particular
> frequency. Dimensions would be helpful if anyone has this.
>
> Bob

Radio shack discone? Fairly broadbanded...A simple ground plane will
work fairly well for most freq's. Depends on the range you want to
cover. A GP cut for hi-band VHF will do a passable job on UHF as a
psuedo 5/8 wave of sorts. Most public service signals are fairly
strong unless you are in the sticks, so it should't be real critical.
MK

4256. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 03:45:26 UTC
From: tdonaly@aol.com
Message-ID: <20030826234526.21977.00000954@mb-m07.aol.com>
Source record: 109601

>
> And why "Black-faced"?

It's a classical allusion - a test. You failed. Now I know
more about you.

>
> And many of the other "adults" in this NG act infantile IN THEIR
>OWN WAY.
>Witness how Roy will compare someone to his adolescent son, when they
>don't agreed with him. And then look at Cecil. Same sh**.
>

Classic case of projection.

>
> And you know, you could be a high-school drop out for all i care.
>The great thing about the NGs is that people don't judge you by your
>age or looks, only by what you write.

In that case, you're in trouble.

> If you wrote logically, like
>Richard, then i would respect you...but you don't. I don't care where
>Richard went to school, he knows his sh**.

Because you think he agreed with you.

Anyway, you've satisfied my curiosity. Thank you. If the other
members of the newsgroup want to read and respond to your posts,
fine. Most of us, though, went through middle school once and don't
want to repeat the experience. Good luck with your job search.
73,
Tom Donaly, KA6RUH

4257. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 04:09:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c3058_6@corp.newsgroups.com>
Source record: 109602

kd1@sympatico.ca wrote:
> This emphasis on NET seems to be the place where the difficulties
> begin. An (ideal) voltmeter placed at a voltage minima on the line
> indicates a voltage of 0 volts. You appear to be saying that
> despite this indication of 0, there is actually voltage present.

There are actually two voltages present of equal amplitude and
opposite phase. Their phasor sum is zero volts.

> - how do I determine what these voltages actually are?

|Vfwd| = Sqrt(Pfwd*Z0) |Vref| = Sqrt(Pref*Z0)

If the voltmeter reads zero, these two voltages are equal in magnitude
and opposite in phase. Do you know how to sum two phasor voltages?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4258. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 04:14:04 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c3187_6@corp.newsgroups.com>
Source record: 109603

kd1@sympatico.ca wrote:
> Seems to me that the sinusoidal standing wave with minima and maxima
> at the quarter wave points can only arise with single frequency
> sinusoidal excitation of the line. Are there other signals which
> will produce this result?

Probably not, but that makes sinusoids unique, not magic.

>>What about Ramo and Whinnery's forward Poynting vector and reflected
>>Poynting vector? Why do you choose to ignore them?
>
> I haven't used them because I don't need them to arrive at an answer.

You need them to keep from making the same mistakes over and over.

> Why make the solution more complex than necessary?
> Just to scare off the neophyte?

Nope, your solution is simple-minded.

> Perhaps. Or maybe component waves are not the answer.

Then go argue with Ramo & Whinnery.

> In this context, we are discussing transmission lines. I make NO
> assertions about light, how rings happen, or don't, or whether the
> theory and practice of optics is in way analogous to what happens
> on a transmission line.

You will never understand the present topic unless you understand that
EM wave interference doesn't affect the flow of energy in the individual
waves. That is true for light and RF.
--
73, Cecil http://www.qsl.net/w5dxp

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4259. Re: MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 04:17:49 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c3267$1_6@corp.newsgroups.com>
Source record: 109604

Bob Miller wrote:

> I'm tuning up a dipole with the 989c, using it for the first time in
> several years.
>
> Does maximum inductance occur with the reference counter at 000, and
> minimum inductance at 125?
>
> The MFJ manual I downloaded contradicts itself on this point, and I'd
> like to get it clear.

There are two configurations of MFJ-949E. The only way to tell the
difference is pop the lid. Probably the same for the 989c.
--
73, Cecil http://www.qsl.net/w5dxp

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------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4260. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 04:23:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c33b7_6@corp.newsgroups.com>
Source record: 109605

Richard Clark wrote:
> We covered this before. The NET 0 "could be" the result of a
> bajillion volts and -bajillion volts.

It could be but it's not. The NET 0 is the result of Pfwd=Pref
Thus, Sqrt(Pfwd*Z0) = Sqrt(Pref*Z0) and when they are 180 deg
out of phase, the net voltage is zero.
--
73, Cecil http://www.qsl.net/w5dxp

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4261. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 04:27:40 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4c34b8_6@corp.newsgroups.com>
Source record: 109606

W5DXP wrote:
> You will never understand the present topic unless you understand that
> EM wave interference doesn't affect the flow of energy in the individual
> waves. That is true for light and RF.

I should have added: "in the absence of a physical impedance discontinuity."
If a physical impedance discontinuity exists, then of course, the flow of
energy in the individual waves is affected by reflections.
--
73, Cecil http://www.qsl.net/w5dxp

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4262. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 05:04:53 UTC
From: KBa <kba@nic.fi>
Message-ID: <3F4C3BF5.70909@nic.fi>
Source record: 109607

Hi

One possible could be ground mounted vertical array.
There are triangle and quad (four "corner") constructions.
Triangle gives 6 switchable directions and some gain and FB but
requires radial wires to be effective.

QST Aug -72 had a quite extensive article of 7MHz triangle array.

73 Kari B

Mark Sheffield wrote:
> With the downturn in the solar cycle and worse days ahead, I'm faced
> with operating on the lower hf bands. 20M has gotten to be very hit
> or miss wrt propagation and it seems that more and more dx is
> happening on 40 (with some on 30). I have a 40M dipole up about 30 ft
> or so, but that really doesn't cut it.
>
> I know that this is like a discussion about "what's the best color",
> but what antenna systems will work well on 40M, maybe even 80M, that I
> could mount either on the ground or up no higher than 30 ft? I need
> to at least get some general direction on this from an experiential
> data set rather than starting with the ads in QST or CQ.
>
> Tnx - Mark Sheffield/N0LF

4263. Re: What is the best method of mounting a pvc-tube fitted Slim Jim?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 05:07:55 UTC
From: antennas@yahoo.com
Message-ID: <e8be44e3.0308262107.3abf1ea0@posting.google.com>
Source record: 109608

Just use a PVC elbow or "Tee" on bottom, then use another section of
PVC to mount to the mast using clamps. Works well and if you want use
some wood dowel inside for added strength.
Andrew VE8AE

"L. Overdulve" <luco.removethisfirst@chello.nl> wrote in message
news:<yBK2b.95735$JX1.18422425@amsnews02.chello.com>...
> Hi everyone!
>
> At last (after some years) I will build a weather protected Slim Jim,
> fitted into a pvc tube.
> I have found the right method of calculating the dimensions and I expect
> no problems so far.
> But...after all is done, the antenna will have to be mounted to the mast
> (metal). What is the best way of mounting such an antenna? I have
> searched the web, but I could not find anything.
>
> At this site
> (http://www.trival-antennas-masts.com/trival-com/Frames.htm) I found
> this mounting frame, but because it is made of a conducting material
> perhaps it is not a good idea...
> May be the pvc tube can be mouted directly to the mast using two of
> three giant cable ties, but perhaps this will put the antenna too close
> to the conducting mast...
>
> Thanks for thinking about this and thanks in advance!
>
> Luc

4264. Re: Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 05:23:15 UTC
From: antennas@yahoo.com
Message-ID: <e8be44e3.0308262123.474eee99@posting.google.com>
Source record: 109609

Thank you for the replies Gents. I am trying to get a handle on this modeling stuff and this helps. I will ask another!
Quote--
"Unless iron filings or crushed ferrite are mingled with the soil, the permeabilty of this 1-metre cube of space will be unity and can be ignored.
Such mixtures are not known in the natural world." -- unquote

I was in Iqaluit last year and when I put the Globalstar antenna on the ground the magnets picked up a huge amount of filings, like in high school when you did that magnet class. How would that affect your antenna? Having such a conductive ground would be good would it not? Better ground plane? Of note the rock all around that area was like that, huge iron content as it was orange like in it's colour.
Brings me to another question. To operate from a fjord like area on the bottom would really kill your signal would it not? The rocks would suck up all your sig with their high iron content would they not, and you would have a devil of a time getting over the top right?

Andrew VE8AE

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:<big90p$c1h$1@titan.btinternet.com>...
> Andrew, Just enter in EZNEC :
>
> Conductivity = 0.1 milli-Siemens,
>
> (Or Resistivity = 10,000 ohm-metres.)
>
> Permittivity, or dielectric constant K = 4,
>
> and you will get results just as accurate as EZNEC is able
> to provide with more usual values of ground 'constants'.
>
> At HF, in the case of granite, as discussed below, the
> controlling factor is permittivity K and any reasonable
> very high value for resistivity will suffice. Granite is a
> fairly low-loss material. Roy, you should have more
> confidence in your 'baby'.
>
> ----------
>
> Soil, or whatever you are blessed with, has an
> impedance Zs = Rs - jXs. It can be modelled to the
> first order of accuracy by a resistance in parallel

> with a capacitance.
>
> Rs and jXs are the equivalent series components.
>
> Soil resistivity is that measured between opposite
> faces of a 1-metre cube of the material. Easy to
> visualise and understand.
>
> Capacitance is that measured between a pair of
> 1-metre square plates spaced 1-metre apart,
> multiplied by the permittivity of the material.
>
> Unless iron filings or crushed ferrite are mingled with the soil, the
> permeabilty of this 1-metre cube of space will be unity and can be ignored.
> Such mixtures are not known in the natural world.
>
> Soil loss occurs due to current flowing in the soil
> through Rs. Note carefully that Rs, a series
> component, reduces as frequency increases. And
> so soil loss decreases with increasing frequency.
>
> Permittivity K increases fast with water content. In
> solid rock moisture content is negligible and K is
> that of the material itself, crudely 3 to 7. Mica is
> a rock, K = 7. Quartz, another rock, K = 4.
> Sahara sand has a lot of dry air in it, K = 3.
>
> Lumping all sorts of backyards together, soil impedance is resistive below 1
> or 2 MHz with a small -ve angle. Around 5 to 12 MHz impedance has an angle
> around 45 degrees. At 30 MHz impedance is that of a lossy capacitor, but
> low in value and therefore a good reflector. At VHF soil impedance is very
> low, has a high negative angle, and is an efficient low-loss reflector.
>
> The best reflectors are those with a small impedance magnitude relative to
> 377 ohms combined with an impedance angle approaching -90 degrees. The
> angle of incidence is also in there somewhere. But don't forget skin depth
> in the soil is quite shallow at VHF and only the top thin surface layer may
> be involved.
>
> If anybody intends to do any calculations it's far more convenient and
> meaningful to work in practical terms of ohm-metres. Milli-Siemens sounds
> pseudo-scientific and is not particularly impressive.
>
> The capacitance between two 1-metre square plates, spaced 1-metre apart, is
> 8.8 picofarads. Doesn't seem very much. But with an ordinary garden soil
> permittivity of 15, the impedance at 7 MHz is - j170 ohms. And with an
> ordinary garden soil resistivity of 170 ohms-metres we have an angle of -45
> degrees.
>
> Two programs, EARTHRES and RADIOETH may be of interest. Download in a few

> seconds from the following website and run immediately. In addition,
> program SOILSKIN, as may be expected, calculates skin depth in soil.
>
> ========================
> Regards from Reg, G4FGQ
> For Free Radio Design Software
> go to http://www.g4fgq.com
> ========================

4265. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 05:25:01 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkog59kp6i2n58@corp.supernews.com>
Source record: 109610

A simple test you can make is to tune to a frequency where there's no station, and disconnect the antenna from your radio. Repeat the test on various frequencies scattered around the range you listen on. If there's any frequency below about 30 MHz where the noise level doesn't drop when you disconnect the antenna, then you can benefit from antenna system improvements. These might involve an antenna tuner, lower loss feedline, another dipole or dipoles (which could share the same feedline), traps in your existing dipole, or some combination.

If the noise level drops at all frequencies when you disconnect the antenna, you can't improve the dipole itself except by making it higher. As a general rule, the higher you put it, the more it will favor distant stations and the less it will respond to noise (and signals) coming from lesser distances. You might benefit from something like a desktop loop which you can rotate to null out some particular source of noise coming from a single direction. And it's often possible to reduce locally generated noise without much effect on distant stations, if that's a problem. Other than that, the only improvement you can make is to make the antenna more directional. This would take a more elaborate antenna system than just a dipole, and it would have to be rotatable if you don't want some directions to suffer.

Roy Lewallen, W7EL

Walter wrote:
> On the surface, this sounds like a stupid question, but how do I know
> my shortwave wire dipole antenna is picking up all it can?
>
> If I live in the St. Louis Missouri Area, is there a list of stations
> X, Y, and Z that I should be able to pick up? (thinking shortwave
> here, not local stations)
>
> And if so, If I can pick up station A from Egypt, station B from
> Japan, and station C from Moscow, then I'm doing really good?
>
> Just wondering.
>
> Thanks..

4266. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 05:29:39 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkoge08ci1acc8@corp.supernews.com>
Source record: 109611

Hm, this has me puzzled. Assuming a purely real Z0, you're taking the square roots of two purely real quantities, each of which can have two values, and speaking of a phase angle between them. Where in the process did they pick up phase information? Or do you just mean when one is the negative of the other? If so, how do you tell -- each has two roots, that is, Sqrt(Pfwd*Z0) can be either positive or negative, and so can Sqrt(Pfref*Z0). How do you know when one is the negative of the other?

Roy Lewallen, W7EL

W5DXP wrote:
> Richard Clark wrote:
>
>> We covered this before. The NET 0 "could be" the result of a
>> bajillion volts and -bajillion volts.
>
>
> It could be but it's not. The NET 0 is the result of Pfwd=Pref
> Thus, Sqrt(Pfwd*Z0) = Sqrt(Pref*Z0) and when they are 180 deg
> out of phase, the net voltage is zero.

4267. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 06:16:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkoj6mc8617q0f@corp.supernews.com>
Source record: 109612

I read the analysis earlier, and didn't and don't see how it constitutes the proof I proposed.

Permit me to repeat the entirety of what I said, and not just the last sentence. I said:

> I'll restate something I mentioned before (first incorrectly, then
> corrected). Connecting a load to a transmission line which is the
> complex conjugate of the transmission line Z0 does *not* guarantee
> maximum power delivery from the source, or to the load. The load
> impedance which provides maximum load power is the complex conjugate of
> the impedance looking back from the load toward the source. That
> impedance is the source impedance transformed through the transmission
> line between source and load, and it's not generally the same as the
> line's Z0, or its complex conjugate. When this condition of maximum load
> power is met, there will almost certainly be voltage and current wave
> reflections on the line -- there would be none only if the optimum load
> impedance coincidentally happened to be equal to the line Z0. So the
> argument that there can be no reflection of the voltage wave under the
> condition of maximum power transfer is wrong.
>
> You didn't show differently in your analysis, and no one has stepped
> forward with a contrary proof, derivation from known principles, or
> numerical example that shows otherwise.
>

Now let's see if this constitutes such a proof.

Peter O. Brackett wrote:
> Roy:
>
> [snip]
>
>>You didn't show differently in your analysis, and no one has stepped
>>forward with a contrary proof, derivation from known principles, or
>>numerical example that shows otherwise.
>>
>>Roy Lewallen, W7EL
>
> [snip]
>
> Yes I did. I guess that you missed that post.
>
> I'll paste a little bit of that posting here below so that you can see it
> again.

>
> [begin paste]
> We are discussing *very* fine points here, but...
>
> [snip]
> ratio of the reflected to incident voltage as rho = b/a would yeild the
> usual formula:
>
> rho = b/a = (Z - R)i/(Z + R)i = (Z - R)/(Z+ R).

Here I'll assume that you've defined a and b as equalling the forward
and reverse voltages in a transmission line, which is a different
definition than in your other posting. With that definition of a and b,
and if R is the transmission line characteristic impedance, then the
equation is valid for a transmission line, and ok so far. Otherwise,
you're talking about something other than a transmission line, so the
"proof" doesn't apply at all.

> In which no conjugates appear!
>
> Now if we take the internal/reference impedance R to be complex as R = r +
> jx then for a "conjugate match" the unknown Z would be the conjugate of the
> internal/reference impedance and so that would be:
>
> Z = r - jx

So the load impedance is the complex conjugate of the transmission line
characteristic impedance. Ok.

>
> Thus the total driving point impedance faced by the incident voltage a would
> be 2r:
>
> R + Z = r + jx + r - jx = 2r

Here you've lost me. a is the forward voltage in the transmission line.
What can be the meaning of its facing a driving point impedance? The
forward wave sees only the characteristic impedance of the line; at all
points the ratio of forward voltage to forward current is simply the Z0
of the line. So I don't believe that it sees 2r anywhere.

This is where I'm stuck. If you can show where along the line the
forward voltage wave "faces" 2r, that is, Vf/If = 2r, I can continue.

>. . .

Roy Lewallen, W7EL

4268. Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 06:18:09 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308262218.7e553fd5@posting.google.com>
Source record: 109613

Hello,

Actually, my first posting:

Reflection Coefficient =(Zload-Zo)/(Zload+Zo)

was right all along, if Zo is always purely real. No argument there.

However, from Les Besser's Applied RF Techniques:

"For passive circuits, 0<=[rho]<=1,

And strictly speaking:

Reflection Coefficient =(Zload-Zo*)/(Zload+Zo)
Where * indicates conjugate.

But MOST of the literature assumes that Zo is real, therefore
Zo*=Zo."

This is why most of you know the "normal" equation.

And then i looked at the trusty ARRL handbook, 1993, page 16-2,
and lo and behold, the reflection coefficient equation doesn't have a
term for line reactance, so both this book and Pozar have indeed
assumed that the Zo will be purely real.

Here's a website that describes the general conjugate equation:

http://www.zzmatch.com/lcn.html

Additionally, the Kurokawa paper ("Power Waves and the
Scattering Matrix") describes the voltage reflection coefficient
as the same conjugate formula, but he rather foolishly calls it a
"power wave R. C.", which when the magnitude is squared, becomes the
power R. C.

Email me for the paper.

As Reg points out about the "normal" equation:

"Dear Dr Slick, it's very easy.

Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.

(then use ZL=10+j250)

Magnitude of Reflection Coefficient of the load, ZL, relative to line
impedance

= (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,

and has an angle of -59.9 degrees.

The resulting standing waves may also be calculated.

Are you happy now ?"

Reg, G4FGQ

Well, I was certainly NOT happy at this revelation, and researched it until i understood why the normal equation could incorrectly give a R.C.>1 for a passive network (impossible).

If you try the calculations again with the conjugate formula, you will see that you can never have a [rho] (magnitude of R.C.) greater than 1 for a passive network. You need to use the conjugate formula if Zo is complex and not purely real.

How could you get more power reflected than what you put into a passive network(do you believe in conservation of energy, or do you think you can make energy out of nothing)? If you guys can tell us, we could fix our power problems in CA!

Thanks to Reg for NOT trusting my post, and this is a subtle detail that is good to know.

Slick

4269. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 06:40:34 UTC
From: Ken Fowler <ko6no@yahoo.com>
Message-ID: <zpKdnek_S7D_z9GiU-KYuQ@comcast.com>
Source record: 109614

On 26-Aug-2003, junkmail@altonillinois.com (Walter) wrote:

> On the surface, this sounds like a stupid question, but how do I know
> my shortwave wire dipole antenna is picking up all it can?

One indication of your antenna's effectiveness (on HF) is if the receiver's noise output increases
when the antenna is connected. If so, the antenna is providing enough signal to overcome the
receiver's internal noise. Effectiveness on a particular station's strength can only be judged by
comparison with another antenna at the same site or with another receiver and antenna at a nearby
site. What you may be able to hear at a given time on a given frequency depends a lot on antenna
directivity and propagation.

-ken-

4270. Re: Small Directional Antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 07:17:41 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0308262317.4f2067c3@posting.google.com>
Source record: 109615

Hi,
the Moxon rectangle may really be the right solution. See
http://www.cebik.com/moxpage.html for more info and
http://www.cebik.com/moxgen.html for the formulae and a simple Basic
program.

BR from Ivan

4271. BPL industry take on why power lines are not antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 11:19:28 UTC
From: w1rfi@aol.com
Message-ID: <20030827071928.18164.00000013@mb-m06.aol.com>
Source record: 109616

These are the reply comments of Ameren Energy Corporation:

http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514683314

They outline why power lines are excellent RF transmission lines that radiate only at points of "discontinuity."

And, for those that may wonder: there was a typo in the formula, but the calculations that follow had been done correctly. (Too bad they used the typo to do all of their calculations incorrectly...)

I re-ran the antenna models and easily found the gain that the ARRL paper had documented. (The easiest wa to do that is to run a 3 D model in EZW, then check the box for a 2D display. It will display the plot of maximum gain). Maybe they can sign up for the ARRL modeling course.

Those that want an easy list of the links to the industry and organizational filings on BPL can go to:

http://www.arrl.org/~ehare/bpl/hyperlinks.html

73,
Ed Hare, W1RFI

4272. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 12:01:40 UTC
From: richardharrison@webtv.net
Message-ID: <23411-3F4C9DA4-21@storefull-2314.public.lawson.webtv.net>
Source record: 109617

I wrote:
"As energy can`t be destroyed it had to be reflected by a hard short or open." Keith replied:
"Or just stopped and stored."

Wave energy is energy in motion. No motion, no waves.

Keith also wrote:
"All of this is easily visualized by observing the amplitude of the P(t) function at various points along the line."

Power as a function of time has the same amplitude in the forward wave everywhere along the line. Same is true of the reflected wave. Interference as demonstrated by standing waves has no effect on this.

Keith wrote:
"I would strongly suggest that no energy crosses these points in the line where the voltage and current are always zero since p(t) is always zero."

See my comment above on power as a function of time. Keith erred in saying "points in the line where the voltage and current are always zero", as where SWR volts are zero, amps are max, and vice versa.

I wrote:
"If energy were turned around before it reached the end of the line, nulls more distant from the source than the turnaround point would not exist."

Keith wrote:
"Not so,---."

There is no argument that can make wave interference where there are no waves. In a lossless line, pre-existing waves could circulate forever. But, our discussion relates to effects on actual lines.

Keith wrote:
"Try visualizing how a step function charges the line."

Totally irrelevant. SWR nulls are the result of phase opposition at specific points produced by alternating waves. A step function changes only when it starts or stops. Only during the changes does Zo apply unless a line is terminated in its Zo. In this case there`s no reflected wave to make a null. As Reg once said, "If your line were infinite in length, you could measure Zo with your ohmmeter.

Best regards, Richard Harrison, KB5WZI

4273. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 12:37:15 UTC
From: richardharrison@webtv.net
Message-ID: <1973-3F4CA5FB-12@storefull-2317.public.lawson.webtv.net>
Source record: 109519

Keith wrote:
"I do not find that step 7) is in error."

Step 7) declares power is zero at quarter wave points where volts or amps are zero in the standing wave pattern.

Power flow does not stop at an actual short or open in a line. It merely changes direction. At zero volt or amp points, where there is no actual short or open, no reversal of direction occurs. Power flow is affected in no way by standing wave nulls or maxima where no impedance discontinuity exists.

Energy exists in every SWR null. It is in the two waves which produce the null as these experience no change in energy due to standing waves.

Best regards, Richard Harrison, KB5WZI

4274. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 12:40:40 UTC
From: Jim Leder <jleder@cinci.rr.com>
Message-ID: <p59pkv4b4ug0e39c1300k67k6lbkd0j9p3@4ax.com>
Source record: 109618

If you have the horizontal room (70 feet, sounds like you might) and at least 35 feet up, why not a Half Square for 40? Doesn't need radials, it's an 'upside down' phased vertical array with some gain and a good TOA. Be aware however, it is somewhat directional. Easy to make on your own, also cheap and there is a lot of info on the Web. I have one for 20 meters (very modest with the antennas here) and it works a lot better than my R5 vertical and full sized G5RV.

4275. MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 12:59:39 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <19apkvsl01ke7rmeqge8sj4ooo0uhdjfvf@4ax.com>
Source record: 109587

I'm tuning up a dipole with the 989c, using it for the first time in several years.

Does maximum inductance occur with the reference counter at 000, and minimum inductance at 125?

The MFJ manual I downloaded contradicts itself on this point, and I'd like to get it clear.

Thanks,

Bob
k5qwg

4276. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 13:01:48 UTC
From: richardharrison@webtv.net
Message-ID: <1976-3F4CABBC-4@storefull-2317.public.lawson.webtv.net>
Source record: 109521

Keith wrote:
"-how do I determine what these voltages actually are?"

You measure the power in either direction using a wattmeter containing a directional coupler. The volts, amps, and power flowing each direction are the same. That`s why you have zeros.

Then, P = Esquared / Zo, so E = sq rt (P)(Zo)

Best regards, Richard Harrison, KB5WZI

4277. Re: MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 13:32:17 UTC
From: John Passaneau <jxp16@psu.edu>
Message-ID: <biibsvjdu1@f04n12.cac.psu.edu>
Source record: 109522

It at the lowest inductance if I understand your description. The rolling
tap has shorted out the inductor at that point.

--
John Passaneau, W3JXP
Physics Dept. Electronics Shop
Penn State University
104 Davey Lab, University Park , Pa. 16802
814.863.4297, jxp16@psu.edu

"Bob Miller" <bxmiller@texas.netNOSPAM> wrote in message
news:uqjqkvo2uck6vhoj1jotqg5teb0b37qg13@4ax.com...
> On Tue, 26 Aug 2003 23:17:49 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> wrote:
>
> >Bob Miller wrote:
> >
> >> I'm tuning up a dipole with the 989c, using it for the first time in
> >> several years.
> >>
> >> Does maximum inductance occur with the reference counter at 000, and
> >> minimum inductance at 125?
> >>
> >> The MFJ manual I downloaded contradicts itself on this point, and I'd
> >> like to get it clear.
> >
> >There are two configurations of MFJ-949E. The only way to tell the
> >difference is pop the lid. Probably the same for the 989c.
>
> Okay, popped the lid.
>
> One end of the roller inductor is grounded, as is the rolling tap. The
> other end of the inductor connects to the variable capacitors. When
> the counter registers "000", the rolling tap is at the end of the
> inductor connected to the caps. This would be maximum inductance?
>
> Bob
> k5qwg
>
>

4278. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 13:38:52 UTC
From: richardharrison@webtv.net
Message-ID: <4533-3F4CB46C-14@storefull-2313.public.lawson.webtv.net>
Source record: 109523

Keith wrote:
"Are there other signals which would produce this result?"

A short-circuit produces a voltage inversion. The plus volts and the minus volts make a zero in a short.

Imagine a couple of identical positive pulses separated by some distance and traveling in the same direction along a long transmission line which has a short approached by the pulses. When the first pulse hits the short it is inverted and reflected to travel back toward its source as a minus voltage pulse.

When the first pulse encounters the second pulse they disappear at the instant of coincidence, but otherwise, travel on their merry ways. What happens at coincidence is transfer of the energy associated with volts to the energy wave associated with amps as energy can`t be obliterated while the volts disappear.

Best regards, Richard Harrison, KB5WZI

4279. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 14:13:48 UTC
From: richardharrison@webtv.net
Message-ID: <4533-3F4CBC9C-16@storefull-2313.public.lawson.webtv.net>
Source record: 109525

I wrote:
"E = sq rt (P)(Zo)"

Some may not realize that E is an rms value. Keith early in the thread was inserting instantaneous volts which can be an infinite range of values as they may be taken at any point in a cycle for evaluation. I agree with Cecil`s "tits on a boar hog" characterization of value in transmission line problem utility.

Best regards, Richard Harrison, KB5WZI

4280. Re: Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 14:37:48 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <biifns$qf8$1@titan.btinternet.com>
Source record: 109524

Andrew, Just enter in EZNEC :

Conductivity = 0.1 milli-Siemens,

(Or Resistivity = 10,000 ohm-metres.)

Permittivity, or dielectric constant K = 4,

and you will get results just as accurate as EZNEC is able
to provide with more usual values of ground 'constants'.

At HF, in the case of granite, as discussed below, the
controlling factor is permittivity K and any reasonable
very high value for resistivity will suffice. Granite is a
fairly low-loss material. Roy, you should have more
confidence in your 'baby'.

Soil, or whatever you are blessed with, has an
impedance Zs = Rs - jXs. It can be modelled to the
first order of accuracy by a resistance in parallel
with a capacitance.

Rs and jXs are the equivalent series components.

Soil resistivity is that measured between opposite
faces of a 1-metre cube of the material. Easy to
visualise and understand.

Capacitance is that measured between a pair of
1-metre square plates spaced 1-metre apart,
multiplied by the permittivity of the material.

Unless iron filings or crushed ferrite are mingled with the soil, the
permeabilty of this 1-metre cube of space will be unity and can be ignored.
Such mixtures are not known in the natural world.

Soil loss occurs due to current flowing in the soil
through Rs. Note carefully that Rs, a series
component, reduces as frequency increases. And
so soil loss decreases with increasing frequency.

Permittivity K increases fast with water content. In
solid rock moisture content is negligible and K is
that of the material itself, crudely 3 to 7. Mica is
a rock, K = 7. Quartz, another rock, K = 4.
Sahara sand has a lot of dry air in it, K = 3.

Lumping all sorts of backyards together, soil impedance is resistive below 1 or 2 MHz with a small -ve angle. Around 5 to 12 MHz impedance has an angle around 45 degrees. At 30 MHz impedance is that of a lossy capacitor, but low in value and therefore a good reflector. At VHF soil impedance is very low, has a high negative angle, and is an efficient low-loss reflector.

The best reflectors are those with a small impedance magnitude relative to 377 ohms combined with an impedance angle approaching -90 degrees. The angle of incidence is also in there somewhere. But don't forget skin depth in the soil is quite shallow at VHF and only the top thin surface layer may be involved.

If anybody intends to do any calculations it's far more convenient and meaningful to work in practical terms of ohm-metres. Milli-Siemens sounds pseudo-scientific and is not particularly impressive.

The capacitance between two 1-metre square plates, spaced 1-metre apart, is 8.8 picofarads. Doesn't seem very much. But with an ordinary garden soil permittivity of 15, the impedance at 7 MHz is - j170 ohms. And with an ordinary garden soil resistivity of 170 ohms-metres we have an angle of -45 degrees.

Two programs, EARTHRES and RADIOETH may be of interest. Download in a few seconds from the following website and run immediately. In addition, program SOILSKIN calculates skin depth in soil.

==========
Regards from Reg, G4FGQ
For Free Radio Design Software
go to http://www.g4fgq.com
==========

4281. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 14:57:32 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <wF33b.274934$Ho3.36384@sccrnsc03>
Source record: 109526

What is missing here, IMO, is that the physics of energy flow has not been adequately explained. Cecil provided a reference to it but did not elaborate for the general readership.

The energy in forward and reflected waves has been well documented for many years. From Kraus, Electromagnetics, McGraw Hill, 1953, Chapter 9, Section 9-13, "Energy Relations in a Standing Wave":

EQ 9-145 We = 2eEo^2[cos^2wt*sin^2Bx]

EQ 9-147 Wm = 2uHo^2[sin^2wt*cos^2Bx]

Note: The energy in the E field [We] is a function of the sin^2(Bx). The energy in the H field [Wm] is a function of the cos^2(Bx).

You will remember from trigonometry the the maxima [or minima] of a sin and cos are displaced by 90 degrees. Conclusion: when the E field is zero the H field is maximum; when the H field is zero the E field is maximum. Ergo! Energy is conserved and propagates through the zero E field as an H field; also, when the H field is zero the energy is in the E field. This is what Cecil is referring to when he refers to the Poynting vector.

It is analogous to a parallel tuned circuit. When the instantaneous voltage across the capacitor is zero we don't claim there is no energy in the circuit. We know that the energy is stored in the inductor. Conversely, when the instantaneous current in the inductor is zero we don't claim there is no energy in the circuit. We know the energy is stored in the capacitor.

In a TEM wave the energy cycles between the E field and the H field and the energy components are 90 degrees out of phase.

Deacon Dave, W1MCE

4282. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 15:04:01 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4cc9de_4@corp.newsgroups.com>
Source record: 109527

Roy Lewallen wrote:
> Hm, this has me puzzled.

:-) Good one, Roy. :-)

> Assuming a purely real Z0, you're taking the
> square roots of two purely real quantities, each of which can have two
> values, and speaking of a phase angle between them. Where in the process
> did they pick up phase information? Or do you just mean when one is the
> negative of the other? If so, how do you tell -- each has two roots,
> that is, Sqrt(Pfwd*Z0) can be either positive or negative, and so can
> Sqrt(Pfref*Z0). How do you know when one is the negative of the other?

V^2/Z0=P is a well known equation (so is I^2*Z0=P). These are *RMS* values.
So the RMS voltage is V = Sqrt(Pfwd*Z0). Root Mean Square AC voltages are
equivalent to DC voltages in power dissipation and are generally considered
to be positive values because they are the sum of squared terms. We can turn
those RMS voltages into phasors by adding the phase angles. When Vfwd+Vref = Vmax,
Vfwd and Vref are in phase (at the SWR voltage maximum point). When Vfwd+Vref = Vmin,
Vfwd and Vref are 180 degrees out of phase (at the SWR voltage minimum point).
Vmax/Vmin = VSWR. Please feel free to pull my leg again anytime. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4283. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 15:14:24 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4ccc4d_4@corp.newsgroups.com>
Source record: 109528

kd1@sympatico.ca wrote:
>>What about Ramo and Whinnery's forward Poynting vector and reflected
>>Poynting vector? Why do you choose to ignore them?
>
> I haven't used them because I don't need them to arrive at an answer.

Yes, but you need them to arrive at the correct answer. :-)

> Basic electricity, a dash of circuit theory, a bit of knowledge of
> trigonometry, some basic calculus and the ability to think is all
> that is required.

Apparently, that is not all that is required. Here's a neat web page
that will allow you to visualize what is happening. Note the forward
and reflected waves do not change energy or momentum at a zero
voltage point.

http://www.gmi.edu/~drussell/Demos/superposition/superposition.html#standing
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4284. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 15:50:24 UTC
From: NN7K@reno.rmci.net
Message-ID: <7h43b.1539$xD2.505@fe01.atl2.webusenet.com>
Source record: 109529

You are absolutly right, but, so does a deeply buried long ground! Better
to run copper wires buried shallow then try to use water pipes, in my book
Jim NN7K

"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
news:q92okvogt5bc1v4roqmgm1dtkp9833k7e8@4ax.com...
> On Tue, 26 Aug 2003 17:17:08 -0700, <NN7K@reno.rmci.net> wrote:
>
> >Word to the wise: sink a 8 FOOT ground rod!! Better to be safe than
> >sorry-- Jim NN7K
>
> An eight foot ground rod makes a lousy RF ground.
>
> Danny, K6MHE
>

4285. Re: Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 15:55:18 UTC
From: richardharrison@webtv.net
Message-ID: <4533-3F4CD466-25@storefull-2313.public.lawson.webtv.net>
Source record: 109530

Andrew, VE8AE wrote:
"To operate from a fjord like area on the bottom would really kill your signal would it not?"

Assumining Andrew does not mean the bottom of the water, it depends on the width, length, and depth of the crevice.

I once rafted down the Colorado River between the walls of the Grand Canyon. It is between 4 and 13 miles wide at its brim. It is from 4000 to 5,500 ft. deep and over 200 miles long with lots of twists and turns.

Medium Wave reception was near zero, but shortwave reception was just fine in most places along the canyon floor.

Best regards, Richard Harrison, KB5WZI

4286. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 16:10:15 UTC
From: richardharrison@webtv.net
Message-ID: <4533-3F4CD7E7-28@storefull-2313.public.lawson.webtv.net>
Source record: 109532

Keith wrote:
"Basic electricity, a dash of circuit theory, a bit of knowledge of trigonometry, some basic calculus, and the ability to think is all that is required."

An electrical education limited to d-c familiarity leads to mistaken assumptions when dealing with a-c in Keith`s case it seems.

Best regards, Richard Harrison, KB5WZI

4287. Re: Ground losses

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 16:35:39 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <biimkqkdd1@hercules.btinternet.com>
Source record: 109531

It seems iron, in its magnetic form, is a little more common in soil than I thought.

As just described, our 1-metre cube of space containing garden soil has higher values of conductivity and permittivity than an empty space. When associated with a grounding system the effect of increased permittivity is to much reduce the velocity of propagation of em waves through the soil and along any wires buried in it.

A quarter-wave of buried wire may have a physical length only 1/6th of a quarter-wave of wire in free space. The velocity along a radial wire just lying on the surface of good soil is reduced to only 1/2 of the free-space value and should be pruned accordingly. Old-wives and Handbook editors please note.

A high content of magnetic iron in the soil would reduce propagation velocity further still in the proportion 1/Sqrt(Mu). How this would change the loss-distributing effectiveness of radial wires I have no idea. My back yard contains no iron and I have no intention to dig in 10 or 20 tons of iron filings just to see what happens on the S-meter.

Reg, G4FGQ

4288. Re: MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 16:56:49 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308270856.33e67cea@posting.google.com>
Source record: 109533

"John Passaneau" <jxp16@psu.edu> wrote in message
news:<biibsvjdu1@f04n12.cac.psu.edu>...
> It at the lowest inductance if I understand your description. The rolling
> tap has shorted out the inductor at that point.
>

With mine, 000 is the lowest inductance. But mine is an older 989c.
They may vary. Try tuning 10m. If it's tuning near the 000 end, thats
min inductance.
MK

4289. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 17:23:04 UTC
From: KA9CAR <ka9car@a_r_r_l_.net>
Message-ID: <biipdo$1f10$1@news1.tribune.com>
Source record: 109534

A horizontal Loop at low elevation can be an effective low angle radiator
when it is more than 2 wavelengths around.

I had a loop running around trees in my yard, irregular shape and random
length (210 feet), fed it with 300 ohm tv line. It worked quite well. At
its highest point it was under 30 feet and it was at 20 feet on two corners.
I even loaded it up on 160 and worked both coasts from here in Chicago with
100 watts.

Read up on the topic at
http://www.cebik.com/atl1.html

He has lots of other interesting antenna articles on that site, just stop
the address at the com/ to see the list.

KA9CAR
John

"Mark Sheffield" <sheffield@earthlink.net> wrote in message
news:ja6okvkd196k8c83bs4fspu7qih0kkbotp@4ax.com...
> With the downturn in the solar cycle and worse days ahead, I'm faced
> with operating on the lower hf bands. 20M has gotten to be very hit
> or miss wrt propagation and it seems that more and more dx is
> happening on 40 (with some on 30). I have a 40M dipole up about 30 ft
> or so, but that really doesn't cut it.
>
> I know that this is like a discussion about "what's the best color",
> but what antenna systems will work well on 40M, maybe even 80M, that I
> could mount either on the ground or up no higher than 30 ft? I need
> to at least get some general direction on this from an experiential
> data set rather than starting with the ads in QST or CQ.
>
> Tnx - Mark Sheffield/N0LF

4290. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 17:34:27 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <9bKdnTq44-s1dtGiXTWJiQ@comcast.com>
Source record: 109535

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308262218.7e553fd5@posting.google.com...
> As Reg points out about the "normal" equation:
>
>
> "Dear Dr Slick, it's very easy.
>
> Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.
>
> (then use ZL=10+j250)
>
> Magnitude of Reflection Coefficient of the load, ZL, relative to line
> impedance
>
> = (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,
>
> and has an angle of -59.9 degrees.
>
> The resulting standing waves may also be calculated.
>
> Are you happy now ?"
> ---
> Reg, G4FGQ
>
>
>
> Well, I was certainly NOT happy at this revelation, and researched
> it until i understood why the normal equation could incorrectly give
> a R.C.>1 for a passive network (impossible).

According to Adler, Chu, and Fano, "Electromagnetic Energy Transmission and Radiatin", John Wiley, 1960, (60-10305),
when they talk about lossy lines, and say that Zo is complex in the general case, they come up with a maximum value for the reflection coefficient of (1 + SQRT(2)). Eq 5.14b. Remember, it is a lossy line; so, the reflected voltage gets smaller as you move away from the load. Somebody might want to check this out, in case I misunderstood something. BTW, the three authors were all MIT profs.

Tam/WB2TT

4291. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 17:46:35 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4CEE7B.A583B281@uci.edu>
Source record: 109536

W5DXP wrote:
> Looks like Born and Wolf are wrong.

Not bloody likely.

ac6xg

4292. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 18:25:06 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkpts5pianfn98@corp.supernews.com>
Source record: 109537

The problem is in leaping to the conclusion that a reflection coefficient greater than one means that more energy is coming back from the reflection point than is incident on it. It's an easy conclusion to reach if your math skills are inadequate to do a numerical analysis showing the actual power or energy involved, or if you have certain misconceptions about the meaning of "forward power" and "reverse power". But it's an incorrect conclusion. Then, having come to the wrong conclusion, the search is on for ways to modify the reflection coefficient formula so that a reflection coefficient greater than one can't happen and thereby disturb the incorrect view of energy movement. It's simply an example of faulty logic combined with an inability to do the math. Adler, Chu, and Fano do understand the law of conservation of energy, and they are able to do the math.

Roy Lewallen, W7EL

Tarmo Tammaru wrote:
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308262218.7e553fd5@posting.google.com...
>
>> As Reg points out about the "normal" equation:
>>
>>
>> "Dear Dr Slick, it's very easy.
>>
>>Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.
>>
>>(then use ZL=10+j250)
>>
>>Magnitude of Reflection Coefficient of the load, ZL, relative to line
>>impedance
>>
>>= (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,
>>
>>and has an angle of -59.9 degrees.
>>
>>The resulting standing waves may also be calculated.
>>
>>Are you happy now ?"
>>---
>>Reg, G4FGQ
>>
>>
>>
>> Well, I was certainly NOT happy at this revelation, and researched

>>it until i understood why the normal equation could incorrectly give
>>a R.C.>1 for a passive network (impossible).
>
>
> According to Adler, Chu, and Fano, "Electromagnetic Energy Transmission and
> Radiatin", John Wiley, 1960, (60-10305),
> when they talk about lossy lines, and say that Zo is complex in the general
> case, they come up with a maximum value for the reflection coefficient of (1
> + SQRT(2)). Eq 5.14b. Remember, it is a lossy line; so, the reflected
> voltage gets smaller as you move away from the load. Somebody might want to
> check this out, in case I misunderstood something. BTW, the three authors
> were all MIT profs.
>
> Tam/WB2TT
>
>

4293. Re: What is the best method of mounting a pvc-tube fitted Slim Jim?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 18:49:54 UTC
From: Jimmy <Gfender@carolina.rr.com>
Message-ID: <m373b.23073$J16.1383703@twister.southeast.rr.com>
Source record: 109538

My expeience with using T's and elbos with PVC is that it weakens the structure. Dont really like PVC for doing what you are talking about and prefer to design antennas that will be self supporting and cand withstand the elements. That being said, There are PVC couplings designed for transistioning from threaded metal pipe to PVC . For a while I had an antenna similar to your discription that was set uo as follows. 2 inch galvanized pipe for a mast, pull box on top of that ,2 meter colinear array above that in PVC. Feed line entered through a compression fitting in the cover of the pull box. This worked well for about 2 years then the sun began to cause severe deterioration of the PVC.

"VE8AE Andrew" <antennas@yahoo.com> wrote in message
news:e8be44e3.0308262107.3abf1ea0@posting.google.com...
> Just use a PVC elbow or "Tee" on bottom, then use another section of
> PVC to mount to the mast using clamps. Works well and if you want use
> some wood dowel inside for added strength.
> Andrew VE8AE
>
>
>
> "L. Overdulve" <luco.removethisfirst@chello.nl> wrote in message
news:<yBK2b.95735$JX1.18422425@amsnews02.chello.com>...
> > Hi everyone!
> >
> > At last (after some years) I will build a weather protected Slim Jim,
> > fitted into a pvc tube.
> > I have found the right method of calculating the dimensions and I expect
> > no problems so far.
> > But...after all is done, the antenna will have to be mounted to the mast
> > (metal). What is the best way of mounting such an antenna? I have
> > searched the web, but I could not find anything.
> >
> > At this site
> > (http://www.trival-antennas-masts.com/trival-com/Frames.htm) I found
> > this mounting frame, but because it is made of a conducting material
> > perhaps it is not a good idea...
> > May be the pvc tube can be mouted directly to the mast using two of
> > three giant cable ties, but perhaps this will put the antenna too close
> > to the conducting mast...
> >
> > Thanks for thinking about this and thanks in advance!
> >
> > Luc

4294. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 19:21:31 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bij0br$q2p$1@titan.btinternet.com>
Source record: 109539

> According to Adler, Chu, and Fano, "Electromagnetic Energy Transmission
and
> Radiatin", John Wiley, 1960, (60-10305),
> when they talk about lossy lines, and say that Zo is complex in the
general
> case, they come up with a maximum value for the reflection coefficient of
(1
> + SQRT(2)).
> Tam/WB2TT
==========

How convincing are A, C and F? Nobody's ever heard of 'em. What makes you think the trio are right? Or have you worked it out for yourself?

Reminds me of the advert "Can 1 million housewives be wrong ?" (in their choice of bathroom cleaner). ;o)

By the way, you've told us only half the story. What's the value of the load impedance which maximises the reflection coefficient?

Regards, Reg, G4FGQ.

4295. Re: What is the best method of mounting a pvc-tube fitted Slim Jim?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 19:23:34 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <5P2dnYe2Q5ucm9CiU-KYuA@ctc.net>
Source record: 109540

> My expeience with using T's and elbos with PVC is that it weakens the
> structure. Dont really like PVC for doing what you are talking about and
> prefer to design antennas that will be self supporting and cand withstand
> the elements. That being said, There are PVC couplings designed for
> transistioning from threaded metal pipe to PVC . For a while I had an
> antenna similar to your discription that was set uo as follows. 2 inch
> galvanized pipe for a mast, pull box on top of that ,2 meter colinear
array
> above that in PVC. Feed line entered through a compression fitting in the
> cover of the pull box. This worked well for about 2 years then the sun
began
> to cause severe deterioration of the PVC.
>

PVC pipe is not made for use in the sun. The UV rays weakin the tubing. It
will stand up beter if it is painted or coated so the UV rays will not get
to it.

4296. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 19:31:05 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <g3udnbfDvflim9CiXTWJkQ@comcast.com>
Source record: 109541

Roy,

It might be worthwhile explaining how they came up with Gamma max = 2.414,
instead of some huge number. They say that the phase angle of Zo is
constrained to +/- 45 degrees for R, G, L, and C non-negative.

Tam/WB2TT

4297. MOXON Antenna Project website

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 19:35:11 UTC
From: Don Snodgrass <donsno@charter.net>
Message-ID: <vkq1vgfg87kd15@corp.supernews.com>
Source record: 109542

Hello all...

I'd invite those interested to visit
http://campus.murraystate.edu/org/msuarc/moxon/index.htm which showcases the
ongoing efforts of a group of hams who are experimenting with home brewing
17 meter MOXON antennas. The next phase of our project will be to add 20
meters to the antenna with a common feed point. A 40 meter version is also
in the works.

Best wishes,

Don

K4QKY

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Don Snodgrass
1624 Tabard Drive
Murray, KY 42071
270-767-9944

http://webpages.charter.net/donsno
donsno@charter.net

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

4298. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 20:26:00 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <co4qkvkve4vg2tcnpatkagh9i8ksie102q@4ax.com>
Source record: 109543

On Wed, 27 Aug 2003 10:04:01 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>V^2/Z0=P is a well known equation (so is I^2*Z0=P). These are *RMS* values.

Hi Cecil,

I was right all along, but I simple missed by not saying that the NET
0 was a product of a bajillion volts *RMS* and -bajillion volts *RMS*!

Certainly we cannot ignore the bajillion volts *RMS*, now, can we?
;-)

73's
Richard Clark, KB7QHC

4299. Re: MOXON Antenna Project website

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 20:38:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <si5qkvgi7gkpm2k8mt8e3302kr5khpoh2q@4ax.com>
Source record: 109544

On Wed, 27 Aug 2003 14:35:11 -0500, "Don Snodgrass"
<donsno@charter.net> wrote:

>
>Hello all...
>
>I'd invite those interested to visit
>http://campus.murraystate.edu/org/msuarc/moxon/index.htm which showcases the
>ongoing efforts of a group of hams who are experimenting with home brewing
>17 meter MOXON antennas. The next phase of our project will be to add 20
>meters to the antenna with a common feed point. A 40 meter version is also
>in the works.
>
>Best wishes,
>
>Don
>
>K4QKY

Hi Don,

A nice page you have there.

73's
Richard Clark, KB7QHC

4300. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 20:45:22 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d19df_1@corp.newsgroups.com>
Source record: 109545

Jim Kelley wrote:
>
> W5DXP wrote:
>>Looks like Born and Wolf are wrong.
>
> Not bloody likely.

I don't mean technically wrong - just wrong in their choice of words.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4301. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 20:51:20 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d1b45$1_1@corp.newsgroups.com>
Source record: 109547

Richard Clark wrote:
> Certainly we cannot ignore the bajillion volts *RMS*, now, can we?
> ;-)

We can unless Sqrt(P*Z0) equals a bajillion volts which it usually
doesn't. These values are all inter-related. A 200W transmitter
will pour Sqrt(200*50) = 100 volts RMS into a 50 ohm load. That's
a no-brainer. Why do you act like it is a far out big deal?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4302. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 20:52:04 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bij5lk$ke3$1@hercules.btinternet.com>
Source record: 109546

"Tarmo Tammaru" wrote
>
> It might be worthwhile explaining how they came up with Gamma max =
2.414,
> instead of some huge number. They say that the phase angle of Zo is
> constrained to +/- 45 degrees for R, G, L, and C non-negative.
==========

Tam, who are "They" ?

Are "they" the "One million housewives who can't be wrong" ?

Or might it be Oliver Heaviside around 1872 ?

It would be a mistake to found a restart of these arithmetical arguments on
rumour.

Yours, Reg, G4FGQ ;o)

4303. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 21:14:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <107qkvguosqt5l3vp0h8d89jnotc0do72m@4ax.com>
Source record: 109548

On Wed, 27 Aug 2003 15:51:20 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Why do you act like it is a far out big deal?

Hi Cecil,

Are you now trying to convince us that a bajillion volts *RMS* meeting
-bajillion volts *RMS* is NOT NET 0? Those are merely the points
where the forward Poynting vector and reflected Poynting vector
are out of phase. We are dealing with component energies. The NET
energy is zero. The component energies are not zero. This would seem
to conflict with much of your wave mechanics for the last 6 months.
Shirley you cannot deny the impact of a bajillion volts *RMS* simply
because your current argument doesn't need that solution, can you? (I
guess you can.)

However, that is not to say that we didn't notice that rhetorical
slide from "could be" to the firmer "is." We can specify these
bajillion volts *RMS* with a phase of a mega-bajillion degrees (with
deliberate care to avoid problematic 179 or 181 degrees) to suit any
opportunistic need. ;-)

73's
Richard Clark, KB7QHC

4304. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 21:16:51 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <opWgVqJDRTEAbL@ifwtech.co.uk>
Source record: 109550

Reg Edwards wrote:
>"Tarmo Tammaru" wrote
>>
>> It might be worthwhile explaining how they came up with Gamma max =
>2.414,
>> instead of some huge number. They say that the phase angle of Zo is
>> constrained to +/- 45 degrees for R, G, L, and C non-negative.
>================================
>
>Tam, who are "They" ?
>
>Are "they" the "One million housewives who can't be wrong" ?
>
>Or might it be Oliver Heaviside around 1872 ?
>

It doesn't matter who says so - the only thing that matters is that the result is correct. The same correct result is always there, to be found by anybody who can.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4305. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 21:19:47 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <Tf93b.13130$jY2.9075@newsread1.news.atl.earthlink.net>
Source record: 109549

Yuri:

[snip]
> >Peter K1PO
> >Indialantic By-the-Sea, FL.
> >
>
> Canucks in exile rspect you tremendously. You would get even more respect
if
> you can proclaim Indialantic new DXCC entity. Does it have to do anything
with
> Indians, Indiana Jones, in Diana, Atlantis, dial, In Dial Antic or what?
>
> Yuri da BUm in BMV (Buick really) by the see (if he can make it)
[snip]

Hi Yuri.

Well Indialantic By-the-Sea is a small town [pop ~2500] on the barrier
island about
25 miles South of Cape Canaveral, just opposite Melbourne on the mainland.

On the East side our island faces the Atlantic Ocean beaches, and on the
West it
faces the two mile wide Indian River Lagoon. The Lagoon is partly salt
water since
it has inlets from the ocean every few miles but with mainland rivers also
flowing into
the lagoon. The lagoon is a very diverse ecosystem and supports both salt
and fresh
water denziens simultaneously, for examples: manatees, alligators,
dolphins, trout,
snook, shrimp, all kinds of shellfish, etc... a fishermans, and pelicans,
and ospreys
fishing paradise!

The island is about one mile wide West to East at the town and so
Indialantic By-the-Sea
occupies about one square mile between the Indian River Lagoon and the
Atlantic Ocean,
hence the name "Indialantic".

My current QTH is a couple of hundred feet from the Atlantic ocean beach...
a great
location for antennas and propagation, and a bad location for tropical
windstorms! I

am planning a tower with quad(s) to be erected soon.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4306. FYI: Antanna Projects Roundup

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 21:39:03 UTC
From: Signal In The Noise <SITN@opinion.com>
Message-ID: <Wx93b.20596$S_.3837@fed1read01>
Source record: 109551

Antanna Projects Roundup at URL:

http://ac6v.com/antprojects.htm

4307. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 22:16:25 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkqbdt4698e26a@corp.supernews.com>
Source record: 109552

I think the fundamental problem here is that the concept of waves of average power necessarily assumes nice, smooth, non-varying "waves" of DC (average) power flowing along the line. When two of these "waves" occupy the same space, they necessarily combine to form another smooth combination net "wave". There's no way to account for the reality that power and energy are *not* flowing in smooth, DC waves, but rather as a time-varying function. Power is flowing back and forth each cycle, and energy is moving into and out of storage each cycle. The time-varying information is thrown away as soon as the average is taken, and it can't be retrieved. So if all you can envision is waves of average power, it's impossible to understand what's really happening with respect to power and energy along the line. You simply don't have the information necessary to envision or understand it.

Roy Lewallen, W7EL

4308. Someone else using my antenna ((M321I58DNU 09/06/2003)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 22:46:04 UTC
From: Dave Bushong <dbushong@adelphia.net>
Message-ID: <Mwa3b.9376$Nc.5564588@news1.news.adelphia.net>
Source record: 109553

Gang,

My surveillance camera happened to snag a picture of someone using my antenna (obviously without my permission). He is probably not licensed, not transmitting, he is still using MY STUFF!

Should I let him go on doing so, or just let it happen? I don't know who to bitch to.

What pisses me off is that you can clearly see him smiling while he is using it.

http://users.adelphia.net/~dbushong/dragonfiles/100_0020.htm

Comments?

73,
Dave KZ1O

4309. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 22:53:38 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <SDa3b.13195$jY2.6431@newsread1.news.atl.earthlink.net>
Source record: 109554

Roy:

[snip]
> Here you've lost me. a is the forward voltage in the transmission line.
> What can be the meaning of its facing a driving point impedance? The
> forward wave sees only the characteristic impedance of the line; at all
> points the ratio of forward voltage to forward current is simply the Z0
> of the line. So I don't believe that it sees 2r anywhere.
>
> This is where I'm stuck. If you can show where along the line the
> forward voltage wave "faces" 2r, that is, Vf/If = 2r, I can continue.
>
> Roy Lewallen, W7EL
[snip]

I appologize if I am "going to fast" for the limitations inherent in
NewsGroup postings.

Let me take it a little more slowly here...

To see that there is essentially no difference between my (apparently two)
different
definitions of the incident and reflected waves a and b, consider the
following scenario
of an actual transmission line having surge impedance [characteristic
impedance] Zo.
Let Zo be in general complex. i.e. Zo = sqrt[(R + jwL)/(G + jwC)] where R,
L, G,
and C are the primary parameters of R Ohms, L Henries, G Siemens, and C
Farads
per unit length.

Now at any particular frequency w = 2*p*f you will find that this general
complex
surge impedance Zo evaluates to a complex number, say Zo(jw) = r + jx.
Later
let's let r = 50 Ohms and x = 5 Ohms so that we can work out a numerical
example.

Consider either a semi-infinite length of this Zo line, or even a finite
length of the Zo line
terminated in an impedance equal to Z0. I am sure that you will agree that
both the
semi-infinite Zo line or the finite length Zo line terminated in Zo have the
same
driving point impedance namely Zo.

Now excite this semi-infinte Zo line by an ideal generator of open circuit voltage
Vi = 2*a behind an impedance equal to the surge impedance Zo. In other words
this is a Thevenin generator of ideal constant voltage 2a behind a complex impedance
of Zo. And so... since an ideal voltage source has zero impedance, the termination
at the source end of this semi-infinite Zo line is Zo, and so the line which has a
driving point impedance of Zo is terminated in Zo. Thus the port or reference plane
between the generator and the semi-infinite line is an "image match" point.

For reference, a rough ASCII style schematic of this situation would be as follows.

Generator = Vi = 2aVolts -> generator impedance Z0 -> impedance Zo of semi-infinite line.

Clearly the the generator impedance of Zo and the line's driving point impedance of Zo
constitute a voltage divider hanging off the generator with open circuit volts Vi = 2a Volts,
and since Zo = Z0 they divide the generator voltage, which equals 2a volts exactly by 2, and
so the voltage across the input of the semi-infinte line is exactly a volts. This a is the incident
voltage wave of the Scattering Formalism and it is exactly the same as the classical forward
voltage for transmission lines. Note that it is exactly half of the generator's open circuit volts.
i.e. the voltage across the perfectly terminated [image matched] line is exactly a Volts or 1/2
of Vi Volts. [Aside: That is why I said in an earlier post that your forward wave and my
incident wave only differ by a factor of two! They are really no different it's only a scale
factor. You can compensate as I have by calling the Zo generator voltage 2a, but for
simplicity I often just call it a to eliminate the factors of 2 that occur all over the place. Sorry
if that is confusing, I'll try not to do that any more. :-).

Now everybody knows and everybody will agree that at the junction of the Zo line
terminated in Zo [NOT a conjugate match] where the Thevenin generator is connected
to the semi-infinite Zo line there is an image match AND there will be no reflected voltage
waves. What is more since the Zo line is semi-infinite, or the alternative of a finite length

and terminated in Zo at the far end, there will be no reflections at the "far end" either. i.e. in this
situation there are no reflections and the incident wave "a" just propagates into the line and
there is no reflected wave b to interfere with it. Note that this does not mean that maximum
power is transmitted into the line. You and I both agree that when a generator is image
matched [Cecil likes to call "image match" a Zo match] that in the general case of complex
Zo maximum power is not transferred but there is NO reflected voltage when measured
with a reflectometer which uses Zo as it's reference impedance.

This scenario at the Zo generator driving the Zo line is the same situation found when you cut
into an infinite length of Zo line and insert a reflectometer with reference impedance Zo,
the reflectometer will read out the reflected voltage b as:

b = rho*a = (Zo-Zo)/(Zo+ Zo) = 0 Zero, nada, nil... no reflections.

Now lets do a simple numerical example.

Consider that at some frequency the surge impedance evaluated to say Zo = r + jx = 50 + j5
Ohms and that we set the generator open circuit voltage to be Vi = 2a = 2 volts. Thus the "incident
voltage wave is a = 1 Volt.

The maximum power available from this Zo generator will occur when the load, call it Z, on the
generator is a conjugate match to the generator impedance Zo. Thus for maximum power
transfer Z must be the complex conjugate of Zo, i.e. we must let Z = 50 - j5, to extract maximum
power not Z = 50 +j5.

Under these conjugate matched conditions, the total impedance faced by the generator is the sum of
its' internal impedance Zo and the external Z, i.e. the total impedance is

Zo + conj(Zo) = 50 + j5 + 50 - j5 = 100 Ohms

And so the generator impresses it's 2 Volts of open circuit volts across the resulting totalof 100 Ohms
supplying a current of I = 2/100 = 20mA to the real part of the load of 50 Ohms for a maximum
power of:

Pmax = I*I*R = 0.02*0.02*50 = 0.0004*50 = 0.02 = 20 mWatts.

Under this conjugate matched condition, where the maximum power of 20mW is transferred, if we
use the classical definition of rho = (Z - Zo)/(Z + Zo) with Z = 50 - j5 and Zo = 50 + j5
we get:

rho = b/a = ((50 - j5) - (50 + j5))/((50 - j5) + (50 + j5)) = (-j5 - j5)/(100) = -j10/100 = -j/10

Since the incident wave is a = 1 Volt, then:

b = rho* a = -j/10 Volts.

With a conjugate match, and using the classical definition of rho, as measured by a reflectometer using
Zo as it's reference impedance, there will be a reflected voltage of magnitude 0.1 Volts, or one tenth of a volt at a phase lag of ninety degrees.

It is interesting to see what value of reflected voltage would be indicated by a Bird Model 43 in
this circumstance of a perfect conjugate match.

A Bird Model 43 uses an internal reference impedance of R = 50 Ohms and it implements the "classical" definition of rho. i.e. The Bird Model 43 calculates the reflected
voltage b as b(Bird):

b(BIRD) = rho * a = (Z - 50)/(Z + 50) * 1 = (50 - j5 - 50)/(50 - j5 + 50) = -j5/(100 - j5)

Actually the Bird cannot indicate phase angles, rather it just computes the approximate magnitude
of the reflected voltage which in this case would be

|b(Bird)| = 5/sqrt(100*100 + 5*5) = 5/sqrt(1025) = 0.156 Volts.

Compare this to the magnitude of the "true" reflected voltage which is 0.1 Volts as computed by a true reflectometer which used Zo as its' internal reference impedance.

And so... contrary to popular opinion, the Bird does not indicate zero reflected power when it is inserted into a perfect conjugate matched [maximum power transfer] situation when the Zo of the system is not a pure 50 Ohms!

Now if we choose to use a different definition of rho, say the one proposed by Slick why then we will get different results for the reflected voltage, in fact with his somewhat erroneous formula for rho he will read rho as zero in the conjugate matched situation. However. even though one can use any definition as long as one consistently uses it in all theoretical developments and measurement, as in one of my other posts to this thread, I do not believe Slick's or anybody elses re-definition of rho to be approved by "Mother Nature".

Mother Nature uses rho = (Z - Zo)/(Z + Z0) simply because that is the reflection coefficient that exists at any point along any infinitely long transmission line of constant surge impedance Zo where looking to the right and to the left at any point in the line one sees the same driving point impedance Zo in both directions and there are no discontinuities in Zo to cause reflectons, and so the reflection coefficient must be zero and (Zo - Zo)/(Zo + Zo) is the only formulation of a reflection factor that supports that condition.

I hope this "treatise" helps you to understand my thoughts on this.

--
Peter K1PO
Indialantic By-the-Sea, FL.

.

4310. Re: BPL industry take on why power lines are not antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 23:01:58 UTC
From: Dave Bushong <kz1o@adelphia.net>
Message-ID: <GLa3b.9381$Nc.5567115@news1.news.adelphia.net>
Source record: 109555

Hi Ed,

Thanks for the info. I agree with you about BPL. It's a bad, bad idea.

My suggestion to you: double- or triple-check your postings for easy
stuff like typo's. It's especially bad when you say that "there was a
typo in the formula", and then your posting says:

========== [start quote] =============
The easiest wa to do that is to run a 3 D model
========== [end quote] =============

I know what you meant, of course, and so did 99% of the rest of us. But
the "competition" will use this against you.

This subject (BPL) will become huge, and you don't want people sniping
at you, implying that you can't spell, or whatever. That will detract
from the issue, and that is how some people accomplish their ends.

All the best, and 73,
Dave
KZ1O

W1RFI wrote:

> These are the reply comments of Ameren Energy Corporation:
>
> http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_docum
> ent=6514683314
>
> They outline why power lines are excellent RF transmission lines that radiate
> only at points of "discontinuity."
>
> And, for those that may wonder: there was a typo in the formula, but the
> calculations that follow had been done correctly. (Too bad they used the typo
> to do all of their calculations incorrectly...)
>
> I re-ran the antenna models and easily found the gain that the ARRL paper had
> documented. (The easiest wa to do that is to run a 3 D model in EZW, then check
> the box for a 2D display. It will display the plot of maximum gain). Maybe
> they can sign up for the ARRL modeling course.
>
> Those that want an easy list of the links to the industry and organizational
> filings on BPL can go to:
>
> http://www.arrl.org/~ehare/bpl/hyperlinks.html
>

> 73,
> Ed Hare, W1RFI
>

4311. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 23:06:10 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <CPa3b.13263$jY2.2618@newsread1.news.atl.earthlink.net>
Source record: 109556

Cecil:

[snip]
> So, Peter, what mechanism of physics causes the reversal in the momentum
> of the reflected wave when a Z0-match exists?
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

There is no reflection at a Zo-match!

There are no "waves", only particles, photons and electrons to be precise!

Waves are an illusion, the dynamics of electormagnetic radiation are explained fully by quantum wave mechanics, the electrodynamics of waves was replaced long ago, in the 1930's by QED, known as quantum electrodynamics. Einstein was the first to note and explain the strange inter-relationship between electrons and photons. He won a Nobel Prize for that piece of work. But poor Einstein could never reconcile quantum mechanics with his relativity theory. His biggest problem was that quantum theory predicts that quanta can communicate at speeds faster than the speed of light when they become entaangled.

Check out Feynman's Lectures for an "undergraduate" introduction to QED, and find out why "waves" are just plain WRONG!

There is an interesting book out in the bookstores recently, written for the layman, which details the strange life of quantum mechanics, the book is a great read:

Amir D. Aczel, "Entanglement", Four Walls Eight Windows, New York, 2001.
ISBN 1-56858-232-3.

Costs around $20 in hardcover. Includes lots of juicy details of the private lives of some of the main protagonists. e.g. Erwin Schrodinger was a "rake", etc... as well as a pretty good explanation of some of the things still to be resolved in quantum mechanics, I think you would enjoy.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4312. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 23:15:39 UTC
From: k9sqg@aol.com
Message-ID: <20030827191539.19898.00000039@mb-m28.aol.com>
Source record: 109558

Mark,

You're not going to like my suggestion but here goes...try a vertical. Ask around, the people with the poor ground systems and those that have never used one will condemn them. Those that have used them with good ground systems will praise them.

73s,

Evan

4313. Re: Someone else using my antenna ((M321I58DNU 09/06/2003)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 23:15:47 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <DYa3b.276856$YN5.188327@sccrnsc01>
Source record: 109557

TROUT BAIT!! Go Fishin'

DD, W1MCE

Dave Bushong wrote:

> Gang,
>
> My surveillance camera happened to snag a picture of someone using my
> antenna (obviously without my permission). He is probably not licensed,
> not transmitting, he is still using MY STUFF!
>
> Should I let him go on doing so, or just let it happen? I don't know
> who to bitch to.
>
> What pisses me off is that you can clearly see him smiling while he is
> using it.
>
> http://users.adelphia.net/~dbushong/dragonfiles/100_0020.htm
>
> Comments?
>
> 73,
> Dave KZ1O
>

4314. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 23:38:35 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a3gqkvcrm0j7ntbk5lnu8lrkigbut4h045@4ax.com>
Source record: 109559

On Wed, 27 Aug 2003 21:19:47 GMT, "Peter O. Brackett"
<ab4bc@ix.netcom.com> wrote:

>Well Indialantic By-the-Sea is a small town [pop ~2500] on the barrier
>island about
...

Hi Peter,

And I thought it was there because it wasn't Indipacific or Indigulf.

73's
Richard Clark, KB7QHC

4315. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-27 23:41:13 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <_uacndebqbAC39CiXTWJkA@comcast.com>
Source record: 109560

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bij5lk$ke3$1@hercules.btinternet.com...
>> ================================
>
> Tam, who are "They" ?
>
They were MIT EE professors. I think Fano has written a more recent book on this. MIT is often considered to be the best engineering school in the US. (Keep forgetting you live "over there")

You are making me work my tail off trying to understand just what they did. You have a line of impedance Zo with load Zr at point z=0. Normalize, Zn=Zr/Zo. Since the angle of Zo is within +/- 45 degrees, the angle of Zn is within +/-135 degrees. He draws some vectors and decides maximum gamma is when the angle of Zn is +/-135. He solves for gamma^2, takes the square root, and ends up with gamma =

1 + SQRT(2)

I couldn't massage the numbers just right, but the decimal number I got suggest that max Gamma occurs when

Zo = k(1 - j1)
Zr = jkSQRT(2) k is the same k

He goes on to say that as you move away from z=0, the reflection coefficient becomes smaller by e**2alpha|z|

This is probably a never ending discussion, but I wanted to point out that these guys don't think there is anything wrong with your gamma of 1.8 ; especially since Slick brought it up again. I do not want to retake Fields & Waves

Tam/WB2TT

4316. UHF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 00:29:53 UTC
From: brian1509@yahoo.com
Message-ID: <6762ff06.0308271629.447eec1b@posting.google.com>
Source record: 109561

What's the best feedline for UHF antenna, 75 ohm cable or 300 ohm
strap? The antenna is to be used for recieving 674 MHz (TV channel 48)

4317. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 00:33:08 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <e3idnag6FL4i0NCiXTWJiQ@crocker.com>
Source record: 109562

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:L%S2b.15950$8i2.626@newsread2.news.atl.earthlink.net...
<big snip>
> Under the classical definition of rho = (Z - R)/(Z + R) rho will be not be
> zero for a "conjugate match" and in fact there will be a "residual"
> reflected voltage of -jx/r times the incident voltage at a conjugate
match.
> The only time the classical definition of rho and the reflected voltage is
> null is for an "image match" when the load equals the reference impedance.
> :
> :
> Unless one changes ones definition of the reflected voltage/reflection
> coefficient to utilize the conjugate of the internal impedance as the
> "reference" impedance then the reflected voltage is not zero at a
conjugate
> match. End of story.
> [snip]

one more time and then i am transfering to a new computer and will probably lose my watch on this thread.

you have also hit on the basic problem in this discussion. there are two totally different topics in play here and they are getting mixed up back and forth all over this thread.

case 1: transmission line with a load.. this is the 'classical' case studied in ee classes world wide that yeilds the voltage or current reflection coeff of (Zo-Zl)/(Zo+Zl). the derivation is extremely simple and takes into account losses on the transmission line properly. a 'conjugate' match has nothing to do with this discussion, and nothing in the driving source is important to the calculations.

case 2: generator feeding a load... this is the other problem that has somehow been pulled into this thread and keeps getting mixed up with case 1 above. in this case we have a load impedance... however you may derive it, just as a lumped load or as a load at the end of a transmission line transformed back to the generator via the appropriate transmission line methods... this case is used to solve for maximum power transfer from the generator that has an internal impedance to the load impedance (note, this is the load impedance AS TRANSFORMED TO THE GENERATOR END OF THE LINE!). in this case you can solve for the maximum power tranfer and get your conjugate match condition, essentially where the generator and load have opposite reactances but the same real resistance. in one web site and apparently other books someone has defined another type of reflection coefficient that looks at this junction between the generator with its impedance and the load

impedance, this one apparently includes the conjugate of the load impedance in the numerator.

keep your conditions straight or these discussions will go on for ever with both sides knowing they are right and that the other one is wrong.... but only because they are discussing two different problems.

4318. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 00:33:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d4f60_8@corp.newsgroups.com>
Source record: 109563

Richard Clark wrote:
> We are dealing with component energies. The NET
> energy is zero. The component energies are not zero. This would seem
> to conflict with much of your wave mechanics for the last 6 months.

If you think that, it's obvious you didn't understand what I have been saying for the last 6 months, which is what I had assumed. The wave reflection model is perfectly consistent.

Why do you bring up bizillion volts? What is the conflict you see?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4319. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 00:49:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d5308_8@corp.newsgroups.com>
Source record: 109564

Roy Lewallen wrote:

> I think the fundamental problem here is that the concept of waves of
> average power necessarily assumes nice, smooth, non-varying "waves" of
> DC (average) power flowing along the line. When two of these "waves"
> occupy the same space, they necessarily combine to form another smooth
> combination net "wave". There's no way to account for the reality that
> power and energy are *not* flowing in smooth, DC waves, but rather as a
> time-varying function. Power is flowing back and forth each cycle, and
> energy is moving into and out of storage each cycle. The time-varying
> information is thrown away as soon as the average is taken, and it can't
> be retrieved.

Who needs it? Of what use is it? Don't phasors contain all the important
information? What problem are you trying to solve by resorting to
instantaneous energy and/or power? You will never understand
instantaneous energy until you understand virtual photons. That's a
reasonable statement based on the latest quantum electrodynamics. Do
you understand virtual photons? Are you going to try to understand
virtual photons in order to really understand instantaneous energy?
If not, why not? Methinks you are the pot calling the kettle black.

> So if all you can envision is waves of average power, it's
> impossible to understand what's really happening with respect to power
> and energy along the line. You simply don't have the information
> necessary to envision or understand it.

The optics physicists have done just fine understanding everything while
dealing with irradiance (average power). Instantaneous power is simply
not a very useful concept except in some esoteric applications.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4320. Re: MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 00:49:37 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <uqjqkvo2uck6vhoj1jotqg5teb0b37qg13@4ax.com>
Source record: 109520

On Tue, 26 Aug 2003 23:17:49 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Bob Miller wrote:
>
>> I'm tuning up a dipole with the 989c, using it for the first time in
>> several years.
>>
>> Does maximum inductance occur with the reference counter at 000, and
>> minimum inductance at 125?
>>
>> The MFJ manual I downloaded contradicts itself on this point, and I'd
>> like to get it clear.
>
>There are two configurations of MFJ-949E. The only way to tell the
>difference is pop the lid. Probably the same for the 989c.

Okay, popped the lid.

One end of the roller inductor is grounded, as is the rolling tap. The
other end of the inductor connects to the variable capacitors. When
the counter registers "000", the rolling tap is at the end of the
inductor connected to the caps. This would be maximum inductance?

Bob
k5qwg

4321. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:03:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d5669$1_8@corp.newsgroups.com>
Source record: 109565

Peter O. Brackett wrote:
> There is no reflection at a Zo-match!

The wave reflection model works just fine at a Z0-match.

> There are no "waves", only particles, photons and electrons to be precise!

Please don't forget the necessary virtual photons and your inability to
even prove that they exist.

> Check out Feynman's Lectures for an "undergraduate" introduction to QED, and
> find out why "waves" are just plain WRONG!

Does he prove that virtual photons exist? Quoting Hecht: "We've learned from
Quantum Mechanics that at base interference is one of the most fundamental
mysteries in physics."

> There is an interesting book out in the bookstores recently, written for the
> layman, which details the strange life of quantum mechanics, the book is a
> great read:

Thanks, I'll look for it. Right now, I'm about half way through _Quarks,_
Leptons,_and_the_Big_Bang_.
--
73, Cecil http://www.qsl.net/w5dxp

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4322. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:19:16 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030827211916.22854.00000048@mb-m23.aol.com>
Source record: 109566

>
>And I thought it was there because it wasn't Indipacific or Indigulf.
>
>73's
>Richard Clark, KB7QHC
>
>
>

Must be bacause of them reflected waves? Maybe bunch of dummies on the beach would calm things down, like 1:1 :-)

Sounds like radio paradise Peter. We almost bought island in Maine, only to find that there was erosion going on and environazis were oposed to any shoring up of private property. It was like a dream, at the end of peninsula, separated by abt 200 ft channel which would emerge at low tide and allow Jeep to get through. Power and telephone feeding two cottages (low and high band), oh well! Found another place at Cape Breton, I hope to fire up from there in some contests, it is a park I believe.

73 Yuri

4323. BPL sponsored by Purdue?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:21:36 UTC
From: Harry George <hgg9140@seanet.com>
Message-ID: <m37k4yshjz.fsf_-_@wilma.local>
Source record: 109567

The EE Times August 25, 2003 cover article is "Smarter grid could warn
of impending blackouts". Leftari Tsoukalas of Purdue University (and
others) proposes smart monitors on the grid. The idea is to prevent
massive blackouts by better understanding and controlling the grid.
Good as far as it goes. However...

The article carefully does not mention how the information gets around
the grid. The implication appears to be BPL. E.g., they refer to
microcontrollers at the power meter (few of which have ethernet cables
and DSL connections as far as I know).

Is anyone in a position to actually find out what Purdue is up to?
And perhaps forward the BPL RFI concerns to them before this goes much
further?

Frankly, the article's timing looks amazingly similar to the energy
industy's "Gosh, 9/11, we'd better drill ANWR" opportunism.

[snip]
> W1RFI wrote:
>
> > These are the reply comments of Ameren Energy Corporation:
> > http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_docum
> > ent=6514683314
> > They outline why power lines are excellent RF transmission lines
> > that radiate
> > only at points of "discontinuity." And, for those that may wonder:
> > there was a typo in the formula, but the
> > calculations that follow had been done correctly. (Too bad they used the typo
> > to do all of their calculations incorrectly...)
> > I re-ran the antenna models and easily found the gain that the ARRL
> > paper had
> > documented. (The easiest wa to do that is to run a 3 D model in EZW, then check
> > the box for a 2D display. It will display the plot of maximum gain). Maybe
> > they can sign up for the ARRL modeling course.
> > Those that want an easy list of the links to the industry and
> > organizational
> > filings on BPL can go to:
> > http://www.arrl.org/~ehare/bpl/hyperlinks.html
> > 73,
> > Ed Hare, W1RFI
> >

4324. Re: BPL industry take on why power lines are not antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:22:59 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030827212259.22854.00000050@mb-m23.aol.com>
Source record: 109568

>This subject (BPL) will become huge,

Yea, with today's car radios, nobody will be able to listen to AM, no front end selectivity. Just drive by power line noise or BC station and it is all over the dial.
I wonder what the noisy power lines, insulators will do to BPL, QRM it hell?

Yuri

4325. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:26:43 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bijlojcqj1@titan.btinternet.com>
Source record: 109469

Tam, I did not say your value of 1+Sqrt(2) was incorrect.

But when 3 guys you happen to have heard of say so, it hardly constitutes a proof. Why bother to mention them.

If you have any doubts about a particular matter the only way to understand what goes on is to work it out for yourself with pencil and paper. Otherwise you will remain dependent on mere acceptance of numbers found in books - if you can find a book. And has been re-discovered in these threads - books disagree with each other.

Good books teach you how to work things out for yourself from first principles. Then you can stop referring to authors. But these days so-called engineers are more inclined to misplace their blind faith in computer programs. ;o)

Yours, Reg, G4FGQ

4326. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:34:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkqn20r5at8q8c@corp.supernews.com>
Source record: 109470

With all due respect, Cecil, I believe you've gone a bit 'round the bend.

Roy Lewallen, W7EL

W5DXP wrote:
>
> Who needs it? Of what use is it? Don't phasors contain all the important
> information? What problem are you trying to solve by resorting to
> instantaneous energy and/or power? You will never understand
> instantaneous energy until you understand virtual photons. . .

4327. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:37:48 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <uimqkv0ds6n8lnbrvdop6n7uhgglc7arp6@4ax.com>
Source record: 109471

On Wed, 27 Aug 2003 19:33:38 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> We are dealing with component energies. The NET
>> energy is zero. The component energies are not zero. This would seem
>> to conflict with much of your wave mechanics for the last 6 months.
>
>If you think that, it's obvious you didn't understand what I have been
>saying for the last 6 months, which is what I had assumed. The wave
>reflection model is perfectly consistent.
>
>Why do you bring up bizillion volts? What is the conflict you see?

Hi Cecil,

It's obvious you didn't understand what you have been
saying for the last 6 months. What was said is what you have said, if
you "think that" then what is obvious is riddled with holes by your
own admission. Its shelf life is very limited too. :-)

The conflict? A bajillion is much less than a bizillion. That is why
you act like it is a far out big deal.

73's
Richard Clark, KB7QHC

4328. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 01:46:32 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308271746.28037589@posting.google.com>
Source record: 109472

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bij0br$q2p$1@titan.btinternet.com>...
...
> By the way, you've told us only half the story. What's the value of the
> load impedance which maximises the reflection coefficient?

Hey, Reg, it's just a simple high-school (well, maybe first-year
college) differential calculus problem. Just let Garvin work through
it for us. Hey, good Dr., could you do that for us? Just write an
expression for |Vr/Vf| = |(Zl-Zo)/(Zl+Zo)| in terms of Rl and Xl and
find the partial derivatives with respect to those two variables, and
set both equal to zero, while letting Ro=Xo. It's mostly just a bunch
of bookkeeping. You should come up with values of Rl and Zl in terms
of Ro, and you can check to be sure that's actually a maximum and not
a minimum or saddle point. You should see a symmetry for Ro=-Xo, the
more usual limiting case.

Cheers,
Tom

4329. Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 02:20:37 UTC
From: Cliff Gieseke <cliffgie@swbell.net>
Message-ID: <VFd3b.697$2j.509@newssvr24.news.prodigy.com>
Source record: 109473

Does anyone still use a folded dipole with an appropriate impedance matching balun today? Not the broadband type that B & W sells, but the old monoband basic folded dipole, that many operators used 50 years ago. ???

-- Cliff, W4ZFL

4330. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 02:40:07 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <99nqkv8f4ihm5g3524ptt7vov0lh8gt5rn@4ax.com>
Source record: 109474

On Wed, 27 Aug 2003 19:49:14 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>The optics physicists have done just fine understanding everything while
>dealing with irradiance (average power). Instantaneous power is simply
>not a very useful concept except in some esoteric applications.

Hi Cecil,

To date you haven't fielded many practical problems of "optics" as you
describe it. And the admission above is a poor excuse in place of
simple applications, never mind the esoteric ones you stumble over in
the dark bands.

A simple example which might offer you 50% chance of being right using
simple irradiance (average power, so average that their steady
illumination doesn't change during the entire time you ponder):

Which is brighter?
1.) 629 lux
2.) 5.0 millicandela/cmï¿½

Which is visible in sunlight? (mark with an "x")
1.) _
2.) _
Sunlight being defined as the irradiance observed beneath the
equatorial Sun on the equinox at local noon on a cloudless day.

"If" you got any multiple guess right, a tougher question that
involves more skill and relates to the source power for each:

What is the source total intensity for each value above with either
source at 10 centimeters remote? (either source being isotropic)
1.) _____
2.) _____
expressed in Lumens total flux (or make it simple on yourself, Watts
total radiation)?

73's
Richard Clark, KB7QHC

4331. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 02:42:58 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <huqqkvot427terdru5pnu4eo8uaar3c8nl@4ax.com>
Source record: 109478

On Thu, 28 Aug 2003 02:20:37 GMT, "Cliff Gieseke"
<cliffgie@swbell.net> wrote:

>Does anyone still use a folded dipole with an appropriate impedance matching balun today? Not the broadband type that B & W sells, but the old monoband basic folded dipole, that many operators used 50 years ago. ???
>
>-- Cliff, W4ZFL

Fifty years ago they fed it with open transmission line and a balun
was not needed.

Danny, K6MHE

4332. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 02:46:25 UTC
From: Mike Luther <mike.luther@ziplog.com>
Message-ID: <vkqr7isfuos399@corp.supernews.com>
Source record: 109475

If you cannot convince yourself to put in the pile of ground radials, you can use an ELEVATED 40 meter vertical. You can SHUNT FEED it so that it does not require an insulator, making the whole affair solid grounded to boot. Your radials should be a minimum of 9 feet up off the ground. You may make the shunt section out of six inch TV twin lead stand off mast clamp spacers, and use not much of a spacing for the trimmer capacitor for the gamma match that feeds it. You will find that you can take about a three foot section of RG-8 coax, and turn it into a capacitor by connecting the shield to one side of the coax feed line and the center conductor to the gamma match wire section which you make out of ordinary copper wire or whatever.

Put a couple turns of hard copper ac wire around a screwdriver handle. Put that across a common antenna insulator as a two turn coil. Connect that in series with an elevated radial. Stick a grid-dip oscillator in the middle of that little loop and tune the radials to reasonance by shortening them from too long to your target frequency. Adjust the length and the gamma match deal with an AEA or other antenna analysis unit for flat SWR at the coax feet terminal for your project.

Using the totally grounded method described lets you go down to the base of the pole and make SURE that it goes to a good ground rod. Use a few short six or eight foot radials at ground level to create the drain for any direct lightning hit you may take. The idea works very well from experience and more than one hit.

Run your coax feed line for the affair to the base as well and thence into the shack, using techniques that ground it well too, plus proper interface lightning suppression where the coax comes into the shack as well.

Here in the W5 call area, with a KW against it and a good receiver, on CW in either the CQ-WW or the ARRL CW DX test, I've consistently been able to pile up between 80 and 100 countries in any given contest .. often as many as 400-500 plus 40 meter QSO's. By using flag pole techniques you can make it look as neat as a pin for the inquisition .. grin.

If you have noise problems, you can help that with the new cancellation RF devices. As well, you can also design the thing so that you can cover 80 meters too!

The way to do that is to create the main vertical element so that it also has a folded loop operation all the way up to the top and down. On 80 you feed it is a folded monopole. On 40 you short that folded monopole at the base ,, a presto you have you full length 40 meter

element with a wider element profile, that is all.

Proper use of a Rohn 25-G few sections and a concrete ufer style base can get you a completely self-supporting element for the basic contruction. The neat part of this is that you can go inside that tower and run additional coax up it to get a small VHF antenna or dish up there. Or you can also side straddle mount a little Wireless 802.11 paddle or dish up there and PRESTO, if there is an IP wireless service, you can run that or whatever through, say, CAT-5 inside the tower .. and instant high speed connection for you as well. Just bring the internal lines down the inside of the tower and do the lightning mitigation work at the base for them as well.

Yes, you'll have to adjust the tower height to account for the effect of whatever other metal mass is up there for stunts like this, but you *CAN* do it and do very well on 40 and 80 too! Plus if you get bold. you can get a full sized 80 meter stick up there with Rohn 25-G and a galvanized mast stinger on top which works just as good on 80. But you'll have to use guy wires and so on for the elevated version, which of course has those longer elevated radials as well.

It's neat as a pin, terribly structurally efficient, and works a heck of a lot better than any horizontal affair you are likely to get up in your restricted space.

W5WQN ..

Mark Sheffield wrote:

>With the downturn in the solar cycle and worse days ahead, I'm faced
>with operating on the lower hf bands. 20M has gotten to be very hit
>or miss wrt propagation and it seems that more and more dx is
>happening on 40 (with some on 30). I have a 40M dipole up about 30 ft
>or so, but that really doesn't cut it.
>
>I know that this is like a discussion about "what's the best color",
>but what antenna systems will work well on 40M, maybe even 80M, that I
>could mount either on the ground or up no higher than 30 ft? I need
>to at least get some general direction on this from an experiential
>data set rather than starting with the ads in QST or CQ.
>
>Tnx - Mark Sheffield/N0LF
>
>

--

--> Sleep well; OS2's still awake! ;)

Mike Luther

4333. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 02:52:20 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <13rqkv8r00h7t5j0ijdstofonh61ts5c10@4ax.com>
Source record: 109476

On Thu, 28 Aug 2003 00:33:08 -0000, "David Robbins" <k1ttt@arrl.net>
wrote:

>you have also hit on the basic problem in this discussion. there are two
>totally different topics in play here and they are getting mixed up back and
>forth all over this thread.
>
>case 1: transmission line with a load..
>
>case 2: generator feeding a load...
>
>keep your conditions straight or these discussions will go on for ever with
>both sides knowing they are right and that the other one is wrong.... but
>only because they are discussing two different problems.

Hi David,

If you don't respond with an answer, I will mark it up to your having
lost track of the thread through your computer swapping. I quoted
only as much of your post to offer that I have no interest in the
conjugation issue whatever logic it is cloaked in. This is a simple,
practical example expressed in heat lost in the transmission line.
Very simple conditions, two resistors and a hank of transmission line.

The scenario begins:

"A 50-Ohm line is terminated with a load of 200+j0 ohms.
The normal attenuation of the line is 2.00 decibels.
What is the loss of the line?"

Having stated no more, the implication is that the source is matched
to the line (source Z = 50+j0 Ohms). This is a half step towards the
full blown implementation such that those who are comfortable to this
point (and is in fact common experience) will observe their answer and
this answer are:

"A = 1.27 + 2.00 = 3.27dB"

"This is the dissipation or heat loss...."

we then proceed:

"...the generator impedance is 100+0j ohms, and the line is 5.35
wavelengths long."

73's
Richard Clark, KB7QHC

4334. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:03:16 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <BtacnXF-zexj7dCiXTWJjg@comcast.com>
Source record: 109477

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bijlojcqj1@titan.btinternet.com...
> But when 3 guys you happen to have heard of say so, it hardly constitutes
a
> proof. Why bother to mention them.
>
Reg,
Actually, I am kind of relieved. I didn't know which three guys you were
talking about in your first message.

I scanned in the page where they do the gamma thing. If you want, I can
email you a JPG, but it is about 275K.

Tam/WB2TT
I believe my email address comes up as garbage on this newsgroup. The ARRL
thing works.

4335. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:16:15 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <9sucnWP87fKZ6dCiXTWJhQ@comcast.com>
Source record: 109479

Cliff,

M2, HyGain, and at least one CushCraft use the 4:1 balun that consists of a 1/2 wave section of coax on some beams. Gets kind of long below 10 meters, but no reason it wouldn't work with a folded dipole. You would end up with about 70 Ohms.

Tam/WB2TT
"Cliff Gieseke" <cliffgie@swbell.net> wrote in message news:VFd3b.697$2j.509@newssvr24.news.prodigy.com...
Does anyone still use a folded dipole with an appropriate impedance matching balun today? Not the broadband type that B & W sells, but the old monoband basic folded dipole, that many operators used 50 years ago. ???

-- Cliff, W4ZFL

4336. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:18:07 UTC
From: Mark Sheffield <sheffield@earthlink.net>
Message-ID: <61tqkvg24tj4c2fuftkgiqo4a16u2pr896@4ax.com>
Source record: 109480

Thanks for all the replies and suggestions, both to the group here and via email. Just about all the suggestions have been to go vertical in on manner or another, and this I will do.

Thank you all - Mark Sheffield/N0LF

4337. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:19:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d763e$1_5@corp.newsgroups.com>
Source record: 109481

Roy Lewallen wrote:
> With all due respect, Cecil, I believe you've gone a bit 'round the bend.

Can't answer the questions, huh? :-) I don't see the usefulness of
instantaneous power. You don't see the usefulness of virtual photons.
If I have a problem, you have a similar problem. FYI, if fields don't
really exist, as they don't in particle physics, then virtual photons
are necessary to accomplish the function of the fields.

>> Who needs it? Of what use is it? Don't phasors contain all the important
>> information? What problem are you trying to solve by resorting to
>> instantaneous energy and/or power? You will never understand
>> instantaneous energy until you understand virtual photons. . .
--
73, Cecil http://www.qsl.net/w5dxp

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4338. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:22:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d76f9_5@corp.newsgroups.com>
Source record: 109483

Richard Clark wrote:
> It's obvious you didn't understand what you have been
> saying for the last 6 months.

Couldn't possibly be a lack of understanding on your part, eh?
Which is more likely? That I don't understand what I have been
saying or that you don't understand what I have been saying?
Exactly what is it that you think I have said that is wrong?

I have always said, and I will continue to say, if you understood
what I was saying, you would agree with me. You have said nothing
that has contradicted anything I have said.
--
73, Cecil http://www.qsl.net/w5dxp

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4339. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:26:00 UTC
From: Cliff Gieseke <cliffgie@swbell.net>
Message-ID: <cDe3b.496$cF6.198@newssvr23.news.prodigy.com>
Source record: 109482

Back then, as a teenager, I had one with 300 ohm twinlead and a short run of coax between a balun and a Harvey Wells TBS50c. ... A number of old timers then were, of course, using open line feeders.

Cliff, W4ZFL

> Fifty years ago they fed it with open transmission line and a balun
> was not needed.
>
> Danny, K6MHE

4340. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:26:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d77e2_5@corp.newsgroups.com>
Source record: 109484

Cliff Gieseke wrote:
> Does anyone still use a folded dipole with an appropriate impedance
> matching balun today? Not the broadband type that B & W sells, but the
> old monoband basic folded dipole, that many operators used 50 years
> ago. ???

Most hams use a 4:1 balun with a folded dipole instead of the more
complicated 6:1 balun. "300 ohm" window line usually has a Z0 less
than 300 ohms. The stuff I have is about 275 ohms.
--
73, Cecil http://www.qsl.net/w5dxp

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4341. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:33:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d7975_5@corp.newsgroups.com>
Source record: 109485

Richard Clark wrote:
> Which is brighter?
> Which is visible in sunlight? (mark with an "x")
> What is the source total intensity for each value above with either
> source at 10 centimeters remote? (either source being isotropic)
> expressed in Lumens total flux (or make it simple on yourself, Watts
> total radiation)?

Cute, but why is the above relevant?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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4342. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:43:55 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkquk347fv5te5@corp.supernews.com>
Source record: 109486

W5DXP wrote:
> Roy Lewallen wrote:
>
>> With all due respect, Cecil, I believe you've gone a bit 'round the bend.
>
>
> Can't answer the questions, huh? :-)

No, actually, I've answered it again and again and again. But it makes
no difference -- you continue asking.

Roy Lewallen, W7EL

4343. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:44:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d7c14_5@corp.newsgroups.com>
Source record: 109487

Peter O. Brackett wrote:
> There are no "waves", only particles, photons and electrons to be precise!

Given a coherent light source, like a laser, and exactly the right indices
of refraction, can you describe in a nutshell, how non-glare thin-film
coating works using only particles? Do out of phase photons cancel each
other when they are traveling in the same direction?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4344. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:47:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4d7cba_5@corp.newsgroups.com>
Source record: 109488

Roy Lewallen wrote:

> W5DXP wrote:
>> Can't answer the questions, huh? :-)
>
> No, actually, I've answered it again and again and again. But it makes
> no difference -- you continue asking.

What was the answer to the question about whether you are going to
study virtual photons or not? I seem to have missed that answer.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4345. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:55:00 UTC
From: "Terrence R. Redding Ph.D." <terrenceredding@bellsouth.net>
Message-ID: <BB72F554.EB99%terrenceredding@bellsouth.net>
Source record: 109489

Tom I don't have an answer for you.

I came across your message because I tried to use the MFJ Antenna Analyzer to tune a 20 meter quad, and could not figure out how to get the "grid dip" function to work.

So I will follow your thread with interest.

Terry - W6LMJ

On 8/26/03 10:00 AM, in article rQCdnfXCtI-Y9daiXTWJgA@comcast.com, "Tom Coates" <tecoates@comcast.net> wrote:

> I recall reading about this many years ago but can't find it in any of the
> books I have now.
>
> How do I couple the meter to the antenna?
>
> The project is a 3-element 2 meter yagi and I'm trying to set the length of
> the driven element. I can't find a dip within the band using the rig and an
> swr bridge.
>
> Tom, N3IJ
>
>
>
>
>

4346. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:56:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <meuqkvgi5kopk9jjl65jfrrpd465ab06s1@4ax.com>
Source record: 109490

On Wed, 27 Aug 2003 22:33:10 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Which is brighter?
>> Which is visible in sunlight? (mark with an "x")
>> What is the source total intensity for each value above with either
>> source at 10 centimeters remote? (either source being isotropic)
>> expressed in Lumens total flux (or make it simple on yourself, Watts
>> total radiation)?
>
>Cute, but why is the above relevant?

Hi Cecil,

You answered the question perfectly, you see no relevance with
standard optics to your "optics." Not even to 50% chance which is the
more remarkable!

That was much easier than I expected.

73's
Richard Clark, KB7QHC

4347. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 03:58:52 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <kcvqkvckhddrq10iomndc3s88e06cgijo2@4ax.com>
Source record: 109491

On Wed, 27 Aug 2003 22:22:34 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> It's obvious you didn't understand what you have been
>> saying for the last 6 months.
>
>Couldn't possibly be a lack of understanding on your part, eh?
>Which is more likely? That I don't understand what I have been
>saying or that you don't understand what I have been saying?
>Exactly what is it that you think I have said that is wrong?
>
>I have always said, and I will continue to say, if you understood
>what I was saying, you would agree with me. You have said nothing
>that has contradicted anything I have said.

Hi Cecil,

I didn't post a thing that you didn't already say. :-)

That it confuses you is par for the course, even with the prospect of
a 50% discount. Frankly, I couldn't imagine how you could possibly
continue to disagree - with yourself.

73's
Richard Clark, KB7QHC

4348. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 04:17:05 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308272017.13412270@posting.google.com>
Source record: 109492

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<9bKdnTq44-s1dtGiXTWJiQ@comcast.com>...
>
> According to Adler, Chu, and Fano, "Electromagnetic Energy Transmission and
> Radiatin", John Wiley, 1960, (60-10305),
> when they talk about lossy lines, and say that Zo is complex in the general
> case, they come up with a maximum value for the reflection coefficient of (1
> + SQRT(2)). Eq 5.14b. Remember, it is a lossy line; so, the reflected
> voltage gets smaller as you move away from the load. Somebody might want to
> check this out, in case I misunderstood something. BTW, the three authors
> were all MIT profs.
>
> Tam/WB2TT

Les Besser, Pozar, and Kurokawa are all PhDs too.

But a PhD is only human too.

Could you send me that paper?

Slick

4349. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 04:30:40 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308272030.6968c33a@posting.google.com>
Source record: 109493

Roy Lewallen <w7el@eznec.com> wrote in message news:<vkpts5pianfn98@corp.supernews.com>...
> The problem is in leaping to the conclusion that a reflection
> coefficient greater than one means that more energy is coming back from
> the reflection point than is incident on it. It's an easy conclusion to
> reach if your math skills are inadequate to do a numerical analysis
> showing the actual power or energy involved, or if you have certain
> misconceptions about the meaning of "forward power" and "reverse power".
> But it's an incorrect conclusion. Then, having come to the wrong
> conclusion, the search is on for ways to modify the reflection
> coefficient formula so that a reflection coefficient greater than one
> can't happen and thereby disturb the incorrect view of energy movement.
> It's simply an example of faulty logic combined with an inability to do
> the math. Adler, Chu, and Fano do understand the law of conservation of
> energy, and they are able to do the math.
>
> Roy Lewallen, W7EL
>

Hehe...Whose the bully now, Roy?

It very simple Roy, and no complex math is needed to understand
it. The port impedance does not change from when the incident power
is launched and when the reflected power returns, so the power will be
((Vrms)**2)/Zo). So if the RMS voltage returning is greater that the
power you put in, you MUST have an active device.

If you simply square the MAGNITUDE of the voltage reflection
ratio, you will get the power reflection ratio. So if the voltage RC
is greater than one, so will be the power reflection coefficient.

This is so basic, Roy, that i don't see how someone who I had
admired before cannot understand it! And please understand that i
didn't invent the conjugate equation, it has been there all along.
Reg just convinced me that the "normal" R. C. equation must be wrong
for complex Zo. And he is correct.

Please look it up in any basic RF book: For a passive network,
0=<rho=<1. But the R. C. can never be more than one for a passive
network.

Slick

4350. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 04:38:47 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308272038.366a25f8@posting.google.com>
Source record: 109494

tdonaly@aol.com (Tdonaly) wrote in message
news:<20030826234526.21977.00000954@mb-m07.aol.com>...
> >
> > And why "Black-faced"?
>
> It's a classical allusion - a test. You failed. Now I know
> more about you.
>
> >
> > And many of the other "adults" in this NG act infantile IN THEIR
> >OWN WAY.
> >Witness how Roy will compare someone to his adolescent son, when they
> >don't agreed with him. And then look at Cecil. Same sh**.
> >
>
> Classic case of projection.
>
> >
> > And you know, you could be a high-school drop out for all i care.
> >The great thing about the NGs is that people don't judge you by your
> >age or looks, only by what you write.
>
> In that case, you're in trouble.
>

Bill Gates was a college-dropout. So was Steve Wozniac. That didn't stop them.

> > If you wrote logically, like
> >Richard, then i would respect you...but you don't. I don't care where
> >Richard went to school, he knows his sh**.
>
> Because you think he agreed with you.
>

Well, he doesn't disagree with me just because he doesn't like me, that's
for certain.

> Anyway, you've satisfied my curiosity. Thank you. If the other
> members of the newsgroup want to read and respond to your posts,
> fine. Most of us, though, went through middle school once and don't
> want to repeat the experience. Good luck with your job search.
> 73,
> Tom Donaly, KA6RUH

Good luck with the rest of your life Tom, and i look forward to
being on your kill-file list, it would save us both the hassle.

Slick

4351. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 05:06:44 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <E5g3b.19246$8i2.10809@newsread2.news.atl.earthlink.net>
Source record: 109495

Slick:

[snip]
> Les Besser, Pozar, and Kurokawa are all PhDs too.
>
> But a PhD is only human too.
>
> Could you send me that paper?
>
> Slick
[snip]

Heh, heh...

I presume you have never met up with a certain Dr. Nathan Cohen who used to frequent this newsgroup.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4352. FRACTAL ANTENNA

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 05:14:11 UTC
From: nedrog@aol.comNOSPAM
Message-ID: <20030828011411.12631.00000589@mb-m28.aol.com>
Source record: 109496

LQQking for a copy of the FRACTAL Antenna for 10m, published I think back in the late '90's, in 73 or Ham Radio mag??

Thanks

Howard W3CQH

4353. Re: Mother Nature's reflection coefficient...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 05:17:48 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <0gg3b.19276$8i2.9339@newsread2.news.atl.earthlink.net>
Source record: 109497

Yuri:

[snip]
> Sounds like radio paradise Peter. We almost bought island in Maine, only
to
> find that there was erosion going on and environazis were oposed to any
shoring
> up of private property. It was like a dream, at the end of peninsula,
separated
> by abt 200 ft channel which would emerge at low tide and allow Jeep to get
> through. Power and telephone feeding two cottages (low and high band), oh
well!
> Found another place at Cape Breton, I hope to fire up from there in some
> contests, it is a park I believe.
>
> 73 Yuri
[snip]

We too have a Nova Scotia place [a condo] on the Halifax waterfront but I
don't have
any antennas up there yet either. I hope to have antennas up in both
places, i.e. Indialantic
and Halifax probably later in the New Year.

My current radio hobby project, fitting it in between consulting jobs. I'm
supposed to be fully
retired but find that I am only semi-retired :-). is to outfit my Expedition
with an IC-706 and a
Tarheels screwdriver both of which I bought just after Dayton. But I
haven't even drilled holes
in the Expedition yet.

Procrastination is ruining my hobby!

I've never been HF mobile, wanted to try that.

I was thinking I might like to try some DXpeditioning now that I am supposed
to have the time.

Sigh.

--
Peter K1PO [ex VE1AEX, VE3DZK, VE2POB]
Indialantic By-the-Sea, FL.

4354. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 05:55:06 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <_Og3b.19368$8i2.5884@newsread2.news.atl.earthlink.net>
Source record: 109498

David:

[snip]
> case 1: transmission line with a load.. this is the 'classical' case
> studied in ee classes world wide that yeilds the voltage or current
> reflection coeff of (Zo-Zl)/(Zo+Zl). the derivation is extremely simple
and
> takes into account losses on the transmission line properly. a
'conjugate'
> match has nothing to do with this discussion, and nothing in the driving
> source is important to the calculations.
>
> case 2: generator feeding a load... this is the other problem that has
> somehow been pulled into this thread and keeps getting mixed up with case
1
> above. in this case we have a load impedance... however you may derive
it,
> just as a lumped load or as a load at the end of a transmission line
> transformed back to the generator via the appropriate transmission line
> methods... this case is used to solve for maximum power transfer from the
> generator that has an internal impedance to the load impedance (note, this
> is the load impedance AS TRANSFORMED TO THE GENERATOR END OF THE LINE!).
in
> this case you can solve for the maximum power tranfer and get your
conjugate
> match condition, essentially where the generator and load have opposite
> reactances but the same real resistance. in one web site and apparently
> other books someone has defined another type of reflection coefficient
that
> looks at this junction between the generator with its impedance and the
load
> impedance, this one apparently includes the conjugate of the load
impedance
> in the numerator.
>
> keep your conditions straight or these discussions will go on for ever
with
> both sides knowing they are right and that the other one is wrong.... but
> only because they are discussing two different problems.
[snip]

No, I can't keep them separate, because essentially they are the same!

Consider a transmission line of surge impedance Zo(w) = Zo(w) where Zo(w) is
in general complex:

Zo(w) = sqrt[(R + jwL)/(G + jwC)] where

R, L, C and G are the traditional distributed primary parameters.

Now consider that it is possible to synthesize Zo(w) as an ordinary impedance, instead of a
surge impedance, as closely as desired.

Now design a generator [Thevenin Equivalent for example] with constant voltage source
of voltage "2a" Volts RMS, behind that impedance of Zo(w) you just synthesized. I use
the symbol "a" in the generator voltage simply because the generator voltage *is* the incident
voltage, it is actually twice the incident voltage, but in fact is the cause or prime mover for
the incident or forward voltage on the line, and so I call it what it is "2a". The generator
voltage is really just a scaled version of the incident voltage on the line.

Connect that generator of "internal" impedance Zo(w) to a semi-infinite chunk of that transmission
line of impedance Zo(w), so that Zo(w) becomes "the load Zl" on that generator and you have an
image match between the generator and its' load. You now have the semi-infinite line terminated
in its' own surge impedance Zo(w).

At the connection of this generator and load [which just happens to be a semi-infinite transmission line
of surge impedance Zo(w)] the incident voltage wave consists of "a" Volts RMS across the line and
b = 0 Volts RMS of reflected voltage across the line.

"The reflection coefficient" at the generator and the input to the line is then the ratio of the reflected
voltage b to the incident voltage a, rho = b/a. In this case rho = (Zo - Zo)/(Zo + Zo) = 0
[in both directions!] and the reflected voltage on the line is b = 0. I use "a" and "b" because those
are the symbols usually used in the Scattering Matrix formulation and they are a lot simpler to
type than the usual Vfwd and Vref, for forward and reflected voltage, etc... Don't you agree
that "a" is a better symbol than "Vfwd" and "b" is a better symbol than "Vref"?

Note that the open circuit voltage of the generator is "2a" Volts RMS and is just twice the incident
[forward] voltage at the end of the line. Actually the 2a volts is the cause or prime mover for the
incident voltage at the line's terminals.

And so... I assert that the connection of a generator of impedance Zo to a load of impedance Zo is
indistinguishable from the connection of two semi-infinite lines of surge impedance Zo.

Is this not right? All the currents and voltages and waves are the same.

This is an "image match".

Now to see the difference between an image match and a conjugate match, just change the generator impedance
from Zo to the conjugate of Zo. i.e. if Zo = r + jx, just make the generator impedance conj(Zo) = r -jx. Then leave everything else the same and recompute rho and b.

These two scenarios both of which entail the connection of a generator to a load, one image matched to the load and the other conjugate matched to the load, with the load being a semi-infinite line of surge impedance Zo, ties up the whole discussion in one neat little package, no?

And there are not two separate cases as you suggest, one being generator impedance matching and the other being transmission line interconnections.

Generator impedance matching and transmission line interconnections are identical situations, having all the same variables i, v, a, b, etc... you can look at reflection problems in either scenario, transmission lines or generators and loads. The calculations and formulas you use are all the same. They are not different as you suggest.

Thoughts, comments?

--
Peter K1PO
Indialantic By-the-Sea, FL.

4355. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 06:07:08 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <g_g3b.19373$8i2.3985@newsread2.news.atl.earthlink.net>
Source record: 109499

Cecil:

[snip]
> Given a coherent light source, like a laser, and exactly the right indices
> of refraction, can you describe in a nutshell, how non-glare thin-film
> coating works using only particles? Do out of phase photons cancel each
> other when they are traveling in the same direction?
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

In a nutshell, photons do not cancel. :-)

According to the [strange and un-intuitive] quantum electrodynamics theory a photon can literally be in two places at once. i.e. if you send a photon towards two slits in a wall, it will pass through both slits simultaneously, and interfere with itself, but if you put a photon counter at the slits, on either side, you will count only one photon.

Nobody's intuition works for QED!

To get engineering answers, you just have to "crank" the mathematics, or manipulate Feynman's little diagrams, and find out what happens.

Apparently there is no "why" and no good analogies for photon/electron interactions to situations in our "normal" world.

And QED is now accepted by all of modern science and forms the basis of all electrodynamics and is indeed the phenomena behind the waves we all discuss here on rraa!

Indeed when you resolve or magnify the aggregate wave models we discuss here on rraa down into their constituent photons, QED is what you get!

QED underlies and superceeds all wave mechanical theories. And waves are replaced by probabilities.

Waves are an illusion, they are not the way Mother Nature works!

Deal with it!

--
Peter K1PO
Indialantic By-the-Sea, FL.

4356. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 06:25:49 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F4DA06D.678DBAED@cwis.net>
Source record: 109500

Walter,
Other than in very broad terms, there's not really
any answer to that question. If you're hearing stations
in Egypt, Japan and Moscow, then I'd say your antenna
wasn't doing bad at all. Could you beat it's performance
with some other antenna? Probably, but do you have the
resources to put up that better antenna? Beats me...
'Doc

4357. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 06:27:40 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <whh3b.116904$0v4.8374899@bgtnsc04-news.ops.worldnet.att.net>
Source record: 109501

If anyone is interested in really getting to the bottom of this endless jousting, turn to page 136 of "Theory and Problems of Transmission Lines" by Robert A. Chipman. This is a Schaum's Outline book - mine is dated 1968. Many professionals acknowledge that this is one of the most succinct and revealing accounts of t-line theory to be found. Mathematical enough to be rigorous but readable and highly useful.

Starting in Section 7.6, Chipman derives the full set of equations for lines with complex characteristic impedance. I will make no effort here to repeat the development with ASCII non-equation symbols, but the bottom line is that in the general case, Zo is indeed a complex number which can be highly frequency-dependent.

Under the condition of certain combinations of physical parameters of the line, Zo does indeed become actually real - the so-called Heaviside Line where R/L=G/C where the symbols have the usual meanings - and independent of frequency. This is the only case wherein a lossy line can have a real Zo.

Finally, he clearly shows how terminating an actual physical line appropriately can result in a reflection coefficient as large as 2.41.

This revelation DOES NOT imply that the reflected wave would bear more power than the incident wave. For a line to display this behavior, it must first of all have a high attenuation per wavelength. Due to this high attenuation, the power in the reflected wave is high for only a short distance from the termination.

A couple of surprising consequences of this:

1. in order to terminate a line with complex Zo such that rho is greater than 1, the reactance of the load must be equal and opposite to the reactive term of Zo. In other words, the line and the load form a resonant circuit separated from "the rest of the system" by the very lossy line.

2. calculation of the power at any point on a line with real Zo, lossy or not, is simply Pf - Pr. But for a complex Zo, this is no longer true and a much more complex set of equations - given by Chipman - must be used. See his equations 7.34 and 7.35.

Finally, it should be understood that these effects are found almost entirely on low-frequency transmission lines. Dealing with complex Zo is routine with audio/telephone cable circuits and the like.

At HF, the reactive component of Zo for most common lines is so small as to be safely and conveniently neglected. For example, RG-213 at 14 MHz has a Zo of 50-j0.315 ohms. The same line at 1000 Hz has a Zo of 50-j35.733 ohms. (Values taken from the TLDetails program)

When terminated in 50+j0 ohms, the SWR on the line is 2.012.
When terminated in 50-j35.733 ohms, the SWR is 1:1 as would be expected. But when terminated in 50+j35.733 ohms, the SWR is a whopping 5.985.

RG-213 is nowhere near lossy enough to display the resonant-load effects Chipman discusses, but these data give some idea of the perhaps unexpected consequences of using even a common line like RG-213 at a low frequency.

Taken to 100 Hz, we find Zo = 50 - j 113.969 ohms and when terminated in 50 + j 112.969, rho is determined to be 2.25839. Note that the termination is a passive circuit in all these examples.

I urge anyone seriously interested in understanding transmission line theory to include Chipman on their bookshelf. Despite its assumed low station as a Schaum's Outline book, it provides a source of information and understanding seldom matched by any text.

73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

----- Original Message -----
From: "Dr. Slick" <radio913@aol.com>
Newsgroups: rec.radio.amateur.antenna
Sent: Wednesday, August 27, 2003 1:18 AM
Subject: Reflection Coefficient Smoke Clears a Bit

> Hello,
>
>
> Actually, my first posting:
>
> Reflection Coefficient =(Zload-Zo)/(Zload+Zo)
>
> was right all along, if Zo is always purely real. No argument there.
>
>
>
> However, from Les Besser's Applied RF Techniques:
>
> "For passive circuits, 0<=[rho]<=1,
>
> And strictly speaking:
>
> Reflection Coefficient =(Zload-Zo*)/(Zload+Zo)
> Where * indicates conjugate.
>
> But MOST of the literature assumes that Zo is real, therefore
> Zo*=Zo."
>
> This is why most of you know the "normal" equation.

>
>
> And then i looked at the trusty ARRL handbook, 1993, page 16-2,
> and lo and behold, the reflection coefficient equation doesn't have a
> term for line reactance, so both this book and Pozar have indeed
> assumed that the Zo will be purely real.
>
>
> Here's a website that describes the general conjugate equation:
>
>
> http://www.zzmatch.com/lcn.html
>
>
>
> Additionally, the Kurokawa paper ("Power Waves and the
> Scattering Matrix") describes the voltage reflection coefficient
> as the same conjugate formula, but he rather foolishly calls it a
> "power wave R. C.", which when the magnitude is squared, becomes the
> power R. C.
>
> Email me for the paper.
>
>
>
> As Reg points out about the "normal" equation:
>
>
> "Dear Dr Slick, it's very easy.
>
> Take a real, long telephone line with Zo = 300 - j250 ohms at 1000 Hz.
>
> (then use ZL=10+j250)
>
> Magnitude of Reflection Coefficient of the load, ZL, relative to line
> impedance
>
> = (ZL - Zo) / (ZL + Zo) = 1.865 which exceeds unity,
>
> and has an angle of -59.9 degrees.
>
> The resulting standing waves may also be calculated.
>
> Are you happy now ?"
> ---
> Reg, G4FGQ
>
>
>
> Well, I was certainly NOT happy at this revelation, and researched

> it until i understood why the normal equation could incorrectly give
> a R.C.>1 for a passive network (impossible).
>
> If you try the calculations again with the conjugate formula, you
> will see that you can never have a [rho] (magnitude of R.C.)
> greater than 1 for a passive network. You need to use the conjugate
> formula if Zo is complex and not purely real.
>
> How could you get more power reflected than what you put into
> a passive network(do you believe in conservation of energy, or do
> you think you can make energy out of nothing)? If you guys can tell
> us, we could fix our power problems in CA!
>
> Thanks to Reg for NOT trusting my post, and this is a subtle detail
> that is good to know.
>
>
> Slick

4358. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 06:58:21 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308272258.69d14f1e@posting.google.com>
Source record: 109502

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bijlojcqj1@titan.btinternet.com>...
...
> But these days so-called
> engineers are more inclined to misplace their blind faith in computer
> programs. ;o)

Computer programs...computer programs...now where have I seen them.
Oh, yes, it's this chap in Great Britain that offers a bunch of them
for free, imperfections and all...

;o) backatcha -- and of course, since this is an amateur group, there
are no engineers here.

Cheers,
Tom
who comes equipped with _pen_, paper and computer programs--and
sometimes maybe even a brain (smarter than the average bear?).
Pencils waste too much time. (Though not so bad as newsgroups in that
regard.)

4359. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 07:20:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ag8rkvkobhooi0kcpv96qv96p2c9pq99up@4ax.com>
Source record: 109503

On Thu, 28 Aug 2003 06:27:40 GMT, "George, W5YR" <w5yr@att.net>
wrote:

>... "Theory and Problems of Transmission Lines" by
>Robert A. Chipman. This is a Schaum's Outline book - mine is dated 1968.
>Many professionals acknowledge that this is one of the most succinct and
>revealing accounts of t-line theory to be found. Mathematical enough to be
>rigorous but readable and highly useful.
>

Hi George,

I have notice you recommended this author several times, and yet you
have casually dismissed his rather straightforward coverage relating
to the characteristic Z of a Transmitter:
>> There is no need to know, since its value, whatever it might be, plays no
>>role in the design and implementation of the external portion of the system
>>driven by the transmitter.

How do you reconcile this with his coverage entitled
"9.10. Return loss, reflection loss, and transmission loss."

You may wish to observe the clearly marked figure 9-26 and
specifically the paragraph that follows (or the entire section for
that matter) that quite clearly reveals what is everywhere else
implied: that ALL SWR discussion presumes a Zc matched source. You
may observe that Chapman thus refutes your statement above. Further,
Chapman goes to some length to describe the Smith Chart's appended
line evaluation scales at the bottom to this very matter.

To substantiate this from other sources I have offered a very simple
example that shows this importance that to date has defied "first
principle" analysis (not first principles however, merely the claim of
its being practiced analytically in this regard). I will offer it
again, lest you missed it.

The scenario begins:

"A 50-Ohm line is terminated with a load of 200+j0 ohms.
The normal attenuation of the line is 2.00 decibels.
What is the loss of the line?"

Having stated no more, the implication is that the source is matched
to the line (source Z = 50+j0 Ohms). This is a half step towards the
full blown implementation such that those who are comfortable to this
point (and is in fact common experience) will observe their answer and
this answer are:

"A = 1.27 + 2.00 = 3.27dB"

"This is the dissipation or heat loss...."

we then proceed:

"...the generator impedance is 100+0j ohms, and the line is 5.35 wavelengths long."

Beware, this stumper has so challenged the elite that I have found it dismissed through obvious embarrassment of either lacking the means to compute it, or the ability to simply set it up and measure it. It takes two resistors and a hank of transmission line, or what has been described by one correspondent as:
>>There is no institutionalized ignorance, just a
>>lot of skepticism regarding the reliability of the
>>analysis methods and the measurement methods.
Clearly a low regard for many correspondent's abilities here, and hardly a prejudice original to me. Imagine the incapacity of so many to measure relative power loss - a CFA salesman's dream population.

Actually it is quite obvious several recognize that follow-through would dismantle some cherished fantasies. Chapman clearly knocks the underpinnings from beneath them without any further effort on my part. But then, as you offer, they would merely dismiss it by confirming another prejudice:
>its assumed low station as a Schaum's Outline book

I would point out to all, that Chapman's material dovetails with what would have been then current research and teachings of the National Bureau of Standards. Prejudice has "refuted" those findings too. :-)

73's
Richard Clark, KB7QHC

4360. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 09:11:22 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkrhq55enee8ff@corp.supernews.com>
Source record: 109504

Thanks for hanging in there. Let's see where this one goes. . .

Peter O. Brackett wrote:
> Roy:
>
> [snip]
>
>>Here you've lost me. a is the forward voltage in the transmission line.
>>What can be the meaning of its facing a driving point impedance? The
>>forward wave sees only the characteristic impedance of the line; at all
>>points the ratio of forward voltage to forward current is simply the Z0
>>of the line. So I don't believe that it sees 2r anywhere.
>>
>>This is where I'm stuck. If you can show where along the line the
>>forward voltage wave "faces" 2r, that is, Vf/If = 2r, I can continue.
>>
>>Roy Lewallen, W7EL
>
> [snip]
>
> I appologize if I am "going to fast" for the limitations inherent in
> NewsGroup postings.
>
> Let me take it a little more slowly here...
>
> To see that there is essentially no difference between my (apparently two)
> different
> definitions of the incident and reflected waves a and b, consider the
> following scenario
> of an actual transmission line having surge impedance [characteristic
> impedance] Zo.
> Let Zo be in general complex. i.e. Zo = sqrt[(R + jwL)/(G + jwC)] where R,
> L, G,
> and C are the primary parameters of R Ohms, L Henries, G Siemens, and C
> Farads
> per unit length.
>
> Now at any particular frequency w = 2*p*f you will find that this general
> complex
> surge impedance Zo evaluates to a complex number, say Zo(jw) = r + jx.
> Later
> let's let r = 50 Ohms and x = 5 Ohms so that we can work out a numerical
> example.

The numbers aren't necessary, but that's fine.

>
> Consider either a semi-infinite length of this Zo line, or even a finite
> length of the Zo line
> terminated in an impedance equal to Z0. I am sure that you will agree that
> both the
> semi-infinite Zo line or the finite length Zo line terminated in Zo have the
> same
> driving point impedance namely Zo.

The terminated line I'm comfortable with. "Semi-infinite" isn't in my
lexicon, but I'll see where it goes.

> Now excite this semi-infinte Zo line by an ideal generator of open circuit
> voltage
> Vi = 2*a behind an impedance equal to the surge impedance Zo. In other
> words
> this is a Thevenin generator of ideal constant voltage 2a behind a complex
> impedance
> of Zo. And so... since an ideal voltage source has zero impedance, the
> termination
> at the source end of this semi-infinite Zo line is Zo,
> . . .

Maybe the trouble is with the "semi-infinite" aspect, but here we part
company again. The termination at the source end of the line is, by
definition, the source impedance, which is zero, not Z0.

Can't you do this analysis with a plain, ordinary, transmission line of
finite length? Lossless is ok, lossy is ok. Or is your proof true only
if the line is "semi-infinite" in length (whatever that is)?

Roy Lewallen, W7EL

4361. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 09:35:28 UTC
From: Bill <lbj@congress.com>
Message-ID: <bikicl$af92v$1@ID-175813.news.uni-berlin.de>
Source record: 109505

The old Heathkit dual coil setup is what you are talking about.
They were not single band but could be used with any 300ohm
fed folded dipole on any of the 80 - 10 bands in use at that time.

Bill

Cliff Gieseke wrote:
> Back then, as a teenager, I had one with 300 ohm twinlead and a short run of
> coax between a balun and a Harvey Wells TBS50c. ... A number of old timers
> then were, of course, using open line feeders.
>
> Cliff, W4ZFL
>
>>Fifty years ago they fed it with open transmission line and a balun
>>was not needed.
>>
>>Danny, K6MHE
>
>
>

4362. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:10:53 UTC
From: kd1@sympatico.ca
Message-ID: <3F4DD52D.D0D61D9F@sympatico.ca>
Source record: 109508

Richard Harrison wrote:
>
> Keith wrote:
> "I do not find that step 7) is in error."
>
> Step 7) declares power is zero at quarter wave points where volts or
> amps are zero in the standing wave pattern.

Unfortunately, probably due to my poor description, you have missed
the point I was trying to make.

You are, I think, disagreeing with the RESULT of step 7.

Even though the result may be wrong, step 7) can be correct.

Step 7) again:
"7) From 6), the energy crossing quarter wave points is 0"

This is saying that if the result of step 6) is correct, then
the result of step 7) is correct. The transformation from 6)
to 7) merely integrated power to get energy; a common and
correct thing to do.

So if you disagree with the result of step 7), it is in step 6)
which you must search for the error since step 7) is correct.

If step 6) is correct, then search in step 2) and step 5) for
the error.

I suspect that like Cecil, you will end up at step 2) as the
source of what you perceive to be an error.

Then, when we resolve whether 2) is in error, we will know
whether the result of 7) is in error.

...Keith

4363. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:17:00 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4dd81a$1_8@corp.newsgroups.com>
Source record: 109506

Richard Clark wrote:
> You answered the question perfectly, you see no relevance with
> standard optics to your "optics."

You are still confused, Richard. "My optics" is standard optics.
--
73, Cecil http://www.qsl.net/w5dxp

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4364. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:18:37 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4dd87b$1_8@corp.newsgroups.com>
Source record: 109507

Richard Clark wrote:
> Frankly, I couldn't imagine how you could possibly
> continue to disagree - with yourself.

I don't and you don't either. You just haven't realized it yet.
Exactly what is it that you think you and I disagree about?
--
73, Cecil http://www.qsl.net/w5dxp

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4365. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:21:52 UTC
From: kd1@sympatico.ca
Message-ID: <3F4DD7C0.FF61BD41@sympatico.ca>
Source record: 109509

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Seems to me that the sinusoidal standing wave with minima and maxima
> > at the quarter wave points can only arise with single frequency
> > sinusoidal excitation of the line. Are there other signals which
> > will produce this result?
>
> Probably not, but that makes sinusoids unique, not magic.

Magic was your moniker not mine. But I am glad that you agree.

> >>What about Ramo and Whinnery's forward Poynting vector and reflected
> >>Poynting vector? Why do you choose to ignore them?
> >
> > I haven't used them because I don't need them to arrive at an answer.
>
> You need them to keep from making the same mistakes over and over.

I've being using p(t) = v(t) * i(t) and simply arguing that when
v(t) or i(t) is zero for all t, then there is no power.

Poynting won't change a thing. There is no P when E or H is zero.

So the debate can be had with the simpler p(t) = v(t) * i(t).
There is no need to complexify.

...Keith

4366. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:45:44 UTC
From: kd1@sympatico.ca
Message-ID: <3F4DDD58.E273C439@sympatico.ca>
Source record: 109513

Richard Harrison wrote:
>
> Keith wrote:
> "Are there other signals which would produce this result?"
>
> A short-circuit produces a voltage inversion. The plus volts and the
> minus volts make a zero in a short.
>
> Imagine a couple of identical positive pulses separated by some distance
> and traveling in the same direction along a long transmission line which
> has a short approached by the pulses. When the first pulse hits the
> short it is inverted and reflected to travel back toward its source as a
> minus voltage pulse.
>
> When the first pulse encounters the second pulse they disappear at the
> instant of coincidence, but otherwise, travel on their merry ways. What
> happens at coincidence is transfer of the energy associated with volts
> to the energy wave associated with amps as energy can`t be obliterated
> while the volts disappear.

I do like pulses. Thinking about pulses on the line certainly helped
clarify my understanding of how lines worked.

So what happens when two pulses collide? I don't think you will like
this answer either, but here goes.

First, remember that power and energy are not the same. Power can
become zero while the energy remains. It simply means that the
energy is now stored in the capacitance or inductance (or equally,
the E field or H field) but is not moving. So no energy is lost
or destroyed when the power goes to zero.

So what happens to these two pulses? They bounce off of each other
and return whence they came. This must happen since the voltage on
the region of the line where the two pulses collide remains zero
and since p(t) = v(t) * i(t) there is no power in this region
so there must be no energy flowing. You would observe exactly
the same result were you to short the line at the point of
collision just before the collision occurred. Two pulses colliding
is just like a reflection.

As a simple analogue, consider two identical elastic balls rolling
towards each other. They bounce back after the collision.

On a line this is easier to visualize with two negative pulses
colliding. Each pulse consists of a clump of charge. When these

clumps of charge collide, remembering that like charge repels, they bounce back.

What actually happens during the collision? With balls, the energy is stored in the deformation of the ball and then released as the balls separate. With pulses, the power stops (current is zero), and the energy is stored in the capacitance of the line in the region of the collision. After all the energy has stopped flowing (no power, zero current, all energy in the E field), the energy is released into the reflected pulses and once again, there is energy moving (power) on the line.

...Keith

4367. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:49:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4ddfa9_8@corp.newsgroups.com>
Source record: 109511

Peter O. Brackett wrote:
> In a nutshell, photons do not cancel. :-)

Is this quote from _Optics_, by Hecht incorrect? "Unlike ordinary objects, photons cannot be seen directly; what is known of them comes from observing the results of their being either created or annihilated."

> Waves are an illusion, they are not the way Mother Nature works!

Note that waves can pass through two slits at the same time. :-)

A footnote from _Optics_: "... although the light-is-corpuscular model has wide acceptance ... and is a crucial part of the contemporary discourse, like almost everything else in physics, it is not yet established beyond all doubt. See, for example, the summary article by R. Kidd, J. Ardini, and A. Anton, "Evolution of the modern photon", Am. J. Phys. 57 (1), 27 (1989)."

> Deal with it!

Accept on faith the existence of God and virtual photons? :-)
To me, God and virtual photons seem to both be band aids for things not yet understood by man. To me, the following two statements don't seem all that different.

1. Although completely undetectable, virtual photons have to be the vehicle by which electrons communicate their presence to each other.

2. Although completely undetectable, God has to be the vehicle by which everything was created.

It just occurred to me that virtual photons might explain telepathy. What do you think?
--
73, Cecil http://www.qsl.net/w5dxp

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4368. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:52:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4de089$1_8@corp.newsgroups.com>
Source record: 109512

George, W5YR wrote:
> I urge anyone seriously interested in understanding transmission line theory
> to include Chipman on their bookshelf.

It's out of print, George. How much will you take for yours? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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4369. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:53:18 UTC
From: "Dick, AA5VU" <aa5vu@qsl.net>
Message-ID: <aa5vu-29C7EF.05531828082003@central.isp.giganews.com>
Source record: 109510

Very interesting subject. It's sort of like getting new eye glasses. You don't realize how bad the old glasses were until you get new glasses. With regards to antennas we had the tin (steel) roof on our home replaced with a normal roof. After a few months I have come the conclusion my antenna system is working much better now. It was like getting a new antenna. I had no idea the steel roof was effecting the antenna performance. The SWR is the same but the 3 elment beam seems to work better with the new roof.

Dick, aa5vu

4370. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:58:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4de1c0$1_8@corp.newsgroups.com>
Source record: 109514

Richard Clark wrote:
> "...the generator impedance is 100+0j ohms, and the line is 5.35
> wavelengths long."

What does the generator impedance have to do with line losses?
--
73, Cecil http://www.qsl.net/w5dxp

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4371. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 10:58:57 UTC
From: kd1@sympatico.ca
Message-ID: <3F4DE071.F1E94001@sympatico.ca>
Source record: 109517

Richard Harrison wrote:
>
> I wrote:
> "As energy can`t be destroyed it had to be reflected by a hard short or
> open." Keith replied:
> "Or just stopped and stored."
>
> Wave energy is energy in motion. No motion, no waves.

There is no doubt that energy moves. The point of disagreement is on
how far it moves.

> Keith wrote:
> "I would strongly suggest that no energy crosses these points in the
> line where the voltage and current are always zero since p(t) is always
> zero."
>
> See my comment above on power as a function of time. Keith erred in
> saying "points in the line where the voltage and current are always
> zero", as where SWR volts are zero, amps are max, and vice versa.

This last is true, but p(t) = v(t) * i(t); volts and amps must be
present simultaneously for there to be power.

> I wrote:
> "If energy were turned around before it reached the end of the line,
> nulls more distant from the source than the turnaround point would not
> exist."
>
> Keith wrote:
> "Not so,---."
>
> There is no argument that can make wave interference where there are no
> waves. In a lossless line, pre-existing waves could circulate forever.
> But, our discussion relates to effects on actual lines.

There are many assumptions in this discussion which means it only
applies
to ideal lines. The extension to real lines, retains the fundamentals
but the details need tuning.

As a simple example, on a real line, the nulls are never 0.
But including this in the discussion would just make it more difficult
to locate the points of disagreement.

> Keith wrote:
> "Try visualizing how a step function charges the line."
>
> Totally irrelevant.

Understanding a step will help with understanding line
behaviour. This knowledge can then assist in understanding
sinusoidal steady state.

...Keith

4372. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 11:00:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4de269_8@corp.newsgroups.com>
Source record: 109515

Bill wrote:
> The old Heathkit dual coil setup is what you are talking about.
> They were not single band but could be used with any 300ohm
> fed folded dipole on any of the 80 - 10 bands in use at that time.

Used also with an all-HF-band (at the time) off-center fed dipole
(commonly called a Windom today).
--
73, Cecil http://www.qsl.net/w5dxp

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4373. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 11:03:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4de2fb$1_8@corp.newsgroups.com>
Source record: 109516

kd1@sympatico.ca wrote:
> I suspect that like Cecil, you will end up at step 2) as the
> source of what you perceive to be an error.

Which step the error is in depends upon whether you are talking
about NET energy or the forward and reflected component energies.
--
73, Cecil http://www.qsl.net/w5dxp

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4374. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 11:10:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4de49c$1_8@corp.newsgroups.com>
Source record: 109518

kd1@sympatico.ca wrote:
> Poynting won't change a thing. There is no P when E or H is zero.

Of course, there are the two component Poynting vectors which each
contain power. How else could (Pz-/Pz+) = |rho|^2

You are continuing to confuse NET power with component power. The
NET Poynting vector is zero. The component Poynting vectors are
Pz- and Pz+ and NOT zero as explained in Ramo & Whinnery. The sum
of the two Poynting vectors is zero at certain points because they
are 180 degrees out of phase at those points. 1/4WL away, they are
in phase.
--
73, Cecil http://www.qsl.net/w5dxp

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4375. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 11:11:07 UTC
From: kd1@sympatico.ca
Message-ID: <3F4DE34B.B59AD4B1@sympatico.ca>
Source record: 109420

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > This emphasis on NET seems to be the place where the difficulties
> > begin. An (ideal) voltmeter placed at a voltage minima on the line
> > indicates a voltage of 0 volts. You appear to be saying that
> > despite this indication of 0, there is actually voltage present.
>
> There are actually two voltages present of equal amplitude and
> opposite phase. Their phasor sum is zero volts.
>
> > - how do I determine what these voltages actually are?
>
> |Vfwd| = Sqrt(Pfwd*Z0) |Vref| = Sqrt(Pref*Z0)
>
> If the voltmeter reads zero, these two voltages are equal in magnitude
> and opposite in phase.

So when I use my voltmeter to measure a voltage, I actually have
two voltages present which sum to the reading.

When I do this on a D-cell, what are these two voltages?
When I read 0 on a piece of NMD-90, what are these two voltages?
When I read 0 on D-cell, what are these two voltages?
When I read 120 volts on a power outlet, what are these two voltages?
For each of the above, explain how you decided.

It would seem that this belief will lead to some serious decidability
issues.

And don't ever trust your voltmeter again.

...Keith

4376. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 11:13:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4de56d$1_8@corp.newsgroups.com>
Source record: 109419

kd1@sympatico.ca wrote:
> So what happens to these two pulses? They bounce off of each other
> and return whence they came.

This has been disproved many, many times. Do a web search for
"superposition" and learn how those waves flow unaffected right
through each other.
--
73, Cecil http://www.qsl.net/w5dxp

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4377. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 11:24:21 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4de7e4$1_8@corp.newsgroups.com>
Source record: 109421

kd1@sympatico.ca wrote:
> Understanding a step will help with understanding line
> behaviour. This knowledge can then assist in understanding
> sinusoidal steady state.

Looks like you are never going to understand the principles of
superposition and interference until you read and understand
those chapters in _Optics_ or similar reference. You continue
to make the same mistakes over and over in spite of the obvious
mental violations of the principles of physics which have been
explained to you.
--
73, Cecil http://www.qsl.net/w5dxp

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4378. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 11:38:59 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4deb53_8@corp.newsgroups.com>
Source record: 109422

kd1@sympatico.ca wrote:
> So when I use my voltmeter to measure a voltage, I actually have
> two voltages present which sum to the reading.

Yes, that's why you need a directional voltmeter or directional
wattmeter to separate the forward wave from the reflected wave
when reflections exist.

> When I do this on a D-cell, what are these two voltages?

Reflected voltage is zero during DC steady-state.

> It would seem that this belief will lead to some serious decidability
> issues.

If standing waves exist, there is one forward wave component and one
reflected wave component. If standing waves do not exist, there is
no reflected wave component. Shirley, you can tell whether standing
waves exist or not so you will know whether you are dealing with one
or two waves.

> And don't ever trust your voltmeter again.

Do you use a DC voltmeter to measure AC? Do you use a 60HZ AC voltmeter
to measure 1 GHz RF voltages? Do you use a 100MHz o'scope to look at
a light wave?

If reflections exist and you are using a non-directional voltmeter, you
will read the NET voltage. USE THE APPROPRIATE MEASURING INSTRUMENTS!
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4379. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 12:13:07 UTC
From: richardharrison@webtv.net
Message-ID: <23412-3F4DF1D3-74@storefull-2314.public.lawson.webtv.net>
Source record: 109424

Keith wrote:
"I suspect that like Cecil, you will end up at step 2) as the source of what you perceive to be an error."

Where ever the error first appears, it is obvious that "-the energy crossing quarter wave points is 0", is wrong.

Energy flow in a usual shortwave transmission line is continuous. You feed continuous sinewaves in and get continuous sinewaves out, no interruptions created by quarterwave point manifestations of standing wave zeros. Standing wave zeros don`t equal power stoppages. These zeros have zero effect on energy flow.

Proof is that a directional sensor finds the same power flow, forward or reflected, at a standing wave zero point as it does at a standing wave maximum, or at any point in between.

Power is joules per second (watts). A joule is the energy required to transport 1 coulomb between two points having a potential difference of 1 volt. So, if power crosses a point, energy crosses because it is a part of the power (the rate of doing work).

Best regards, Richard Harrison, KB5WZI

4380. Re: A Subtle Detail of Reflection Coefficients (but important to

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 12:33:41 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030828083341.10672.00000044@mb-m29.aol.com>
Source record: 109423

>
>2. Although completely undetectable, God has to be the vehicle by
>which everything was created.

>73, Cecil http://www.qsl.net/w5dxp

Last time when I tried to explain how the transistor radio works to my dog, she wiggled her tail: "It can't be and it don't taste no good" :-)

Yuri da BUm

4381. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 12:35:59 UTC
From: kd1@sympatico.ca
Message-ID: <3F4DF72F.768D2F4@sympatico.ca>
Source record: 109425

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > So when I use my voltmeter to measure a voltage, I actually have
> > two voltages present which sum to the reading.
>
> Yes, that's why you need a directional voltmeter or directional
> wattmeter to separate the forward wave from the reflected wave
> when reflections exist.
>
> > When I do this on a D-cell, what are these two voltages?
>
> Reflected voltage is zero during DC steady-state.

But how did you know this little cylinder with a bump on the
end produced DC? And why can't DC circuits have net voltages
derived from superposition? Seems that in your model you need
extra information before you know what your voltmeter is telling you.

I observe that you did not provide an answer for the other examples.

What about that power plug on the wall? Too difficult?

Feel free to assume that you own an abstract voltmeter which will
tell you the voltage as a function of time (an oscilloscope maybe?).

> > It would seem that this belief will lead to some serious decidability
> > issues.
>
> If standing waves exist, there is one forward wave component and one
> reflected wave component. If standing waves do not exist, there is
> no reflected wave component. Shirley, you can tell whether standing
> waves exist or not so you will know whether you are dealing with one
> or two waves.
>
> > And don't ever trust your voltmeter again.
>
> Do you use a DC voltmeter to measure AC? Do you use a 60HZ AC voltmeter
> to measure 1 GHz RF voltages? Do you use a 100MHz o'scope to look at
> a light wave?

Since we are discussing the world of the ideal, we can assume the
existence of ideal voltmeters.

> If reflections exist and you are using a non-directional voltmeter, you
> will read the NET voltage. USE THE APPROPRIATE MEASURING INSTRUMENTS!

So I will rephrase my question for your benefit:

When we measure a voltage using an ideal voltmeter, how do we know if this voltage is composed of components (I generalize, since similar difficulties arise in situations without reflections) so that we can do extra measurements and computations to learn the 'real' voltages and 'powers'?

If you wish, the wall outlet provides an excellent opportunity for explanation by example.

...Keith

4382. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 12:42:11 UTC
From: "Nick. O. Tin" <nick@nospam.org>
Message-ID: <3F4DF8A3.F673585D@nospam.org>
Source record: 109426

You don't!
It is this way: If You put up the antenna high enough, You might hear
A, B and C. However, You might not hear X,Y and/or Z, or at least
have very poor reception, as the radiating angle is to low for short
skip.
X,Y and/or Z might end up in the "skip zone". If You LOWER the antenna,
the semi-locals turn up, but You lose A,B and C.
So Your dipole CAN not pick up everything simultaneously.

N

Walter wrote:

> On the surface, this sounds like a stupid question, but how do I know
> my shortwave wire dipole antenna is picking up all it can?
>
> If I live in the St. Louis Missouri Area, is there a list of stations
> X, Y, and Z that I should be able to pick up? (thinking shortwave
> here, not local stations)
>
> And if so, If I can pick up station A from Egypt, station B from
> Japan, and station C from Moscow, then I'm doing really good?
>
> Just wondering.
>
> Thanks..

4383. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 12:54:36 UTC
From: richardharrison@webtv.net
Message-ID: <1973-3F4DFB8C-171@storefull-2317.public.lawson.webtv.net>
Source record: 109430

Keith wrote:
"Thinking about pulses on the line certainly helped clarify my
understanding of how lines work."

Time domain, frequency domain, its all the same.

If you have a distortionless line, that George, W5YR calls a "Heaviside Line", or if you have a lossless line of wide response and equal velocity for all frequencies, your pulse can remain undistorted. The pulse is then just a fundamental and a bunch of odd-harmonic frequencies.

Waves of single or multiple frequencies travel in opposite directions on a line transparently right through each other with no lingering effect upon each other. Waves don`t bounce off each other. They only bounce off impedance discontinuities.

Best regards, Richard Harrison, KB5WZI

4384. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 12:55:05 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <3Y2dnRDSs6MwZtCiU-KYuA@comcast.com>
Source record: 109427

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308272030.6968c33a@posting.google.com...
> Roy Lewallen <w7el@eznec.com> wrote in message
news:<vkpts5pianfn98@corp.supernews.com>...
>
> It very simple Roy, and no complex math is needed to understand
> it. The port impedance does not change from when the incident power
> is launched and when the reflected power returns, so the power will be
> ((Vrms)**2)/Zo). So if the RMS voltage returning is greater that the
> power you put in, you MUST have an active device.

Your use of the term complex math is appropriate in that V+, V-, and gamma
are all complex numbers. For the case of gamma = 2.41, its phase angle is
about 65 degrees, and the *real part* of gamma is 1.0.

Tam/WB2TT

4385. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 13:02:40 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <AKucnQXa9uzrYNCiXTWJhw@comcast.com>
Source record: 109428

"George, W5YR" <w5yr@att.net> wrote in message
news:whh3b.116904$0v4.8374899@bgtnsc04-news.ops.worldnet.att.net...
> If anyone is interested in really getting to the bottom of this endless
> jousting, turn to page 136 of "Theory and Problems of Transmission Lines"
by
> Robert A. Chipman. This is a Schaum's Outline book - mine is dated 1968.

George,

I took a course from Dr Chipman. The text he used was Adler, Chu, and Fano.
I bet he references that book.

Tam/WB2TT

4386. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 13:07:24 UTC
From: richardharrison@webtv.net
Message-ID: <1973-3F4DFE8C-173@storefull-2317.public.lawson.webtv.net>
Source record: 109429

Keith wrote:
"The last is true, but p(t) = v(t)*i(t); volts and amps must be present simultaneously for there to be power."

By the same token, a-c flow is discontinuous at all zero crossings! I don`t think so.

Best regards, Richard Harrison, KB5WZI

4387. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 13:47:47 UTC
From: remove_ok1sip@atlas.cz
Message-ID: <5f5159fa.0308280547.12f8e356@posting.google.com>
Source record: 109431

Try http://w1.859.telia.com/~u85920178/use/gdo.htm

BR from Ivan

"Tom Coates" <tecoates@comcast.net> wrote in message
news:<rQCdnfXCtI-Y9daiXTWJgA@comcast.com>...
> I recall reading about this many years ago but can't find it in any of the
> books I have now.
>
> How do I couple the meter to the antenna?
>
> The project is a 3-element 2 meter yagi and I'm trying to set the length of
> the driven element. I can't find a dip within the band using the rig and an
> swr bridge.
>
> Tom, N3IJ

4388. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 14:08:07 UTC
From: KAZeringue <kazeringue@aol.com>
Message-ID: <3F4E0D61.4070303@aol.com>
Source record: 109432

In the ARRL antenna book, in the chapter on portable antennas, there is an article on a folded dipole using 300 ohm tv twinlead, which is matched using a capacitor, or a stub of 300 ohm twinlead.

I've had one of these for 80 meters for over two years, and I'm quite happy with it. I made it with "rat shack" TV twinlead, exactly according to the cookbook, and it has a 1:1 SWR right at 3775. My rig has no problem matching across the entire band, and the SWR around 3510 or 3990 is just approaching 3:1.

I chose to use the stub match, because I had the twinlead handy. Dressing the stub away from the feed line is the biggest drawback I found.

Its mounted as a shallow vee, with the apex at about 50 feet, ends at about 30 feet.

Just a different method of matching, but its simple and functional.

73,
W4KAZ

4389. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 14:16:36 UTC
From: richardharrison@webtv.net
Message-ID: <24207-3F4E0EC4-281@storefull-2316.public.lawson.webtv.net>
Source record: 109434

Keith wrote:
"When we measure a voltage using an ideal voltmeter, how do we know if the voltage is composed of components---?"

Keith earlier gave an answer, the oscilloscope is appropriate for voltage composed of differing frequencies. But, for a voltage composed of same-frequency components, something more exotic is required to fit the situation, such as a directional coupler in addition to the scope or other meter.

Where a composite voltage of various frequencies exists, there are frequency-selective voltmeters to quantify individual components. The loading these components impose on a common system is based on the probability of their peaks coinciding.

Best regards, Richard Harrison, KB5WZI

4390. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 14:37:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e1512_5@corp.newsgroups.com>
Source record: 109433

kd1@sympatico.ca wrote:
> But how did you know this little cylinder with a bump on the
> end produced DC? And why can't DC circuits have net voltages
> derived from superposition? Seems that in your model you need
> extra information before you know what your voltmeter is telling you.

The extra information is that you are dealing with an RF transmission line with reflections. The reflections are somewhat equivalent to a second source. And in a two-source DC circuit, you can indeed have net voltages derived from superposition of the two source voltages. Put them in series adding and you get a voltage maximum. Put them in series subtracting and you get a voltage minimum.

> What about that power plug on the wall? Too difficult?

Too many sources, too many feedlines, too many loads. And the wavelength is really too long to illustrate RF transmission lines. I get a wavelength just over 3000 miles, which would stretch out straight from Texas to Alaska.

> When we measure a voltage using an ideal voltmeter, how do we know if
> this voltage is composed of components ...

For an RF transmission line, use a directional wattmeter to ascertain if reflected power exists. If your 50 ohm SWR meter is in a 50 ohm Z0 environment, it will indicate the presence or absence of reflected power.

> If you wish, the wall outlet provides an excellent opportunity for
> explanation by example.

Nope, it doesn't. That wall outlet doesn't have one source, one feedline, and one load. If you had one 60 Hz generator hooked up to 3100 miles of lossless transmission line, you could certainly observe reflections over that one wavelength of wire.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4391. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 15:36:32 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ie7skvorv47k4g55iic0bffk68r9lck73u@4ax.com>
Source record: 109435

On Thu, 28 Aug 2003 09:02:40 -0400, "Tarmo Tammaru"
<t-tammaru@home.com> wrote:

>
>"George, W5YR" <w5yr@att.net> wrote in message
>news:whh3b.116904$0v4.8374899@bgtnsc04-news.ops.worldnet.att.net...
>> If anyone is interested in really getting to the bottom of this endless
>> jousting, turn to page 136 of "Theory and Problems of Transmission Lines"
>by
>> Robert A. Chipman. This is a Schaum's Outline book - mine is dated 1968.
>
>George,
>
>I took a course from Dr Chipman. The text he used was Adler, Chu, and Fano.
>I bet he references that book.
>
>Tam/WB2TT
>

Hi Tam,

It is the second reference and it is found on page 8. No doubt those
authors also understand that source characteristic Z must be equal to
transmission line Z to characterize SWR on the line. Of course, at
this point I cannot vouchsafe for that specifically, however, it seems
unlikely anyone here will negate the premise.
Except to say "t'ain't so." ;-)

I said "at this point" as this could be resolved (or from the other 11
references) by my visiting my engineering library at the U. This will
not prohibit others from denial however which simply mocks Chapman's
work and those he references.

I won't put the challenge I have offered others to you. You probably
would have answered it by now if you could have.

73's
Richard Clark, KB7QHC

4392. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 15:36:38 UTC
From: Dave Shrader <david.shrader@comcast.net>
Message-ID: <akp3b.220562$Oz4.59035@rwcrnsc54>
Source record: 109436

Terrence R. Redding Ph.D. wrote:
> Tom I don't have an answer for you.
>
> I came across your message because I tried to use the MFJ Antenna Analyzer
> to tune a 20 meter quad, and could not figure out how to get the "grid dip"
> function to work.
>
> So I will follow your thread with interest.
>
> Terry - W6LMJ
>

Terry, If you use the MFJ 259B version you can go to Advanced Mode by depressing 'Gate' and 'Mode' simultaneously. Press the 'Mode' switch to cycle through the options. Select 'Resonance' Mode. You now can sweep across your system, starting at the lowest frequency range [1.8 MHz] and determine resonance at the Zero reactance frequency. Be advised, that the load may not be 50 ohms though!!

Deacon Dave, W1MCE

4393. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:11:03 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F4E2921.6F35D5B3@shaw.ca>
Source record: 109437

Mark Sheffield wrote:
>
> With the downturn in the solar cycle and worse days ahead, I'm faced
> with operating on the lower hf bands. 20M has gotten to be very hit
> or miss wrt propagation and it seems that more and more dx is
> happening on 40 (with some on 30). I have a 40M dipole up about 30 ft
> or so, but that really doesn't cut it.
>
> I know that this is like a discussion about "what's the best color",
> but what antenna systems will work well on 40M, maybe even 80M, that I
> could mount either on the ground or up no higher than 30 ft? I need
> to at least get some general direction on this from an experiential
> data set rather than starting with the ads in QST or CQ.
>
> Tnx - Mark Sheffield/N0LF

If you plan to be at your QTH for a while, it's not difficult to
lay untuned radials along the ground, or bury them down a half inch
or so with a pizza cutter. I laid mine in the grass and after a
couple of months you don't even see them anymore -- the mower goes
right over them. If you are concerned, you can nail them down
using hairpins. They not only serve as a great base for a vertical,
but they also provide a very good rf ground. They don't have to be
any special length -- its the quantity that counts.
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

4394. Ground system for a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:13:30 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <3f4cd8c0_1@newsfeed>
Source record: 109438

Hi, all concerned:

The good news:

I picked up all the branches and twigs this spring, cut the grass short, and laid over 100 #14-insulated radials in a 150-ft-od circle on top of the cuttings. Stripped the wires at the center and used several split-bolts to tie all the wires into groups, and the groups of wires together and to the ground rod. Who sez you need a circular plate and all those bolts?

Ignored disapproving stares and didn't mow til the zoning guy sent me a letter. Still didn't mow. Weed-whacked "Radial Patch" into what the z-g said was compliance: 10 inches or less. Left the cuttings as they fell. Thought about redoing Radial Patch as Wildflower Patch, and bought some still-unplanted w-f seeds. Thought about various "edge" or "barrier" treatments suggested by z-g as "acceptable". Laid down pronto and those thoughts went away.

Waited til things got close to outta hand again. W-w'ed the outstandingly-tall clumps a bit, all 97 gazillion of 'em.

Sharpened (with hand-grinder from Harbor Freight: cheep cheep worky worky doesn't that sound odd when you say it?), balanced the mower blades and bent 'em (it ain't easy cuz they're either hardened or spring steel) so they curve up to around an inch higher at the ends, than in the centers. Fiddled with the mower-deck up-down cable adjustment so it really does pull the deck up as high as it goes.

Around the 15th inst., began to mow Radial Patch verrrry gingerly. Threw caution to the winds since no tangles after a few turns around May Pole, my 38-ft vertical, and accelerated to normal TimTheToolMan speed. Musta looked like a bobble-head, bouncing over all those duck-plucking mole mounds. Gotta find my old mouth-protector from my days as a footbal pretender. Might not bite my tongue or chip a tooth next time.

Still gotta staple a few visible short lengths down. Might cover 'em with topsoil.

Looks like I have a 2-pitcher lawn again, 3 if I work slow or drink faster.

Gotta enlarge that stupid small thing on the mower fender which masquerades as a beverage-holder.

The bad news:

Man!!!! are verticals ever susceptible to all the neighborhood noise I simply don't hear on my dipoles in trees! Oh, well, xmit on the verticals and receive on the horizontals. Or what? The verticals were quieter after

the power co had the trees trimmed lasty summer, but not lately, it seems. Funny how one gets used to noisy antennas and forgetshow quiet things can be.

Btw, it's only me and two cats. The only honey-do's I hear are "DX", and NIMBY. Ask me about the counterpoise mostly under the rug in the (former) dining room.

Fwiw.

TIA for reading. It's been a good summer "sabbatical", and I'm looking forward to doing real work again in September.

73, Dave, N3HE

4395. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:20:24 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <qb8skv0tshns2ig8hr0oagb22fhj1k8j1c@4ax.com>
Source record: 109439

On Thu, 28 Aug 2003 05:58:09 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> "...the generator impedance is 100+0j ohms, and the line is 5.35
>> wavelengths long."
>
>What does the generator impedance have to do with line losses?

Hi Cecil,

From Chapman (you following this George?) page 28:

"It is reasonable to ask at this point how, for the circuit of
Fig. 3-1(b), page 18, on which the above analysis is based, there
can be voltage and current waves traveling in both directions on
the transmission line when there is only a single signal source.
The answer lies in the phenomenon of reflection, which is very
familiar in the case of light waves, sound waves, and water waves.
Whenever traveling waves of any of these kinds meet an obstacle,
i.e. encounter a discontinuous change from the medium in which
they have been traveling, they are partially or totally
reflected."
...
"The reflected voltage and current waves will travel back along
the line to the point z=0, and in general will be partially
re-reflected there, depending on the boundary conditions
established by the source impedance Zs. The detailed analysis of
the resulting infinite series of multiple reflections is given in
Chapter 8."

The Challenge that I have offered more than several here embody such
topics and evidence the exact relations portrayed by Chapman (and
others already cited, and more not). The Challenge, of course, dashes
many dearly held prejudices of the Transmitter "not" having a
characteristic source Z of 50 Ohms. Chapman also clearly reveals that
this characteristic Z is of importance - only to those interested in
accuracy.

Those hopes having been dashed is much evidenced by the paucity of
comment here; and displayed elsewhere where babble is most abundant in
response to lesser dialog (for the sake of enlightening lurkers no
less). Clearly those correspondents hold to the adage to choose
fights you can win. I would add so do I! The quality of battle is
measured in the stature of the corpses littering the field. :-)

So, Cecil (George, Peter, et alii), do you have an answer? Care to take a measure at the bench? As Chapman offers, "just like optics." Shirley a man of your erudition can cope with the physical proof of your statements. ;-)

The only thing you and others stand to lose is not being able to replicate decades old work. Two resistors and a hank of line is a monumental challenge.

73's
Richard Clark, KB7QHC

4396. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:23:44 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tvaskvghlv8htfalqg4v0n6kvc8pe89kca@4ax.com>
Source record: 109440

On Thu, 28 Aug 2003 05:17:00 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> You answered the question perfectly, you see no relevance with
>> standard optics to your "optics."
>
>You are still confused, Richard. "My optics" is standard optics.

Hi Cecil,

You have an opportunity to prove that with a monumental challenge of
two resistors and a hank of line. Do "your optics" conform to
standard optics? Let's see how you cope with those three basic
elements first before accepting your blanket assertion above.

73's
Richard Clark, KB7QHC

4397. Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:24:50 UTC
From: elmalo@priest.com
Message-ID: <2e000ad4.0308280824.386c900f@posting.google.com>
Source record: 109441
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

My office is located in a metal warehouse type structure which effectively shields us from most outside signals. If I want to listen to the radio or use my cell phone inside the building I have to open a bay door. Is there a way I can get all those radio waves inside the building without opening the doors. Is it possible to place an antenna outside and have everything rebroadcast inside? The main reason for this approach is the cell phone. It would be kind of impractical to run an antenna from my cell phone to the outdoors.

Barring the rebroadcasting idea, I am still interested in what the best way is to get better reception on the radio. Do I need to run a wire outside or somehow ground the radio. Go easy on me, I've heard some stuff about 7mhz being 23 feet long at a quarter wave. If your gonna spring some of that stuff on me I need a little more detailed information. I'm not up on radio lingo but I am technically capable.

TIA
The Bad Priest

4398. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:26:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <m4bskvo5hfjp80njqji6h10tl77drdm60o@4ax.com>
Source record: 109442

On Thu, 28 Aug 2003 05:18:37 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Frankly, I couldn't imagine how you could possibly
>> continue to disagree - with yourself.
>
>I don't and you don't either. You just haven't realized it yet.
>Exactly what is it that you think you and I disagree about?

Hi Cecil,

Most amusing your disagreeing that you don't disagree. Isn't that
enough? By the way, I will adjourn to my other posting to observe the
quality of your work as this infinite regress (along with the tedium
of other postings to this thread) serves no purpose.

See ya there?

73's
Richard Clark, KB7QHC

4399. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:29:22 UTC
From: Mike Luther <mike.luther@ziplog.com>
Message-ID: <vksbej58ttih74@corp.supernews.com>
Source record: 109443

Very good advice, Irv

Irv Finkleman wrote:

>If you plan to be at your QTH for a while, it's not difficult to
>lay untuned radials along the ground, or bury them down a half inch
>or so with a pizza cutter. I laid mine in the grass and after a
>couple of months you don't even see them anymore -- the mower goes
>right over them. If you are concerned, you can nail them down
>using hairpins. They not only serve as a great base for a vertical,
>but they also provide a very good rf ground. They don't have to be
>any special length -- its the quantity that counts.
>
>

--

--> Sleep well; OS2's still awake! ;)

Mike Luther

4400. Re: Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 16:42:15 UTC
From: Ralph Mowery <rmowery@ctc.net>
Message-ID: <FticnahGB4IjrNOiXTWJkQ@ctc.net>
Source record: 109444
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

> My office is located in a metal warehouse type structure which
> effectively shields us from most outside signals. If I want to listen
> to the radio or use my cell phone inside the building I have to open a
> bay door. Is there a way I can get all those radio waves inside the
> building without opening the doors. Is it possible to place an
> antenna outside and have everything rebroadcast inside? The main
> reason for this approach is the cell phone. It would be kind of
> impractical to run an antenna from my cell phone to the outdoors.
>
> Barring the rebroadcasting idea, I am still interested in what the
> best way is to get better reception on the radio. Do I need to run a
> wire outside or somehow ground the radio. Go easy on me, I've heard
> some stuff about 7mhz being 23 feet long at a quarter wave. If your
> gonna spring some of that stuff on me I need a little more detailed
> information. I'm not up on radio lingo but I am technically capable.

While it may not work for you , look up "passive repeater" This is an antenna aimed at the desired station (on the outside of the building in your case) and a feedline inside the building hooked to another antenna.

For receiving other frequencies you may have to run a wire outside the building and either hook it to the receiver or wrap it around the receiver.

I have not seen it but have heard that in long tunnels they have an outside antenna and an amplifier and some inside antennas for the FM radio stations.

4401. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 17:07:27 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <9YF1puGPbjT$EA6H@ifwtech.co.uk>
Source record: 109456

Richard Harrison wrote:
>
>Proof is that a directional sensor finds the same power flow, forward
>or reflected, at a standing wave zero point as it does at a standing
>wave maximum, or at any point in between.
>
Richard's statement about what the directional sensor "finds" is perfectly correct - but unfortunately it cannot be used as proof.

The reason is that so-called "directional wattmeters" don't physically sense directional power flow. All they sense from the transmission line are the current and the voltage, as two separate samples. Then they add or subtract these samples to give the sensor its directional properties. All the meter reads is a detected RF *voltage*, which changes to a different value when the sensor is reversed.

If you want to know what those meter readings mean, you need transmission-line theory in order to understand them. You can then calibrate the meter to read forward and reverse power - but you cannot do that without using transmission-line theory to do it, and that theory is the subject of this entire discussion.

Therefore the readings of a "directional wattmeter" cannot be used as evidence for either side, because that argument would be circular - you cannot use any theory to prove itself!

However, this attempt to use inadmissible evidence doesn't necessarily affect Richard's wider argument about power flow. If that argument is correct, there definitely *will* be other physical evidence to prove it.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4402. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 17:18:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e3af4$1_8@corp.newsgroups.com>
Source record: 109445

Richard Clark wrote:
> So, Cecil (George, Peter, et alii), do you have an answer?

Years ago, I had a discussion with Jeff, WA6AHL, here on this newsgroup. I suggested that the impedance looking back into the source might be Vsource/Isource, i.e. the transformed dynamic load line. However, I have never taken a strong stand on source impedance. If reflections are blocked from being incident upon the source, as they are in most Z0-matched systems, the source impedance doesn't matter since there exists nothing to reflect from the source impedance.

My basic approach is to achieve a Z0-match and therefore forget about source impedance.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4403. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 17:20:33 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e3b60$1_8@corp.newsgroups.com>
Source record: 109446

Richard Clark wrote:
> You have an opportunity to prove that with a monumental challenge of
> two resistors and a hank of line. Do "your optics" conform to
> standard optics? Let's see how you cope with those three basic
> elements first before accepting your blanket assertion above.

"Two resistors and a hank of line" don't have much effect on light.
What on earth are you talking about? I haven't read most of the
postings over the past month.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4404. Re: UHF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 17:41:23 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308280941.6e1020e8@posting.google.com>
Source record: 109447

brian1509@yahoo.com (brian) wrote in message
news:<6762ff06.0308271629.447eec1b@posting.google.com>...
> What's the best feedline for UHF antenna, 75 ohm cable or 300 ohm
> strap? The antenna is to be used for recieving 674 MHz (TV channel 48)

Unless the coax is very low loss, I'd have to put my money on the 300
ohm twinlead setup having the least overall loss, even counting the
little balun you will need. At least when dry... Or at least thats
what I found when I ran a large UHF TV antenna for 420 mhz ATV. I had
the least loss with the twinlead. MK

4405. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 18:39:33 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308281039.4e714534@posting.google.com>
Source record: 109448

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308271746.28037589@posting.google.com>...
> "Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bij0br$q2p$1@titan.btinternet.com>...
> ...
> > By the way, you've told us only half the story. What's the value of the
> > load impedance which maximises the reflection coefficient?
>
> Hey, Reg, it's just a simple high-school (well, maybe first-year
> college) differential calculus problem. Just let Garvin work through
> it for us. Hey, good Dr., could you do that for us? Just write an
> expression for |Vr/Vf| = |(Zl-Zo)/(Zl+Zo)| in terms of Rl and Xl and
> find the partial derivatives with respect to those two variables, and
> set both equal to zero, while letting Ro=Xo. It's mostly just a bunch
> of bookkeeping. You should come up with values of Rl and Zl in terms
> of Ro, and you can check to be sure that's actually a maximum and not
> a minimum or saddle point. You should see a symmetry for Ro=-Xo, the
> more usual limiting case.

(Of course, that's not quite right, as I'm sure the good Dr. and Reg
both know. Since we're talking passive here, you need to insure that
Rl stays positive, so you just may need to check along the boundary
where Rl=0. And you should convince yourself that the most reactive
possible line really does yield the largest possible |Vr/Vf|. So it
becomes a task of finding the maximum value of a function f(Rl, Xl,
Xo) with Ro fixed positive non-zero, under the constraints that Rl>=0
and |Xo|<=Ro.)

4406. Re: Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 18:48:14 UTC
From: "WB3FUP (Mike Hall)" <wb3fup@msn.com>
Message-ID: <biliph$aispo$1@ID-204390.news.uni-berlin.de>
Source record: 109449
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

The passive repeater is an excellent idea. I have done that extensively at Radio Shack. We had a TV antenna outside for the TV signals. We would be sure to run a feed-line to the inside TV demo antenna, and to a automobile antenna in the "car sound" display. We could then give relatively accurate demonstrations of the small transistor radios and auto stereos. You wouldn't believe it, or won't believe it until you try it. Two antennas connected by as sort a feed-line as possible.

--
73 es cul

wb3fup
a Salty Bear

"Ralph Mowery" <rmowery@ctc.net> wrote in message
news:FticnahGB4IjrNOiXTWJkQ@ctc.net...
> > My office is located in a metal warehouse type structure which
> > effectively shields us from most outside signals. If I want to listen
> > to the radio or use my cell phone inside the building I have to open a
> > bay door. Is there a way I can get all those radio waves inside the
> > building without opening the doors. Is it possible to place an
> > antenna outside and have everything rebroadcast inside? The main
> > reason for this approach is the cell phone. It would be kind of
> > impractical to run an antenna from my cell phone to the outdoors.
> >
> > Barring the rebroadcasting idea, I am still interested in what the
> > best way is to get better reception on the radio. Do I need to run a
> > wire outside or somehow ground the radio. Go easy on me, I've heard
> > some stuff about 7mhz being 23 feet long at a quarter wave. If your
> > gonna spring some of that stuff on me I need a little more detailed
> > information. I'm not up on radio lingo but I am technically capable.
>
> While it may not work for you , look up "passive repeater" This is an
> antenna aimed at the desired station (on the outside of the building in
your
> case) and a feedline inside the building hooked to another antenna.
>
> For receiving other frequencies you may have to run a wire outside the
> building and either hook it to the receiver or wrap it around the
receiver.
>
> I have not seen it but have heard that in long tunnels they have an
outside
> antenna and an amplifier and some inside antennas for the FM radio

stations.
>
>

4407. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 18:48:34 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <9rhskv0nloqfrr7v7r7rmkmgfbskd93e86@4ax.com>
Source record: 109450

On Thu, 28 Aug 2003 12:18:44 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> So, Cecil (George, Peter, et alii), do you have an answer?
>
>Years ago, I had a discussion with Jeff, WA6AHL, here on this
>newsgroup. I suggested that the impedance looking back into
>the source might be Vsource/Isource, i.e. the transformed
>dynamic load line. However, I have never taken a strong stand
>on source impedance. If reflections are blocked from being
>incident upon the source, as they are in most Z0-matched
>systems, the source impedance doesn't matter since there
>exists nothing to reflect from the source impedance.
>
>My basic approach is to achieve a Z0-match and therefore
>forget about source impedance.

Hi Cecil,

That's all fine and well. It exhibits a rather standard behavior and confirms conventional expectations. I take by this response that you have no interest in the confirmation of interference in both Optical and RF metaphors being visited at the bench. That is fine too. It is a rather tough example to replicate - except when stumbled upon, then we hear cries for exorcism being needed (my cue).

My missives simply offer touchstones of clarity in contrast to the murky sea of un-fettered statements. We are presented with fantastic notions that the characteristic source Z of a transmitter is unknowable, and this statement is usually closely allied to the notion that this same "unknowable" Z is actually responsible for reflecting all power arriving at the antenna terminal. Few of those who utter these witless jokes have any response to the straight line "So what is this Z that does all that reflecting?" In their chagrin, they fail even to repeat "it is unknowable...." Absolutely none can venture a guess that it is either: "much less than 50 Ohms," or it is "much more than 50 Ohms." This would be two obvious rejoinders and yet neither is uttered. Such is faith. The universal silence condemns their specious claims absolutely.

These absurd notions deserve a hearty laugh, because it invalidates the need for a tuner which is purposely inserted between the source and load to serve that very purpose (and which you describe as your typical habit which is a nearly universal application).

But, again, this discussion is generally reserved only for those interested in accuracy. :-)

73's
Richard Clark, KB7QHC

4408. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 18:49:29 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <gefskvs9t1t1g9b14qkbb4kotreoanl0b9@4ax.com>
Source record: 109451

On Thu, 28 Aug 2003 12:18:44 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> So, Cecil (George, Peter, et alii), do you have an answer?
>
>Years ago, I had a discussion with Jeff, WA6AHL, here on this
>newsgroup. I suggested that the impedance looking back into
>the source might be Vsource/Isource, i.e. the transformed
>dynamic load line. However, I have never taken a strong stand
>on source impedance. If reflections are blocked from being
>incident upon the source, as they are in most Z0-matched
>systems, the source impedance doesn't matter since there
>exists nothing to reflect from the source impedance.
>
>My basic approach is to achieve a Z0-match and therefore
>forget about source impedance.

Hi Cecil,

That's all fine and well. It exhibits a rather standard behavior and confirms conventional expectations. I take by this response that you have no interest in the confirmation of interference in both Optical and RF metaphors being visited at the bench. That is fine too. It is a rather tough example to replicate - except when stumbled upon, then we hear cries for exorcism being needed (my cue).

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These absurd notions deserve a hearty laugh, because it invalidates the need for a tuner which is purposely inserted between the source and load to serve that very purpose (and which you describe as your typical habit which is a nearly universal application).

But, again, this discussion is generally reserved only for those interested in accuracy. :-)

73's
Richard Clark, KB7QHC

4409. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 18:49:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ifiskvo2v27edjfvovh0ggcj6e3c596c5l@4ax.com>
Source record: 109452

On Thu, 28 Aug 2003 12:18:44 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>
>My basic approach is to achieve a Z0-match and therefore
>forget about source impedance.

Hi Cecil,

This is a cavalier attitude if you can afford it. Otherwise, those who so desperately hammer out the last 0.1 dB antenna gain are going to fall to their knees in wrack when they discover that their rig's characteristic Z of, say, 70 Ohms meeting the discontinuity of their low pass filter's 50 Ohms turns that effort into heat behind the antenna jack.

I have long since stopped being surprised by those who spin on like whirling dervishes over trivial matters in the face of 10 fold losses in front of them. This, of course, is even more trivial when they gush on about their premium equipment that behind the knobs "efficiently" transforms 20 - 25 Amperes of DC current into 100 Watts RF. Now, that puts perspective to the topic: smoke and reflection coefficient.

73's
Richard Clark, KB7QHC

4410. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 18:51:54 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308281051.150ecc3f@posting.google.com>
Source record: 109453

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308272017.13412270@posting.google.com>...
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<9bKdnTq44-s1dtGiXTWJiQ@comcast.com>...
> >
> > According to Adler, Chu, and Fano, "Electromagnetic Energy Transmission and
> > Radiatin", John Wiley, 1960, (60-10305),
> > when they talk about lossy lines, and say that Zo is complex in the general
> > case, they come up with a maximum value for the reflection coefficient of (1
> > + SQRT(2)). Eq 5.14b. Remember, it is a lossy line; so, the reflected
> > voltage gets smaller as you move away from the load. Somebody might want to
> > check this out, in case I misunderstood something. BTW, the three authors
> > were all MIT profs.
> >
> > Tam/WB2TT
>
>
> Les Besser, Pozar, and Kurokawa are all PhDs too.
>
> But a PhD is only human too.
>
> Could you send me that paper?

Garvin, it's a book, not a paper. Your bookstore can probably help
you with it. Besser, at least, apparently came to understand the
error of his ways on this point, and Besser Associates is now
presenting the correct formula in their classes, per the email I
posted from them. I haven't checked with Pozar or Kurokawa, but
strongly suspect you are taking their works out of context and
misinterpreting them.

Cheers,
Tom

4411. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 19:33:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e59aa$1_2@127.0.0.1>
Source record: 109455

Richard Clark wrote:
> But, again, this discussion is generally reserved only for those
> interested in accuracy. :-)

Like I say, my solution is to block any reflections from being incident upon the source. But I have a question. Since we are discussing coherent sine waves, it seems to me that any reflection from the source impedance will become indistinguishable from the generated wave. In fact, the present convention of generated power equals forward power minus reflected power is designed to overcome that very problem.
--
73, Cecil, W5DXP

4412. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 19:39:25 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e5af0$1_2@127.0.0.1>
Source record: 109458

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>My basic approach is to achieve a Z0-match and therefore
>>forget about source impedance.
>
> This is a cavalier attitude if you can afford it.

It's all part of my "Work Smarter, Not Harder" nature. The elimination
of reflected energy incident upon the source is extremely rewarding
in multiple ways.
--
73, Cecil, W5DXP

4413. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 19:40:09 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <billqp$cr4$1@hercules.btinternet.com>
Source record: 109457

Tom, to save everybody a lot of trouble -

The greatest theoretical value of the magnitude of the reflection coefficient occurs when the angle of Zo is -45 degrees, and the terminating impedance is a pure inductive reactance of |Zo| ohms.

Do you think I should have mentioned this when I began this and other threads by saying a reflection coefficient greater than unity can occur?

The riot police can now return to barracks.

Reg, G4FGQ.

==========

"Tom Bruhns" wrote
> "Reg Edwards" wrote
> > By the way, you've told us only half the story. What's the value of the
> > > load impedance which maximises the reflection coefficient?
==========
> > Hey, Reg, it's just a simple high-school (well, maybe first-year
> > college) differential calculus problem. Just let Garvin work through
> > it for us. Hey, good Dr., could you do that for us? Just write an
> > expression for |Vr/Vf| = |(Zl-Zo)/(Zl+Zo)| in terms of Rl and Xl and
> > find the partial derivatives with respect to those two variables, and
> > set both equal to zero, while letting Ro=Xo. It's mostly just a bunch
> > of bookkeeping. You should come up with values of Rl and Zl in terms
> > of Ro, and you can check to be sure that's actually a maximum and not
> > a minimum or saddle point. You should see a symmetry for Ro=-Xo, the
> > more usual limiting case.
>
> (Of course, that's not quite right, as I'm sure the

good Dr. and Reg
> both know. Since we're talking passive here, you
need to insure that
> Rl stays positive, so you just may need to check
along the boundary
> where Rl=0. And you should convince yourself that
the most reactive
> possible line really does yield the largest possible
|Vr/Vf|. So it
> becomes a task of finding the maximum value of a
function f(Rl, Xl,
> Xo) with Ro fixed positive non-zero, under the
constraints that Rl>=0
> and |Xo|<=Ro.)

4414. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 19:45:36 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e5c61_2@127.0.0.1>
Source record: 109459

Ian White, G3SEK wrote:
> However, this attempt to use inadmissible evidence doesn't necessarily
> affect Richard's wider argument about power flow. If that argument is
> correct, there definitely *will* be other physical evidence to prove it.

The biggest clue that I have noticed is that nobody has been able to
generate standing waves in a single source, single feedline, single
load system without the existence of a reflected wave.
--
73, Cecil, W5DXP

4415. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 20:13:41 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <tpnskvkp678h592j4vem0cfudnha28upsd@4ax.com>
Source record: 109460

On Thu, 28 Aug 2003 12:33:53 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> But, again, this discussion is generally reserved only for those
>> interested in accuracy. :-)
>
>Like I say, my solution is to block any reflections from being
>incident upon the source. But I have a question. Since we are
>discussing coherent sine waves, it seems to me that any reflection
>from the source impedance will become indistinguishable from the
>generated wave. In fact, the present convention of generated power
>equals forward power minus reflected power is designed to overcome
>that very problem.

Hi Cecil,

So you DO want to perform this test?

Your presumption of coherency is false unless you engineer the
solution.

I got there first and made sure that wasn't gonna happen. :-)

Any random attempt has only a one in 360 chance of being correct
within one degree of coherent. This is simple interference math after
all. Most individuals would just notice a 10 degree error which would
boost your chances to slightly less than 3% - not very good coherency
wise.

73's
Richard Clark, KB7QHC

4416. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 20:15:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <4koskv0kjpgd66df770re1ushq9rkbi69a@4ax.com>
Source record: 109461

On Thu, 28 Aug 2003 12:39:25 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>My basic approach is to achieve a Z0-match and therefore
>>>forget about source impedance.
>>
>> This is a cavalier attitude if you can afford it.
>
>It's all part of my "Work Smarter, Not Harder" nature. The elimination
>of reflected energy incident upon the source is extremely rewarding
>in multiple ways.

Hi Cecil,

If smarter were hotter, then you could toast bread at 10 feet.
Casting back ten watts by burning 20 hardly qualifies for more.

73's
Richard Clark, KB7QHC

4417. Re: Folded dipole?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 20:54:58 UTC
From: "Edward A. Feustel" <efeustel@erols.com>
Message-ID: <bilqdh$7ge$1@bob.news.rcn.net>
Source record: 109463

I used a folded dipole on 15 and 40 from 1992-2000 when I moved to a much
larger lot.
I used mine with a Johnson Matchbox, so I did not need a 6:1 balun.
Ed, N5EI
"Cliff Gieseke" <cliffgie@swbell.net> wrote in message
news:VFd3b.697$2j.509@newssvr24.news.prodigy.com...
Does anyone still use a folded dipole with an appropriate impedance matching
balun today? Not the broadband type that B & W sells, but the old monoband
basic folded dipole, that many operators used 50 years ago. ???

-- Cliff, W4ZFL

4418. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 20:59:03 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vksr93nds9gg08@corp.supernews.com>
Source record: 109464

Good comments.

One of my professors made an astute observation that sums up your conclusion. He said that science isn't set back so much by getting the wrong results by using the right methods as it is by getting the right results using the wrong methods. Amen to that.

Roy Lewallen, W7EL

David Robbins wrote:
>
> yes, i still hold that they are different. they are from completely
> different realms of electromagnetics. in the transmission line reflection
> coefficient you are working with a distributed system that is modeled with
> wave equations. there are delays, waves travel and reflections return after
> a finite delay. in your example you have coerced the voltage and current
> waves to be the same in the transmission line, but that is not the same as
> modeling the line itself.
>
> in the generator feeding a load you are looking at a lumped model. these
> are normally not solved with wave equations, there are no delays or
> reflections. the problem of calculating maximum power transfer from a
> generator to a load of a given impedance is a simple problem solved with no
> waves and only one pde used to find the max of the power to the load wrt the
> generator impedance. it doesn't care what the load is, as long as it is a
> linear time invariant impedance. now, you could create that impedance by
> putting a load on the end of a transmission line and transforming it back
> through the normal transmission line equations, but once you do that you
> throw the line out and solve the simple equations in the lumped models.
>
> these discussions always seem to end up in this same quagmire, one group
> trying to solve everything with wave equations, sinusoidal steady states,
> transmission line transformations, and the other holding on to the lumped
> models and trying to make them fit the wrong problem domain. one thing i
> did learn in ee classes was to use the right model for the job, choosing the
> wrong one will give you wrong answers most of the time.... the real problem
> is that sometimes you can get the right answer from the wrong model just
> because the numbers work out... and when you have to show your work you lose
> credit for using the wrong method but still getting the right numerical
> answer. that is what i see here, someone has started with a simplified case
> that just happens to work out to the same answer and has tried to generalize
> it... -10 points for the wrong method!
>
>
>

4419. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 20:59:17 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <J4P4BATI0mT$EAO5@ifwtech.co.uk>
Source record: 109466

Richard Clark wrote:

>
>From Chapman (you following this George?) page 28:
>
> "It is reasonable to ask at this point how, for the circuit of
> Fig. 3-1(b), page 18, on which the above analysis is based, there
> can be voltage and current waves traveling in both directions on
> the transmission line when there is only a single signal source.
> The answer lies in the phenomenon of reflection, which is very
> familiar in the case of light waves, sound waves, and water waves.
> Whenever traveling waves of any of these kinds meet an obstacle,
> i.e. encounter a discontinuous change from the medium in which
> they have been traveling, they are partially or totally
> reflected."
> ...
>
> The detailed analysis of
> the resulting infinite series of multiple reflections is given in
> Chapter 8."
>
>The Challenge that I have offered more than several here embody such
>topics and evidence the exact relations portrayed by Chapman (and
>others already cited, and more not). The Challenge, of course, dashes
>many dearly held prejudices of the Transmitter "not" having a
>characteristic source Z of 50 Ohms. Chapman also clearly reveals that
>this characteristic Z is of importance - only to those interested in
>accuracy.
>
Thank you for the detailed quotation - it explains just how you have
misinterpreted it.

When Chipman says:

>"The reflected voltage and current waves will travel back along
> the line to the point z=0, and in general will be partially
> re-reflected there, depending on the boundary conditions
> established by the source impedance Zs.

all he means by "in general" is that if the source impedance is not
exactly the same as the Zo of the line, there will be a re-reflection
and a new "second-generation" forward wave will start.

That's fine, because the second-generation forward wave will encounter
exactly the same conditions down the line as the first-generation wave
did. And when it is (partially) reflected at the termination and returns

to the source, a second re-reflection will spawn a third-generation forward wave... which will encounter the same conditions yet again. And so it goes on, in an infinite series of partial reflections at both ends of the line.

If the transmitter is left switched on, there will be a quasi-infinite series of forward and reflected waves, whose sums will converge to steady-state values. The source impedance and the line length will of course affect the relative amplitudes and phases of successive generations of forward waves. I believe the point you're missing is that source impedance and line length will *also* affect the relative amplitudes and phases of successive generations of reflected waves, in exactly the same way. Therefore the standing wave ratio - literally, the ratio of maximum to minimum voltages, caused by addition and subtraction of forward and reflected waves along the line - is *not* affected by the source impedance.

On the strength of recommendations here, I just ordered a copy of Chipman which is currently winging its way from New Zealand. But if you skip forward to "the detailed analysis of the resulting infinite series of multiple reflections... in Chapter 8", I do believe that is what you'll find.

Roy said something like this already, about a week ago; I've tried to say the same thing in a different way that might connect better with Chipman's explanation.

Of course you could arrive at the steady-state conditions much more easily by other methods. The infinite-series approach is an important check that the two approaches agree in the steady state, which of course they must.

Richard continues:
>The Challenge that I have offered more than several here embody such
>topics and evidence the exact relations portrayed by Chapman (and
>others already cited, and more not). The Challenge, of course, dashes
>many dearly held prejudices of the Transmitter "not" having a
>characteristic source Z of 50 Ohms.

No, it doesn't.

> Chapman also clearly reveals that this characteristic Z is of
>importance - only to those interested in accuracy.
>
No, I'm sure that what he really shows that source Z is of precisely *no* importance to SWR.

The source impedance *will* of course determine how much voltage, current and power the transmitter can deliver into a given impedance at its output terminals. That is obvious, but down the line it will affect the amplitudes of the standing-wave maxima and minima equally, so the SWR doesn't change.

>Those hopes having been dashed is much evidenced by the paucity of
>comment here; and displayed elsewhere where babble is most abundant in
>response to lesser dialog (for the sake of enlightening lurkers no
>less).

Please read that paragraph again, Richard... and you say *other* people
babble?

The reason no-one will take on your challenge is that it's an empty one:
the source impedance has no effect on the SWR, so there's nothing there
for us to prove.

> Clearly those correspondents hold to the adage to choose
>fights you can win. I would add so do I!

I'm not interested in "winning". All I'm interested in is getting the
facts right.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4420. Folded Dipoles

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:03:07 UTC
From: Michael Efseaff <beads@snowline.net>
Message-ID: <saidnXS6NeVO89OiU-KYgw@vel.net>
Source record: 109465

Danny, Please email me at beads@snowline.net

It's me, Mike, K6JSY, formerly of Hacienda Heights. Remember?

4421. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:20:22 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308281320.3815d959@posting.google.com>
Source record: 109467

```
"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<3Y2dnRDSs6MwZtCiU-KYuA@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308272030.6968c33a@posting.google.com...
> > Roy Lewallen <w7el@eznec.com> wrote in message
> news:<vkpts5pianfn98@corp.supernews.com>...
> >
> > It very simple Roy, and no complex math is needed to understand
> > it. The port impedance does not change from when the incident power
> > is launched and when the reflected power returns, so the power will be
> > ((Vrms)**2)/Zo). So if the RMS voltage returning is greater that the
> > power you put in, you MUST have an active device.
>
> Your use of the term complex math is appropriate in that V+, V-, and gamma
> are all complex numbers. For the case of gamma = 2.41, its phase angle is
> about 65 degrees, and the *real part* of gamma is 1.0.
>
> Tam/WB2TT

I meant to say, no complicated math is needed to understand my
point.

You yourself have admitted that you don't even understand what you
are refering to, and i don't blame you, as they are using a weird
phasor diagram for the reflection coefficient?

Could you send more pages to me, like before the page you sent me?

Slick
```

4422. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:22:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e732f$1_2@127.0.0.1>
Source record: 109369

Richard Clark wrote:
> Your presumption of coherency is false unless you engineer the
> solution.

In a single source system, all component signals are coherent.

> Any random attempt has only a one in 360 chance of being correct
> within one degree of coherent. This is simple interference math after
> all. Most individuals would just notice a 10 degree error which would
> boost your chances to slightly less than 3% - not very good coherency
> wise.

I guess I don't understand any of the above. Coherency just means the
signals are of the identical frequency. Coherency doesn't specify phase.
The phase of a reflected wave can be anything depending on feedline
length and load.
--
73, Cecil, W5DXP

4423. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:24:12 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4e737b$1_2@127.0.0.1>
Source record: 109371

Richard Clark wrote:
> Casting back ten watts by burning 20 hardly qualifies for more.

You forget that I achieve a Z0-match without a conventional tuner.
--
73, Cecil, W5DXP

4424. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:24:37 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308281324.6ccbe233@posting.google.com>
Source record: 109468

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308271746.28037589@posting.google.com>...
>>
> Hey, Reg, it's just a simple high-school (well, maybe first-year
> college) differential calculus problem. Just let Garvin work through
> it for us. Hey, good Dr., could you do that for us? Just write an
> expression for |Vr/Vf| = |(Zl-Zo)/(Zl+Zo)| in terms of Rl and Xl and
> find the partial derivatives with respect to those two variables, and
> set both equal to zero, while letting Ro=Xo. It's mostly just a bunch
> of bookkeeping. You should come up with values of Rl and Zl in terms
> of Ro, and you can check to be sure that's actually a maximum and not
> a minimum or saddle point. You should see a symmetry for Ro=-Xo, the
> more usual limiting case.
>
> Cheers,
> Tom

Well, Tom, as your education is "not worth mentioning", i don't
feel a need to impress or bore you with a lot of math. And a lot of
math is not needed in this case, although it would be interesting to
see the derivation of the conjugate equation.

Maybe you should play some more chess...

Slick

4425. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:26:25 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <5su3b.21817$8i2.12116@newsread2.news.atl.earthlink.net>
Source record: 109370

Roy:

[snip]
> Maybe the trouble is with the "semi-infinite" aspect, but here we part
> company again. The termination at the source end of the line is, by
> definition, the source impedance, which is zero, not Z0.
>
> Can't you do this analysis with a plain, ordinary, transmission line of
> finite length? Lossless is ok, lossy is ok. Or is your proof true only
> if the line is "semi-infinite" in length (whatever that is)?
>
> Roy Lewallen, W7EL
[snip]

By semi-infinite I mean a line that starts at the generator and and extends out to infinity.
Clearly the driving point impedance of such a line is just equal to the surge impedance Zo.

But... if semi-infinite is unacceptable, why that's OK, just choose the length of Zo line you wish
and terminate it on the far end away from the generator with an impedance equal to Zo. This
finite line then has exactly the same driving point impedance as the semi-infinite line, namely Zo.

It doesn't really matter which line you choose to use, semi-infinite or finite length terminated in Zo.

The two lines are indistinguisable from each other at their driving points and along their lengths,
until of course you come the "end" of the terminated line. :-)

It doesn't matter if the lines are lossless, lossy, distortionless, or whatever. They just have
a perhaps complex surge impedance Zo(p) = sqrt[(R + pL)/(G + pC)] where R, L, C, and G
are the primary parameters of the line.

This line is driven by a Thevenin generator whose "internal" impedance is also equal to Zo.

That's all there is to it. Pretty simple stuff.

Now the generator's open circuit voltage is simply expressed as "2a" or just twice the
incident wave at the line's driving point.

i.e. if we use the symbol "a" to denote the incident wave at the driving point of the Zo line
[either the semi-infinite or finite terminated line is fine, the result is the same] this is just half
of the generator voltage.

There will be no reflected wave at the line's driving point, since there is an image match
[Zo-match] everywhere on the line including at the driving point. There is no reflection
at the driving point simply because the generator's source impedance is also Zo.

Now calculate the reflection coefficient at the driving point. You can calculate rho looking
in either direction, i.e. the so-called "front end", or "back end" reflection coefficient, it just
doesn't matter. Either take the Zo of the line as the load on the generator or take the Zo
of the generator as the load on the line, whatever...

In both cases the classical rho evaluates to:

rho = (Zl - Zo)/(Zl + Zo) or (Zo - Zl)/(Zo + Zl) it just doesn't matter, since the load
Zl is Zo anyway. Zl = Zo looking in either direction from the line's driving point and so...

rho is identically zero.

rho = (Zo - Zo)/(Zo + Zo) = 0

Zo is complex in general and rho must be computed either by an analog computer called
a "reflectometer" or by a human performing algebra, in either case the reference impedance
used to calculate rho is the complex Zo of the line.

The generator generates the incident voltage "a" by forcing the voltage "2a" across the
two impedances, i.e. the Zo of the generator and the Zo driving point impedance of
the line. The reflected voltage "b" across the line's driving point is identically zero
And... this is *NOT* a conjugate match, it is an image match. i.e. Zo staring at Zo
at the driving point, not Zp staring at conj(Zo).

If one then assumes that either the line, or the generator impedance, is replaced by a line
or generator impedance of characteristic equal to the conjugate of Zo then clearly in general
there will be a non-zero reflection coefficient and a non-zero reflected voltage.

This is a long winded explanation of a simple concept comprising a very simple circuit
containing an ideal generator, a complex impedance and a terminated line, along with
no more than a couple of equations that constitutes a clear and simple mathematical
and/or experimental "proof" that the reflected voltage is non-zero for a conjugate match
and is zero for an image match.

QED

Of course if one should choose a definition of the reflection coefficient different from the
classical one [Say like Slick's definition] and by inference a different definition of the reflected
voltage wave, then you can have b zero for a conjugate match. And it seems that some folks
like to go to hell that way.

I say anyone is entitled to go to hell their own way in making definitions but... they must
continue to be consistent with those definitions throughout if they want to calculate and/or
measure correct values.

Me? I like to use the classical defintion of rho and b, i.e. the ones that are null at an
image match point, where Zo is glaring at Zo, since that is what happens at every
infinitesimal length along Mother Natures' transmission lines. And she does not
allow reflections to occur where Zo meets Zo!

I believe that a definition system that defines there to be no reflections where Zo meets
conj(Zo) but reflections to occur where Zo meets Zo to be un-natural.

And I believe that you and I both agree.

[BTW... Aside: You do agree that one cannot tell the difference between a semi-infinite line
of surge impedance Zo and a finite line of surge impedance Zo terminated in Zo at it's finite
distant end by observations at the driving point, do you not?]

--
Peter K1PO
Indialantic By-the-Sea, FL.

4426. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:29:09 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308281329.3504f631@posting.google.com>
Source record: 109372

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308281051.150ecc3f@posting.google.com>...
>
> Garvin, it's a book, not a paper. Your bookstore can probably help
> you with it. Besser, at least, apparently came to understand the
> error of his ways on this point, and Besser Associates is now
> presenting the correct formula in their classes, per the email I
> posted from them. I haven't checked with Pozar or Kurokawa, but
> strongly suspect you are taking their works out of context and
> misinterpreting them.
>
> Cheers,
> Tom

You are full of sh**. You never emailed Besser, and they are
teaching it correctly.

What about the ARRL? Check Pozar and Kurokawa yourself, don't
take my word for it.

Lemme guess, you are a lousy chess player, aren't you?

Sounds like you lost one too many games...

Garvin (Slick)

4427. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:34:18 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308281334.6311f7d5@posting.google.com>
Source record: 109373

"George, W5YR" <w5yr@att.net> wrote in message
news:<whh3b.116904$0v4.8374899@bgtnsc04-news.ops.worldnet.att.net>...

>
> Finally, he clearly shows how terminating an actual physical line
> appropriately can result in a reflection coefficient as large as 2.41.
>
> This revelation DOES NOT imply that the reflected wave would bear more power
> than the incident wave. For a line to display this behavior, it must first
> of all have a high attenuation per wavelength. Due to this high attenuation,
> the power in the reflected wave is high for only a short distance from the
> termination.
>

George, with all due respect, even if the SWR measurement was
done right at a short or open, the highest rho you could get would be
1.

If the power reflection coefficient is the square of the
MAGNITUDE of the voltage reflection coefficient, how can you have a
voltage RC greater than one without the power RC being also greater
than one??

Slick

4428. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:40:21 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308281340.602cffd9@posting.google.com>
Source record: 109374

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<_uacndebqbAC39CiXTWJkA@comcast.com>...
> >
> They were MIT EE professors. I think Fano has written a more recent book on
> this. MIT is often considered to be the best engineering school in the US.
> (Keep forgetting you live "over there")
>

And they never make mistakes or typos? Ok...

> You are making me work my tail off trying to understand just what they did.
> You have a line of impedance Zo with load Zr at point z=0. Normalize,
> Zn=Zr/Zo. Since the angle of Zo is within +/- 45 degrees, the angle of Zn is
> within +/-135 degrees. He draws some vectors and decides maximum gamma is
> when the angle of Zn is +/-135. He solves for gamma^2, takes the square
> root, and ends up with gamma =
>

What exactly do you mean by Zr at point z=0? i don't fully
understand the page you sent, and neither do you obviously.

> 1 + SQRT(2)
>
> I couldn't massage the numbers just right, but the decimal number I got
> suggest that max Gamma occurs when
>
> Zo = k(1 - j1)
> Zr = jkSQRT(2) k is the same k
>
> He goes on to say that as you move away from z=0, the reflection coefficient
> becomes smaller by e**2alpha|z|
>
> This is probably a never ending discussion, but I wanted to point out that
> these guys don't think there is anything wrong with your gamma of 1.8 ;
> especially since Slick brought it up again. I do not want to retake Fields &
> Waves
>
> Tam/WB2TT

Maybe you should retake it.

If the power RC is the square of the MAGNITUDE of the voltage
RC, then a voltage RC >1 will lead to a power RC >1.

How do you get more reflected power than incident power into a
passive network, praytell??

Slick

4429. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:42:30 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <aHu3b.21832$8i2.8842@newsread2.news.atl.earthlink.net>
Source record: 109375

Dave:

[snip]
> these discussions always seem to end up in this same quagmire, one group
> trying to solve everything with wave equations, sinusoidal steady states,
> transmission line transformations, and the other holding on to the lumped
> models and trying to make them fit the wrong problem domain. one thing i
> did learn in ee classes was to use the right model for the job, choosing
the
> wrong one will give you wrong answers most of the time.... the real
problem
> is that sometimes you can get the right answer from the wrong model just
> because the numbers work out... and when you have to show your work you
lose
> credit for using the wrong method but still getting the right numerical
> answer. that is what i see here, someone has started with a simplified
case
> that just happens to work out to the same answer and has tried to
generalize
> it... -10 points for the wrong method!
[snip]

Dave:

I disagree, I feel that for measurements and calculations involving the
impedance matching
dynamics at any reference plane in such systems the differences between
lumped and
distributed systems is trivial and unimportant.

The impedance matching dynamics at the reference plane/junction point are
the same for
distributed and lumped systems, they obey all the same equations, their
electrodyanamics
is the same, one simply cannot tell the difference at the driving point.

If you don't like lumped models, then make the internal resistance of the
Thevenin
generator out of a distributed line. It will work just the same way.

The disagreements that occur when there are discussions/arguments occur
because folks
often assume they are different situations, but they are not.

Every line has a driving point impedance of Zo and at that point the voltage
and current

are related by Ohms Law v = Zo*i just as for a lumped system of impedance Zo.
It simply doesn't matter if Zo is lumped or distributed when making observations at the
driving point. And this is what one is doing when making impedance matching calculations.

I agree that if you move off down the line in distance/space that you will find
differences, but you certainly can't observe them at the driving points.

A slotted line device for measuring VSWR is a physical example of a measurement
system that works on a distributed system that won't work for a lumped system.
However you can exactly correlate the measurements taken with the slotted line
to measurements taken at the driving point.

And so, although I agree with you that some can't seem to be able to see that these
situations are the same, I don't agree that makes them different. They are the same
at the driving point.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4430. Re: Ground system for a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:43:45 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030828174345.21934.00000100@mb-m04.aol.com>
Source record: 109376

>
>Man!!!! are verticals ever susceptible to all the neighborhood noise I
>simply don't hear on my dipoles in trees! Oh, well, xmit on the verticals
>and receive on the horizontals. Or what?

Verticals are low angle beasts and "look" low and "see" all the man made
wundernoise. Horinontals look up the sky, where not much man mades.
If you need to listen on low bands for DX, the best thing is to use Flag or
Pennat RX antennas, they give some directivity and discrimination against noise
sources around. But you should notice decent improvement on DX esp. on
transmit.
There is really no need to wait for grass to grow tall, just tie the wire down
and you can move the lawn short, they wiill eventually "sink" into grass and
ground.

GL Yuri, K3BU

4431. Re: Ground system for a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:46:57 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030828174657.21934.00000101@mb-m04.aol.com>
Source record: 109377

Boy that beer really hit me on an empty stomach and scrambled my spelunking.
:-)

BUm

4432. Re: MOXON Antenna Project website

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:48:51 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308281348.657f09a4@posting.google.com>
Source record: 109378

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<si5qkvgi7gkpm2k8mt8e3302kr5khpoh2q@4ax.com>...
> >
> >Hello all...
> >
> >I'd invite those interested to visit
> >http://campus.murraystate.edu/org/msuarc/moxon/index.htm which showcases the
> >ongoing efforts of a group of hams who are experimenting with home brewing
> >17 meter MOXON antennas. The next phase of our project will be to add 20
> >meters to the antenna with a common feed point. A 40 meter version is also
> >in the works.
> >
> >Best wishes,
> >
> >Don

Don, we just made one of these for the...ahem, broadcast band, and
it had an almost perfect match the first time we looked at it!

Well, that was with the MFJ, but we'll so how the Daiwa SWR reads
when we actually use in the real system.

Here's another Moxon page:

http://www.cebik.com/radio.html

Who the hell was Moxon anyways?

Slick

4433. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:49:22 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vksu64dr33sec3@corp.supernews.com>
Source record: 109379

David Robbins wrote:
> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
> news:_Og3b.19368$8i2.5884@newsread2.news.atl.earthlink.net...
>
>
>
> yes, i still hold that they are different. they are from completely
> different realms of electromagnetics. in the transmission line reflection
> coefficient you are working with a distributed system that is modeled with
> wave equations. there are delays, waves travel and reflections return after
> a finite delay. in your example you have coerced the voltage and current
> waves to be the same in the transmission line, but that is not the same as
> modeling the line itself.

In simulation programs, transmission lines are
solved for their two-port
parameters, and are then treated as lumped
circuits in the actual
simulation, just like any lumped-element circuit.
Which is a good way
to do it.

I notice that in the ARRL Antenna Book, 19th
edition , on page 24-7, it is stated with definite
finality that the reflection coefficient formula
uses the complex conjugate of Zo in the numerator.
I also understand that this has been established
by a "well-trusted authority".

I have used Mathcad to calculate rho and VSWR for
Reg's example, for many values of X0 (imaginary
part of Z0) from -0 to -250 ohms.

The data follows:

Note: |rho1*| is conjugated rho1, SWR1 is for
|rho1*|, |rho2| is not conjugated and SWR2 applies
to |rho2|

X0.......|rho1*|..SWR1.....|rho2|..SWR2
-250..... 0.935...30.0.....1.865...-3.30
-200..... 0.937...30.8.....1.705...-3.80
-150..... 0.942...33.3.....1.517...-4.87
-100..... 0.948...37.5.....1.320...-7.25
-050..... 0.955...43.3.....1.131...-16.3
-020..... 0.959...47.6.....1.030...-76.5

-015..... 0.960...48.4.....1.010...-204
-012..... 0.960...48.9.....0.997....+/- infinity
-010..... 0.960...49.2.....0.990....+305
-004..... 0.961...76.3.....0.974....+76.3
0000..... 0.961...50.9.....0.961....+50.9

The numbers for not-conjugate rho are all over the place and lead to ridiculous numbers for SWR. It is also obvious that for a low-loss line it doesn't matter much. But values of rho greater than 1.0, on a Smith chart correspond to negative values of resistance (see the data).

Something is wrong here that we are overlooking.

The use of conjugate rho is so much better behaved that I have some real doubts about some of our conclusions on this matter.

What about it folks? How can we get to the bottom of this?

Bill W0IYH

4434. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:53:18 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <iRu3b.21846$8i2.5866@newsread2.news.atl.earthlink.net>
Source record: 109380

Cecil:

[snip]
> Is this quote from _Optics_, by Hecht incorrect? "Unlike ordinary
> objects, photons cannot be seen directly; what is known of them
> comes from observing the results of their being either created or
> annihilated."
[snip]

Nope, Hecht must be far too old and out of date.

These days there are instruments available that acutally observe and count photons one-at-a-time.

Perhaps these instruments did not exist in Hecht's day, but they do now!

[snip]
> A footnote from _Optics_: "... although the light-is-corpuscular
> model has wide acceptance ... and is a crucial part of the
> contemporary discourse, like almost everything else in physics,
> it is not yet established beyond all doubt. See, for example,
> the summary article by R. Kidd, J. Ardini, and A. Anton,
> "Evolution of the modern photon", Am. J. Phys. 57 (1), 27 (1989)."
[snip]

Yes it is! Most of the really good work occured in the 1990's.

Have a look at Am. J. Phys. and Physical Review, and Nature in the decade of the 90's.

Better yet, buy and read "Entanglement" it has the whole story and all of the references.

I still say...

[snip]
> > Deal with it!
[snip]

[snip]
> It just occurred to me that virtual photons might explain telepathy.
> What do you think?
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

You might just be right. Again read "Entanglement" and the case for "teleportation".

It has been "proven" in various labs throughout the world, i.e. MIT, CERN, U Maryland,
etc... etc... in many diverse duplications of the same experiments, all in the decade of
the nineties.

It 's not exactly the same teleportation as you might imagine since only quantum states
can be transferred over distance instantaneously, while conventional "information" is
limited by relativity to the speed of light.

The "strange world of quantum mechanics" has not been found to be wrong yet. So far
it has been able to predict any and all physical effects with no exceptions, while wave
dynamics cannot make such claims. Why waves can't even explain the old fashioned
hundred year old photoelectric effect! What's your point?

;-)

--
Peter K1PO
Indialantic By-the-Sea, FL.

4435. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 21:54:25 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vksuguia840t8f@corp.supernews.com>
Source record: 109381

From your more recent posting, I misinterpreted what you mean by "driving point impedance". It's simply the impedance of the transmission line, not the impedance from the load looking back toward the source, nor the source impedance. Based on that interpretation, I'll try again.

Peter O. Brackett wrote:
> . . .
> Now at any particular frequency w = 2*p*f you will find that this general
> complex
> surge impedance Zo evaluates to a complex number, say Zo(jw) = r + jx.
> Later
> let's let r = 50 Ohms and x = 5 Ohms so that we can work out a numerical
> example.
>
> Consider either a semi-infinite length of this Zo line, or even a finite
> length of the Zo line
> terminated in an impedance equal to Z0. I am sure that you will agree that
> both the
> semi-infinite Zo line or the finite length Zo line terminated in Zo have the
> same
> driving point impedance namely Zo.

That is the impedance of the line. Ok.

> Now excite this semi-infinte Zo line by an ideal generator of open circuit
> voltage
> Vi = 2*a behind an impedance equal to the surge impedance Zo. In other
> words
> this is a Thevenin generator of ideal constant voltage 2a behind a complex
> impedance
> of Zo.

Oops. No it's not. Consider circuit "A", a voltage source in series with a lumped impedance equal to r + jx. And circuit "B", a voltage source in series with a transmission line of length, say, one wavelength, with characteristic impedance Z0 = r + jx. The two are not at all equivalent. To show that they're not, connect a 50 ohm resistor to the output of each. The resistor current in circuit "A" is Vi/(50 + r + jx). The current in circuit "B" is Vi/50.

David Robbins recently made several postings explaining that these two circuits are not equivalent. Hopefully the above example illustrates that.

Can't you do your "proof" with, say, a one wavelength transmission line of characteristic impedance Z0?

Roy Lewallen, W7EL

4436. Re: MOXON Antenna Project website

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 22:02:17 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030828180217.21934.00000102@mb-m04.aol.com>
Source record: 109382

>
> Who the hell was Moxon anyways?

The hell Moxon is L.A. Moxon, G6XN who wrote a number of excellent articles and book: HF Antennas for all locations.

Yuri da hell BUm

4437. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 22:04:52 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vksv2k96tkttd6@corp.supernews.com>
Source record: 109383

William E. Sabin wrote:

> David Robbins wrote:
>
>> "Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
>> news:_Og3b.19368$8i2.5884@newsread2.news.atl.earthlink.net...
>>
>>
>>
>> yes, i still hold that they are different. they are from completely
>> different realms of electromagnetics. in the transmission line
>> reflection
>> coefficient you are working with a distributed system that is modeled
>> with
>> wave equations. there are delays, waves travel and reflections return
>> after
>> a finite delay. in your example you have coerced the voltage and current
>> waves to be the same in the transmission line, but that is not the
>> same as
>> modeling the line itself.
>
>
> In simulation programs, transmission lines are solved for their two-port
> parameters, and are then treated as lumped circuits in the actual
> simulation, just like any lumped-element circuit. Which is a good way
> to do it.
>
> I notice that in the ARRL Antenna Book, 19th edition , on page 24-7, it
> is stated with definite finality that the reflection coefficient formula
> uses the complex conjugate of Zo in the numerator.
> I also understand that this has been established by a "well-trusted
> authority".
>
> I have used Mathcad to calculate rho and VSWR for Reg's example, for
> many values of X0 (imaginary part of Z0) from -0 to -250 ohms.
>
> The data follows:
>
> Note: |rho1*| is conjugated rho1, SWR1 is for |rho1*|, |rho2| is not
> conjugated and SWR2 applies to |rho2|
>
> X0.......|rho1*|..SWR1.....|rho2|..SWR2
> -250..... 0.935...30.0.....1.865...-3.30
> -200..... 0.937...30.8.....1.705...-3.80

> -150..... 0.942...33.3.....1.517...-4.87
> -100..... 0.948...37.5.....1.320...-7.25
> -050..... 0.955...43.3.....1.131...-16.3
> -020..... 0.959...47.6.....1.030...-76.5
> -015..... 0.960...48.4.....1.010...-204
> -012..... 0.960...48.9.....0.997....+/- infinity
> -010..... 0.960...49.2.....0.990....+305
> -004..... 0.961...76.3.....0.974....+76.3
> 0000..... 0.961...50.9.....0.961....+50.9
>
> The numbers for not-conjugate rho are all over the place and lead to
> ridiculous numbers for SWR. It is also obvious that for a low-loss line
> it doesn't matter much. But values of rho greater than 1.0, on a Smith
> chart correspond to negative values of resistance (see the data).
>
> Something is wrong here that we are overlooking.
>
> The use of conjugate rho is so much better behaved that I have some real
> doubts about some of our conclusions on this matter.
>
> What about it folks? How can we get to the bottom of this?
>
> Bill W0IYH
>

The equation in the ARRL Antenna Book is identical
to the equation for rho that is in the Power Wave
literature (see Gonzalez and also see Kurokawa).
Also, numerous literature sources describe how an
open-circuit generator with internal impedance Z0,
connected directly to load ZL, is actually a power
wave setup that leads to a rho formula that is
identical to the formula in the ARRL Antenna Book.
When calculating rho, it is not necessary to fool
around with the wave equations, because frequency
is constant and everything is steady-state.

Bill W0IYH

4438. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 22:26:34 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <ukv3b.21956$8i2.13625@newsread2.news.atl.earthlink.net>
Source record: 109384

Roy:

[snip]
> Oops. No it's not. Consider circuit "A", a voltage source in series with
> a lumped impedance equal to r + jx. And circuit "B", a voltage source in
> series with a transmission line of length, say, one wavelength, with
> characteristic impedance Z0 = r + jx. The two are not at all equivalent.
> To show that they're not, connect a 50 ohm resistor to the output of
> each. The resistor current in circuit "A" is Vi/(50 + r + jx). The
> current in circuit "B" is Vi/50.
[snip]

Y'all are missing my point.

First off... you, and Dave have just changed situation I proposed. I did
not say
that there was an unterminated line of one wavelength! You and Dave said
that. Forget it. That has nothing to do with the discussion/proof!

Read my "typing"! I said you must have *either* a semi-infinite line, whose
driving point impedance is known by all to be exactly Zo, *or*, but it is
simply beside the point, if you must insist on using a finite length
line then that is OK as well as long as it is terminated at it's far end
in an impedance equal to Zo.

In either case of the semi-infinite Zo line or the finite line terminated in
Zo the
driving point impedance is identical, i.e. it is Zo and you can't tell the
difference
between the two at the driving point.

[snip]
> David Robbins recently made several postings explaining that these two
> circuits are not equivalent. Hopefully the above example illustrates that.
[snip]

I disagree with Dave. A semi-infinite Zo line and a finite Zo line
terminated
in Zo are indistinguisable at the driving point and at all points along
the lines, until you come to the end of the finite line, but even there the
voltage and current across then terminating Zo is identical to the voltage
and current at the same point on the semi-infinite line.

All of this discussion about there being a difference is moot. There is no
difference. That's exactly why I set it up that way, simply because there
is no difference. You guys are missing the point.

Check out any book on transmission lines...

When you look into the end of a transmission line of semi-infinite extent you
see a driving point impedance of Zo. That is the very definition of Zo!

If you cut the line off to a finite length and terminate it in it's characteristic
impedance Zo the driving point remains the same, i.e. Zo. That again is
part of the defining charateristic of characteristic or surge impedance!

Take a chunk of 50 Ohm lossless coax and terminate it in 50 Ohms. What's
the impedance you see looking into the end? 50 Ohms. Now change the length
to something else and again terminate it in 50 Ohms, what 's the impedance?
50 Ohms, it doesn't matter how long the line is if it is terminated in it's
characteristic impedance it's driving point impedance is Zo! End of story.

You simply can't tell the difference between a line terminated in it's characteristic
impedance and the characteristic impedance of an semi-infinite line as found by
observiations at the driving point, they are one and the same. Zo!

[snip]
> Can't you do your "proof" with, say, a one wavelength transmission line
> of characteristic impedance Z0?
>
> Roy Lewallen, W7EL
[snip]

Yep, sure can... sigh, why is this soooo hard.

Use a one wavelength line if you insist, but terminate it at the far end with an
impedance equal to Zo!,

The length of the line has nothing to do with the proof.

As a matter of fact that is one of the neat things about the so-called
"proof" I cooked up.

The "proof" is just about whether there are reflections at a conjugate
match or not.

The proof, mathematical or experimental, just proves that there are no
reflections [as defined
by the classical rho] when the generator sees it's image Zo, but there are
reflections when the
generator sees it's conjugate! And the same in the reverse direction. i.e.
there are no reflections
when the line sees it's image Zo but there are reflections when it sees it's
conjugate.

And if Zo is a real resistance say Zo = R, then both situations are
identical.

That's all, nothing complicated, simple straightforward stuff, when Zo is complex, there *will* always
be reflections at a conjugate match.

This means that when there is a conjugate match on a complex line a "classical" reflectometer
will not indiacate zero reflected voltage. And if the scale on the reflectometer is actually calibrated
in "Watts" even though it measures Volts, it will indicate the presence of [[a "false"] reflected power
at a conjugate match.

But then everybody already knew that!

QED!

--
Peter K1PO
Indialantic By-the-Sea, FL.

4439. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 22:40:13 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <7g0tkvgo1d7rtvmp9dhk8vc6m03g2q1nbp@4ax.com>
Source record: 109385

On Thu, 28 Aug 2003 14:22:55 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:
>I guess I don't understand any of the above. Coherency just means the
>signals are of the identical frequency. Coherency doesn't specify phase.
>The phase of a reflected wave can be anything depending on feedline
>length and load.

Hi Cecil,

This shows the lack of your "optics." A laser which amplifies by
virtue of coherency, consists of a phase locked aggregation of what
would have been incoherent illuminations. It would be an LED
otherwise.

As I have said for quite a while now, it is a simple matter of
interference math. Such math shows everything of coherency or
differences. A coherent signal, is by definition of the same
frequency of another who matches that coherency.

To put it ironically, the challenge I offer is deliberately incoherent
to give that math a deliberate solution that is other than the result
of simple addition or subtraction.

73's,
Richard Clark, KB7QHC

4440. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 22:50:04 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkt1paf9fv7v75@corp.supernews.com>
Source record: 109386

Not QED at all. You claimed to have proved that maximum power is
delivered to a load when a transmission line is terminated such that the
reflected voltage on the line is zero. Here, you're agreeing that the
reflected voltage is zero when the line is terminated in its
characteristic impedance. So where's the proof that this condition leads
to maximum power to the load?

Roy Lewallen, W7EL

Peter O. Brackett wrote:
> Roy:
>
> [snip]
>
>>Oops. No it's not. Consider circuit "A", a voltage source in series with
>>a lumped impedance equal to r + jx. And circuit "B", a voltage source in
>>series with a transmission line of length, say, one wavelength, with
>>characteristic impedance Z0 = r + jx. The two are not at all equivalent.
>>To show that they're not, connect a 50 ohm resistor to the output of
>>each. The resistor current in circuit "A" is Vi/(50 + r + jx). The
>>current in circuit "B" is Vi/50.
>
> [snip]
>
> Y'all are missing my point.
>
> First off... you, and Dave have just changed situation I proposed. I did
> not say
> that there was an unterminated line of one wavelength! You and Dave said
> that. Forget it. That has nothing to do with the discussion/proof!
>
> Read my "typing"! I said you must have *either* a semi-infinite line, whose
> driving point impedance is known by all to be exactly Zo, *or*, but it is
> simply beside the point, if you must insist on using a finite length
> line then that is OK as well as long as it is terminated at it's far end
> in an impedance equal to Zo.
>
> In either case of the semi-infinite Zo line or the finite line terminated in
> Zo the
> driving point impedance is identical, i.e. it is Zo and you can't tell the
> difference
> between the two at the driving point.
>
> [snip]
>

>>David Robbins recently made several postings explaining that these two
>>circuits are not equivalent. Hopefully the above example illustrates that.
>
> [snip]
>
> I disagree with Dave. A semi-infinite Zo line and a finite Zo line
> terminated
> in Zo are indistinguisable at the driving point and at all points along
> the lines, until you come to the end of the finite line, but even there the
> voltage and current across then terminating Zo is identical to the voltage
> and current at the same point on the semi-infinite line.
>
> All of this discussion about there being a difference is moot. There is no
> difference. That's exactly why I set it up that way, simply because there
> is no difference. You guys are missing the point.
>
> Check out any book on transmission lines...
>
> When you look into the end of a transmission line of semi-infinite extent
> you
> see a driving point impedance of Zo. That is the very definition of Zo!
>
> If you cut the line off to a finite length and terminate it in it's
> characteristic
> impedance Zo the driving point remains the same, i.e. Zo. That again is
> part of the defining charateristic of characteristic or surge impedance!
>
> Take a chunk of 50 Ohm lossless coax and terminate it in 50 Ohms. What's
> the impedance you see looking into the end? 50 Ohms. Now change the length
> to something else and again terminate it in 50 Ohms, what 's the impedance?
> 50 Ohms, it doesn't matter how long the line is if it is terminated in it's
> characteristic impedance it's driving point impedance is Zo! End of story.
>
> You simply can't tell the difference between a line terminated in it's
> characteristic
> impedance and the characteristic impedance of an semi-infinite line as
> found by
> observiations at the driving point, they are one and the same. Zo!
>
> [snip]
>
>>Can't you do your "proof" with, say, a one wavelength transmission line
>>of characteristic impedance Z0?
>>
>>Roy Lewallen, W7EL
>
> [snip]
>
> Yep, sure can... sigh, why is this soooo hard.
>

> Use a one wavelength line if you insist, but terminate it at the far end
> with an
> impedance equal to Zo!,
>
> The length of the line has nothing to do with the proof.
>
> As a matter of fact that is one of the neat things about the so-called
> "proof" I cooked up.
>
> The "proof" is just about whether there are reflections at a conjugate
> match or not.
>
> The proof, mathematical or experimental, just proves that there are no
> reflections [as defined
> by the classical rho] when the generator sees it's image Zo, but there are
> reflections when the
> generator sees it's conjugate! And the same in the reverse direction. i.e.
> there are no reflections
> when the line sees it's image Zo but there are reflections when it sees it's
> conjugate.
>
> And if Zo is a real resistance say Zo = R, then both situations are
> identical.
>
> That's all, nothing complicated, simple straightforward stuff, when Zo is
> complex, there *will* always
> be reflections at a conjugate match.
>
> This means that when there is a conjugate match on a complex line a
> "classical" reflectometer
> will not indiacate zero reflected voltage. And if the scale on the
> reflectometer is actually calibrated
> in "Watts" even though it measures Volts, it will indicate the presence of
> [[a "false"] reflected power
> at a conjugate match.
>
> But then everybody already knew that!
>
> QED!
>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.
>
>
>

4441. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 22:53:03 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <g61tkv4oiio4vg6qd5de07507hqa2sn1qq@4ax.com>
Source record: 109387

On Thu, 28 Aug 2003 14:24:12 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Casting back ten watts by burning 20 hardly qualifies for more.
>
>You forget that I achieve a Z0-match without a conventional tuner.

Hi Cecil,

I didn't forget that your source sees a non Zs load if it uses a low pass filter following its final that does not match it (very often the case and tolerated by the user unaware). If you are using a tuned final, fine, if not - heat. Matching problems don't stop at the only connector you have access to. If the designer of your rig did his job, matching is performed through the entire chain of amplification. At some point the heat of amplifying a mW to 10 mW is not terribly significant, but the mismatch can still present a mediocre signal compared to what you paid for, but someone else got.

In amplifiers (especially for AF), feedback deliberately discards gain to achieve a high degree of matching tolerance. Most Ham transmitters lack that kind of matching tolerance (there is no significant feedback for the purpose of maintaining gain stability, phase stability, lowered distortion, reduced noise,....).

All of this is something Dr. Slick aspires to, and yet he has not yet drawn together to present (or understand) coherently. Most can recognize these characteristics of feedback, but too many here simply bob heads without understanding how and to what extent it is accomplished. Inattention to interstage matching is simply sloppy, or employed with a cavalier attitude that you will be satisfied with "OK" rather than best.

73's
Richard Clark, KB7QHC

4442. Re: Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 23:08:24 UTC
From: Paul Keinanen <keinanen@sci.fi>
Message-ID: <4luskvse7t3sikurvqbitakv7or45033o8@4ax.com>
Source record: 109388
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

On Thu, 28 Aug 2003 12:42:15 -0400, "Ralph Mowery" <rmowery@ctc.net>
wrote:

>While it may not work for you , look up "passive repeater" This is an
>antenna aimed at the desired station (on the outside of the building in your
>case) and a feedline inside the building hooked to another antenna.

In most cases you have to be quite close to the indoor antenna (within
a few meters), since the signal reradiated from the indoor antenna is
suffering an additional inverse square attenuation.

The worst situation for a passive repeater system is when the repeater
is in the mid path with the end stations A and B. The path losses
(expressed in decibels) from A to the repeater and from the repeater
to B are _added_. Compare this to the free space (line of sight
situation) in which the total path loss from A and B is only 6 dB more
than compared to the path loss for A to the mid point repeater
location.

In a passive repeater system, moving the repeater closer to the other
station, the sum of the path losses from A to the repeater and from
the repeater to B (expressed in decibels) will be smaller than with a
repeater in the mid path.

>I have not seen it but have heard that in long tunnels they have an outside
>antenna and an amplifier and some inside antennas for the FM radio stations.

Leaky coaxial lines are used as "antennas" in tunnels.

Paul OH3LWR

4443. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 23:30:36 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <IO-dnXJ-W69M-NOiXTWJjg@crocker.com>
Source record: 109462

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:_Og3b.19368$8i2.5884@newsread2.news.atl.earthlink.net...
> David:
>
<snip a bunch>
> These two scenarios both of which entail the connection of a generator to
a
> load, one image matched to the load and the other conjugate matched to the
> load, with the load being a semi-infinite line of surge impedance Zo, ties
> up the whole discussion in one neat little package, no?
>
> And there are not two separate cases as you suggest, one being generator
> impedance matching and the other being transmission line interconnections.
>
> Generator impedance matching and transmission line interconnections are
> identical situations, having all the same variables i, v, a, b, etc... you
> can look at reflection problems in either scenario, transmission lines or
> generators and loads. The calculations and formulas you use are all the
> same. They are not different as you suggest.
>
> Thoughts, comments?

yes, i still hold that they are different. they are from completely
different realms of electromagnetics. in the transmission line reflection
coefficient you are working with a distributed system that is modeled with
wave equations. there are delays, waves travel and reflections return after
a finite delay. in your example you have coerced the voltage and current
waves to be the same in the transmission line, but that is not the same as
modeling the line itself.

in the generator feeding a load you are looking at a lumped model. these
are normally not solved with wave equations, there are no delays or
reflections. the problem of calculating maximum power transfer from a
generator to a load of a given impedance is a simple problem solved with no
waves and only one pde used to find the max of the power to the load wrt the
generator impedance. it doesn't care what the load is, as long as it is a
linear time invariant impedance. now, you could create that impedance by
putting a load on the end of a transmission line and transforming it back
through the normal transmission line equations, but once you do that you
throw the line out and solve the simple equations in the lumped models.

these discussions always seem to end up in this same quagmire, one group
trying to solve everything with wave equations, sinusoidal steady states,
transmission line transformations, and the other holding on to the lumped
models and trying to make them fit the wrong problem domain. one thing i

did learn in ee classes was to use the right model for the job, choosing the wrong one will give you wrong answers most of the time.... the real problem is that sometimes you can get the right answer from the wrong model just because the numbers work out... and when you have to show your work you lose credit for using the wrong method but still getting the right numerical answer. that is what i see here, someone has started with a simplified case that just happens to work out to the same answer and has tried to generalize it... -10 points for the wrong method!

4444. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-28 23:57:46 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <u12tkvsvkacn0i9g028jkjka9q4vnc4smb@4ax.com>
Source record: 109389

On Thu, 28 Aug 2003 21:59:17 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:
>I'm not interested in "winning". All I'm interested in is getting the
>facts right.

Hi Ian,

Are you the goat being used to clear land-mines? You should have awaited the arrival of that copy to arm your education before tentatively proceeding into no-man's-land. Sorry OM but this is my turf, and I was trained in the art. I don't need to trade on my credentials, because, as Chapman will reveal to you, it is not particularly remarkable until you reject the obvious and come up with indecipherable data. That data is found in the form of the solution to the challenge no one dare even test at the bench without the prospect of a glance over the shoulder as if it were an unnatural act revealing them in shame. How can you claim facts as a noble goal when you shy from calculation or testing? OK, you lack the calculation offered by Chapman, a significant chapter for you and others certainly; but is/are your bench(es) so poor as to restrict your experimentation? I am not persuaded by such poverty.

You also could have at least waited for George (who can observe both my argument and the text) to either blast me away, or confirm, so, in a sense, your progression is only of wounded ego as you really have added nothing to the discussion. (Your affirmations of my logic, even if unintended, are not informed enough.)

As for the other cowering giants, I still remain without an answer to my challenge such that even if everything I said were a pack of lies would still have a result. None even dare posit it is 3.27dB! What price courage? What inhibits any of those greats from supplying even a guess given that I bow to that attitude? One, it is incalculable in your philosophies; and Two, you lack the means to obtain two resistors and a hank of line. Either, for me, is the ultimate irony which steels my courage to withstand the petty repetition of "t'ain't so" offered in place of intellectual argument.

By the way, the source of the challenge is far more accessible and found in the libraries of many here. I withhold its citation to reduce the hazard of those books being tossed into the rhetorical bonfire of the vanities. Of course, this could lead to entire shelves being swept into the heap to avenge my discord. You appear to be in retrograde motion in that regard so you do have some redeeming features. Take care that your education doesn't lead you to the same pillar others would have me tied to. ;-)

Good luck Ian and
73's
Richard Clark, KB7QHC

4445. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 00:03:23 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bim58b$f2s$1@hercules.btinternet.com>
Source record: 109390

"Dr. Slick" wrote
> What about the ARRL?
================================

Dear Slick, you must be new round this neck of the woods.

Don't you realise the ARRL bibles are written by the same sort of people who haggle with you on this newsgroup?

4446. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 00:19:36 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <rOqdnW6fvbeGAdOiU-KYuA@crocker.com>
Source record: 109391

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:5su3b.21817$8i2.12116@newsread2.news.atl.earthlink.net...
> Roy:
>
>
> This is a long winded explanation of a simple concept comprising a very
> simple circuit
> containing an ideal generator, a complex impedance and a terminated line,
> along with
> no more than a couple of equations that constitutes a clear and simple
> mathematical
> and/or experimental "proof" that the reflected voltage is non-zero for a
> conjugate match
> and is zero for an image match.
>
> QED
>
sorry, not always... another clear generalization from oversimplifying and
applying the wrong model. there are cases where there is zero reflected
voltage for a conjugate match.

4447. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 00:23:31 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <BGadnU_MyMyVANOiU-KYvg@crocker.com>
Source record: 109392

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:aHu3b.21832$8i2.8842@newsread2.news.atl.earthlink.net...
> Dave:
>

> The impedance matching dynamics at the reference plane/junction point are
> the same for
> distributed and lumped systems, they obey all the same equations, their
> electrodyanamics
> is the same, one simply cannot tell the difference at the driving point.
>
> If you don't like lumped models, then make the internal resistance of the
> Thevenin
> generator out of a distributed line. It will work just the same way.
>

i'm sorry, but that just isn't true. make me an equivalent, with a
distributed line, of a 1v step voltage source in series with a 1ohm
resistor.

4448. Re: Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 00:39:49 UTC
From: charlesb <n5pvl@sbcglobal.net>
Message-ID: <phx3b.7271$em5.3342@newssvr27.news.prodigy.com>
Source record: 109393
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

I've never had any luck using just one can. You could tie the string to a doorknob and use just one can - but what are you going to hear on it?

To make it work, have another can on the far end of the string, with someone speaking clearly into the can. Remember to keep the audio transmission line taut for best reception.

Charles Brabham, N5PVL

4449. Re: UHF antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 01:05:09 UTC
From: brian1509@yahoo.com
Message-ID: <6762ff06.0308281705.418516c5@posting.google.com>
Source record: 109394

nm5k@wt.net (Mark Keith) wrote in message
news:<25eb70d7.0308280941.6e1020e8@posting.google.com>...
> brian1509@yahoo.com (brian) wrote in message
news:<6762ff06.0308271629.447eec1b@posting.google.com>...
> > What's the best feedline for UHF antenna, 75 ohm cable or 300 ohm
> > strap? The antenna is to be used for recieving 674 MHz (TV channel 48)
>
> Unless the coax is very low loss, I'd have to put my money on the 300
> ohm twinlead setup having the least overall loss, even counting the
> little balun you will need. At least when dry... Or at least thats
> what I found when I ran a large UHF TV antenna for 420 mhz ATV. I had
> the least loss with the twinlead. MK

Thanks for the reply, I'm trying to recieve a station 100 miles away,
the station is 1.5 megawatts non-directional so every little advantage
I can get will help.

4450. QST & Antenna Gain

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 01:13:11 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <3F4EA8A6.342FCCF9@agilent.com>
Source record: 109395

Has anybody noticed that QST is printing antenna gain numbers again (in advertisements, at least)?

Al W6LX

4451. Re: QST & Antenna Gain

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 01:30:03 UTC
From: Dan/W4NTI <w4nti@get>
Message-ID: <v0y3b.22153$8i2.300@newsread2.news.atl.earthlink.net>
Source record: 109396

Only the ones that have submitted the proper information as required by the ARRL. What that is I am not sure. But I seen a comment on that in QST recently.

Dan/W4NTI

"Al Lorona" <al_lorona@agilent.com> wrote in message news:3F4EA8A6.342FCCF9@agilent.com...
>
> Has anybody noticed that QST is printing antenna gain numbers again (in
> advertisements, at least)?
>
>
> Al W6LX

4452. Re: QST & Antenna Gain

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 01:44:01 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <rtbtkvseaumsd3ltojbslvh9078g3214og@4ax.com>
Source record: 109412

On Thu, 28 Aug 2003 18:13:11 -0700, Al Lorona <al_lorona@agilent.com>
wrote:

>
>Has anybody noticed that QST is printing antenna gain numbers again (in
>advertisements, at least)?
>
>
Yes, that policy was updated in 1998. You can get the whole story at:

http://www.arrl.org/antmodels/policyart.html

73
Danny, K6MHE

4453. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:01:54 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4eb592$1_8@corp.newsgroups.com>
Source record: 109397

Richard Clark wrote:
> To put it ironically, the challenge I offer is deliberately incoherent
> to give that math a deliberate solution that is other than the result
> of simple addition or subtraction.

So how do you get the reflections in a single source system to be
incoherent?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4454. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:06:43 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4eb6b4_8@corp.newsgroups.com>
Source record: 109399

David Robbins wrote:
> these discussions always seem to end up in this same quagmire, one group
> trying to solve everything with wave equations, sinusoidal steady states,
> transmission line transformations, and the other holding on to the lumped
> models and trying to make them fit the wrong problem domain.

Plus a third group of particle physicists saying waves don't exist. :-)
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4455. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:09:32 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <RbacnaKiBph8KNOiXTWJiw@comcast.com>
Source record: 109398

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308281340.602cffd9@posting.google.com...
> What exactly do you mean by Zr at point z=0? i don't fully
> understand the page you sent, and neither do you obviously.
>

Lower case z is distance, with the load at z=0

> If the power RC is the square of the MAGNITUDE of the voltage
> RC, then a voltage RC >1 will lead to a power RC >1.

He squares it to get the magnitude of the vector. There is still a phase
angle
>
> How do you get more reflected power than incident power into a
> passive network, praytell??

You don't. at gamma =2.41, the phase angle is about 65 degrees, and the real
part of gamma =1.0

Now try this: using the conjugate formula, calculate gamma for the case
where the line is terminated in a short circuit, and tell us how that meets
the boundary condition.

Tam/WB2TT

4456. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:15:28 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4eb8c2$1_8@corp.newsgroups.com>
Source record: 109401

Ian White, G3SEK wrote:
> The reason no-one will take on your challenge is that it's an empty one:
> the source impedance has no effect on the SWR, so there's nothing there
> for us to prove.

I'm still trying to understand the challenge. Do you understand where
the alleged incoherence comes from?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4457. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:20:02 UTC
From: W4WNT <w4wnt@carolina.rr.com>
Message-ID: <mLy3b.35327$5H4.1442777@twister.southeast.rr.com>
Source record: 109400

There is the World Radio Handbook, also called the Passport to World Radio
in later editions. It lists all the SW foreign broadcast stations,
frequencies and times of operation.

Good luck,

Time to study for a ham license!

Bill, W4WNT

"Walter" <junkmail@altonillinois.com> wrote in message
news:70729ae5.0308261847.71df2eae@posting.google.com...
> On the surface, this sounds like a stupid question, but how do I know
> my shortwave wire dipole antenna is picking up all it can?
>
> If I live in the St. Louis Missouri Area, is there a list of stations
> X, Y, and Z that I should be able to pick up? (thinking shortwave
> here, not local stations)
>
> And if so, If I can pick up station A from Egypt, station B from
> Japan, and station C from Moscow, then I'm doing really good?
>
> Just wondering.
>
> Thanks..

4458. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:27:37 UTC
From: kd1@sympatico.ca
Message-ID: <3F4EBA19.1CCEB46A@sympatico.ca>
Source record: 109403

Richard Harrison wrote:
>
> Keith wrote:
> "The last is true, but p(t) = v(t)*i(t); volts and amps must be present
> simultaneously for there to be power."
>
> By the same token, a-c flow is discontinuous at all zero crossings! I
> don`t think so.

There is certainly no power at the zero crossings. This variation in
the rate of energy flow is why the power dudes really prefer 3 phase;
energy flow is constant.

...Keith

4459. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:40:44 UTC
From: Floyd Sense <sentek@sprintmail.com>
Message-ID: <M2z3b.17123$jY2.10125@newsread1.news.atl.earthlink.net>
Source record: 109402

If only it were so! Houses in my area have very nice copper plumbing, but the water pipe connecting the copper to the main in the street is plastic all the way. The copper never even touches the ground!

"Adam T. Cately" <atcately@bright.net> wrote in message news:3F48AE6C.C00BA6B4@bright.net...
> <SNIP>
> NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
> as it goes directly to the earth outside the building. The hot water
> pipes are routed through the hot water heater(s) and are NOT a direct
> path to ground.

4460. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 02:54:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bimf99$d66$1@titan.btinternet.com>
Source record: 109404

Slick sed -
> George, with all due respect, even if the SWR
> measurement was done right at a short or open,
> the highest rho you could get would be 1.
>
==========
Dear Slick,

Not if the circular Smith Chart is extended outwards to a radius of 1 + Sqrt(2). Or more if you don't want to be restricted to transmission lines.

I have a vague recollection this has already been done by somebody who followed Smith for use with the higher values. I don't think Smith ever claimed any special properties for his chart. It was his employer, Bell System, who attached his name to it.

Smith produced his chart around 1939 to simplify line calculations at HF and above. His principal assumption/simplification was that only purely resistive values of line Zo were admissible. Also that lines were sensibly lossless. His starting point were charts (3-dimensional) which had been used as early as the 1890's to solve problems relating to design, installation and operation of power lines, telephone and telegraph lines. A Smith chart could be printed on a flat sheet of paper and at HF the small calculating errors were quite acceptable for engineering purposes. A valuable tool in those times.

The old original charts provided solutions to equations involving complex hyperbolic functions such as Sinh(A + jB) where A is line attenuation in nepers and B is phase shift in radians. For example, the input impedance of an open-circuited transmission line (or end-fed antenna wire) is (Ro + jXo)*Coth(A + jB) ohms which is a fearsome calculation by log tables or slide rule but much easier by chart. And can now be done in milli-seconds inside a simple computer program

Smith set Xo = 0 and A = 0 and be damned to the consequences - which you lot, floundering in the mire, valiantly attempting to get back to basics, are now suffering from.

Given a line's primary characteristics, R,L,C,G, length, or it's secondary characteristics Zo, dB, phase angle, plus the line's terminatiing impedance it is possible to calculate, by classical methods, all other quantities of engineering interest - WITHOUT ANY REFERENCE TO REFLECTION COEFFICIENT OR SWR which are mere man-made notions supposed to assist understanding of what goes on in the real world but, as exchanges on this newsgroup show, are just a pair of bloody useless nuisances.

Such is life. G4FGQ.

4461. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 03:01:50 UTC
From: "George, W5YR" <w5yr@att.net>
Message-ID: <ymz3b.118233$0v4.8458858@bgtnsc04-news.ops.worldnet.att.net>
Source record: 109406

Yes, Richard . . .

Did you mean "Chipman" by chance?

That is the author's name . . .

--
73/72, George
Amateur Radio W5YR - the Yellow Rose of Texas
Fairview, TX 30 mi NE of Dallas in Collin county EM13QE
"In the 57th year and it just keeps getting better!"
<mailto:w5yr@att.net>

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:qb8skv0tshns2ig8hr0oagb22fhj1k8j1c@4ax.com...
> On Thu, 28 Aug 2003 05:58:09 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> wrote:
>
> >Richard Clark wrote:
> >> "...the generator impedance is 100+0j ohms, and the line is 5.35
> >> wavelengths long."
> >
> >What does the generator impedance have to do with line losses?
>
> Hi Cecil,
>
> From Chapman (you following this George?) page 28:
>
> "It is reasonable to ask at this point how, for the circuit of
> Fig. 3-1(b), page 18, on which the above analysis is based, there
> can be voltage and current waves traveling in both directions on
> the transmission line when there is only a single signal source.
> The answer lies in the phenomenon of reflection, which is very
> familiar in the case of light waves, sound waves, and water waves.
> Whenever traveling waves of any of these kinds meet an obstacle,
> i.e. encounter a discontinuous change from the medium in which
> they have been traveling, they are partially or totally
> reflected."
> ...
> "The reflected voltage and current waves will travel back along
> the line to the point z=0, and in general will be partially
> re-reflected there, depending on the boundary conditions
> established by the source impedance Zs. The detailed analysis of
> the resulting infinite series of multiple reflections is given in
> Chapter 8."

>
> The Challenge that I have offered more than several here embody such
> topics and evidence the exact relations portrayed by Chapman (and
> others already cited, and more not). The Challenge, of course, dashes
> many dearly held prejudices of the Transmitter "not" having a
> characteristic source Z of 50 Ohms. Chapman also clearly reveals that
> this characteristic Z is of importance - only to those interested in
> accuracy.
>
> Those hopes having been dashed is much evidenced by the paucity of
> comment here; and displayed elsewhere where babble is most abundant in
> response to lesser dialog (for the sake of enlightening lurkers no
> less). Clearly those correspondents hold to the adage to choose
> fights you can win. I would add so do I! The quality of battle is
> measured in the stature of the corpses littering the field. :-)
>
> So, Cecil (George, Peter, et alii), do you have an answer? Care to
> take a measure at the bench? As Chapman offers, "just like optics."
> Shirley a man of your erudition can cope with the physical proof of
> your statements. ;-)
>
> The only thing you and others stand to lose is not being able to
> replicate decades old work. Two resistors and a hank of line is a
> monumental challenge.
>
> 73's
> Richard Clark, KB7QHC

4462. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 03:07:24 UTC
From: kd1@sympatico.ca
Message-ID: <3F4EC36C.7F50FBB5@sympatico.ca>
Source record: 109408

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> And in a two-source DC circuit, you can indeed have
> net voltages derived from superposition of the two source voltages.
> Put them in series adding and you get a voltage maximum. Put them in
> series subtracting and you get a voltage minimum.

But power can only be computed using the resultant voltage and current
(or, if you prefer, NET voltage and current).

> > What about that power plug on the wall? Too difficult?
>
> Too many sources, too many feedlines, too many loads. And the
> wavelength is really too long to illustrate RF transmission lines.
> I get a wavelength just over 3000 miles, which would stretch out
> straight from Texas to Alaska.

Let me make it simpler then: the lamp cord from the wall to the table
lamp; lamp off and lamp on. Most lamp cord looks like twin-lead; some
have said it is approximately 100 Ohms but for the purposes of
discussion feel free to assume any convenient Z0 for the cord.

> > When we measure a voltage using an ideal voltmeter, how do we know if
> > this voltage is composed of components ...
>
> For an RF transmission line, use a directional wattmeter to ascertain
> if reflected power exists. If your 50 ohm SWR meter is in a 50 ohm Z0
> environment, it will indicate the presence or absence of reflected
> power.

And if it is not an RF transmission line?
If it is a DC circuit? Say your phone line when on hook?
If it is a lamp cord?

Do we really need directional wattmeters to understand what is
happening?

> > If you wish, the wall outlet provides an excellent opportunity for
> > explanation by example.
>
> Nope, it doesn't. That wall outlet doesn't have one source, one feedline,
> and one load. If you had one 60 Hz generator hooked up to 3100 miles of
> lossless transmission line, you could certainly observe reflections over
> that one wavelength of wire.

Please, replace wall outlet with lamp cord to table lamp.

...Keith

4463. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 03:15:59 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <q7etkvs16hafjfn9244viqvoe33ijefme3@4ax.com>
Source record: 109407

On Thu, 28 Aug 2003 21:01:54 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> To put it ironically, the challenge I offer is deliberately incoherent
>> to give that math a deliberate solution that is other than the result
>> of simple addition or subtraction.
>
>So how do you get the reflections in a single source system to be
>incoherent?

Hi Cecil,

Two reflective interfaces with an aperiodic distance between.

The cable (or any transmission line) falls in between. So does most instrumentation to measure power. All fall prey to this indeterminacy (unless, of course, it is made determinant through the specification of distance, which it is for the challenge). As I offered, this challenge is not my own hodge-podge of boundary conditions, it was literally drawn from a standard text many here have - hence the quote marks that attend its publication by me. I am not surprised no one has caught on, I also pointed out this discussion is covered in the parts of Chapman that no one reads. Whatchagonnado?

The example of the challenge serves to illuminate (pun intended) the logical shortfall of those here who insist that a Transmitter exhibits no Z, or that it is unknowable (to them, in other words), or that it reflects all power that returns to it (to bolster their equally absurd notion that the Transmitter does not absorb that power). Chapman is quite clear to this last piece of fluff science - specifically and to the very wording. Engineers and scientists simply converse with the tacit agreement that the source matches the line when going into the discussion of SWR (and why Chapman plainly says this up front on the page quoted earlier). This is so commonplace that literalists who lack the background (and skim read) fall into a trap of asserting some pretty absurd things. It follows that for these same literalists, any evidence to the contrary is anathema, heresy, or insanity - people start wanting to "help" you :-P

Ian grasped at the straw that the discussion simply peters out by the steady state and wholly disregards the compelling evidence (and further elaboration of Chapman to this, but he lacks another voice, the same Chapman, to accept it) with a forced mismatch at both ends of the line. It is impossible to accurately describe the power delivered to the load without knowing all parameters, the most overlooked is

distances traversed by the power (total phase in the solution for interference). I put the challenge up to illustrate where the heat goes (the line); and it is well into the steady state, as I am sure no one could argue, but could easily gust
"t'ain't so!"
At least I saved them from the prospect of strangling on their own spit sputtering "shades of conjugation." [Another topic that barely goes a sentence without being corrupted with a Z-match characteristic.]

Using this example for the challenge forces out the canards that the source is adjusting to the load (in fact, the challenge presents no such change in the first place) and dB cares not a whit what power is applied unless we have suddenly entered a non-linear physics. None have gone that far as they have already fallen off the edge earlier.

Now, be advised that when I say "accurately" that this is of concern only to those who care for accuracy. Between mild mismatches the error is hardly catastrophic, and yet with the argument that the Transmitter is wholly reflective, it becomes catastrophic. The lack of catastrophe does not reject the math, it rejects the notion of the Transmitter being wholly reflective. This discussion in their terms merely drives a stake through their zombie theories.

I would add there has been another voice to hear in this matter. The same literalist skim readers suffer the same shortfall of perception. We both enjoy the zen-cartwheels so excellently exhibited by the drill team of naysayers. ;-)

73's
Richard Clark, KB7QHC

4464. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 03:22:28 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ebhtkvs03su8e4orpka3n7ur5pqr71o57h@4ax.com>
Source record: 109409

On Thu, 28 Aug 2003 21:15:28 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Ian White, G3SEK wrote:
>> The reason no-one will take on your challenge is that it's an empty one:
>> the source impedance has no effect on the SWR, so there's nothing there
>> for us to prove.
>
>I'm still trying to understand the challenge. Do you understand where
>the alleged incoherence comes from?

Hi Cecil,

You have expended far more time climbing Everest in search of the
guru, than simply doing the challenge at the bench.

Do you trust your own work? If not, how many Everests would you climb
before you accepted their word? Best 3 out of 5? 5 of 7? ....?

Any negative evidence would put the kibosh on this challenge, I would
think. Then we could all write the editors of that reference and ask
them why they included such trash.

What?

Think of the savings in fewer knees to patch and scuffed boots. ;-)

73's
Richard Clark, KB7QHC

4465. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 03:42:09 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0ditkv421qdtnrova9tkdhsbbmgk91r0fi@4ax.com>
Source record: 109410

On Fri, 29 Aug 2003 03:01:50 GMT, "George, W5YR" <w5yr@att.net>
wrote:

>Yes, Richard . . .
>
>Did you mean "Chipman" by chance?
>
>That is the author's name . . .

Hi George,

Ha! You got me there! ;-)

And here I've been ignoring my spell checker. :-(

This will no doubt vindicate many from the minutes of drudgery of
working over a hot bench to reduce my challenge to ashes.
"The best-laid schemes o' Mice an' Men
gang aft a-gley...."

73's
Richard Clark, KB7QHC

4466. Swan 250C w/ac supply

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 04:37:31 UTC
From: Carl Domanico <carl.domanico@verizon.net>
Message-ID: <3F4ED88C.8050204@verizon.net>
Source record: 109411

Hi...I've been looking around for one of the older Swan Transcevers...It is The Model 250C
6 Meter Unit, with if possible the Matching AC Supply...I'm not looking for a basket case, however. the radio does not have to be Mint either ! Also the price has to be reasonable...or else I might as well go out and but one of these new Icom mobile radios with multi-mode VHF-UHF-6 meters-and HF to boot !!...for some $ 725.00
Anyway if someone out there has one of these radios ...please drop me a line and we can go from there...OK

Thanks a Lot
Carl
N2MFW

4467. Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 05:31:02 UTC
From: ryeburn@sfu.caz
Message-ID: <ryeburn-2808032231020001@bni030qny8kc.bc.hsia.telus.net>
Source record: 109413

I've enjoyed reading this and related threads. Some comments have been made about using calculus. Though I spent a significant portion of my pre-retirement life attempting to teach that subject to undergraduates, I don't believe in using calculus whenever simple geometry and/or algebra makes it unnecessary. A proof that avoids calculus can be meaningful for those who don't know calculus, or who haven't used it for a while.

With that said, I have a few comments to make about some of the assertions I have read here recently, some of which have appeared without explicit proof.

(1) The surge impedance of a (lossy) transmission line cannot have an angle more than 45 degrees away from the real axis.

This is true. Z_0 = sqrt((R + jwL)/(G + jwC)) (here I am using "w" instead of omega). Both the numerator and denominator lie in the first quadrant, so their quotient lies in the right half plane (angles subtract when one divides), and the square root of that has an angle lying between - 45 degrees and + 45 degrees. (The branch of the square root with positive real part has to be taken; if you can find coax whose surge impedance has a negative real component, I'll pay you good money for it.)

[Since this angle lies between - 45 degrees and + 45 degrees, peculiar consequences deduced from calculations involving surge impedances such as 50 - j200 can be ignored.]

(2) There is a nice geometrical interpretation for the reflection coefficient, or rather for its magnitude. Since the coefficient is (Z_L - Z_0)/(Z_L + Z_0), its magnitude expresses how much further Z_L is from the surge impedance Z_0 than it is from the negative, - Z_0, of the surge impedance. If Z_L is equidistant from Z_0 and - Z_0, then the magnitude of the reflection coefficient is 1. If Z_L is closer in the complex plane to Z_0 than it is to - Z_0, then the magnitude of the reflection coefficient is less than 1. If Z_L is closer to - Z_0 than to Z_0, then the reflection coefficient's magnitude exceeds 1. Now plot the points Z_0 and - Z_0 and draw the perpendicular bisector of the segment joining them. If Z_L is on that perpendicular bisector, the magnitude of the reflection coefficient is 1; if it is on Z_0's side of the bisector, the magnitude is less than 1; if it is on - Z_0's side, the magnitude exceeds 1. Of course Z_L has to stay in the right half plane; if it didn't have to do this, you could take Z_L very close to - Z_0 and get enormous reflection coefficient magnitudes.

(3) Consider an ellipse having Z_0 and - Z_0 as its foci. There are infinitely many such ellipses, including a degenerate one (just the segment between the "foci"). All these different ellipses fill up the

complex plane, and no point in the plane is on more than one of them. On any one such ellipse, the sum of the distances from a point on the ellipse to the two foci Z_0 and - Z_0 is constant (definition of an ellipse), the value of that constant depending upon which ellipse it is but the constant has to be at least as large as the interfocal distance. We should ignore points on the ellipse that are in the left half plane. A portion of the ellipse will be in the same quadrant as Z_0, and a portion will be in the quadrant that contains the conjugate of Z_0. (Remember we are ignoring the points in the left half plane.) All of the points on the ellipse that are in Z_0's quadrant are closer to Z_0 than to - Z_0, so they'll give reflection coefficients with magnitude less than 1. So will those of the points on the ellipse in the other quadrant under consideration that are between the real axis and the perpendicular bisector. But those that are between the perpendicular bisector and the imaginary axis will be closer to - Z_0 than to Z_0 and thus will yield reflection coefficients with magnitudes greater than 1. It should be obvious that, along any given ellipse, the one for which the magnitude of the reflection coefficient is greatest is the one on the imaginary axis, since as we move along the ellipse towards that point, the distance to - Z_0 decreases and the distance from Z_0 increases (remember, their sum is constant along the ellipse). So on any *one* ellipse, the largest reflection coefficient magnitude occurs where the ellipse meets the imaginary axis, and thus Z_L has real part 0 and imaginary part of opposite sign to that of Z_0.

(4) Start with Z_0 real, and slowly rotate Z_0 into either the first or fourth quadrant, but not more than 45 degrees in either direction, keeping the same magnitude while you rotate. The segments joining Z_0 and - Z_0, their perpendicular bisectors, and the various ellipses will all simultaneously rotate. It's now obvious that for ellipses of any fixed size, the one producing the largest magnitude for the reflection coefficient will occur when Z_0 is at + 45 degrees or - 45 degrees. So if we want to maximize the reflection coefficient magnitude, we can restrict attention to those two cases. The - 45 degree case (capacitive surge impedance) is the more familiar one, but the math is the same either way. The only question is, which one of the ellipses should we use, if we wish to maximize the magnitude of the reflection coefficient?

(5) So now we're going to assume Z_0 = k(1 - j), and thus - Z_0 = k(-1 + j), while Z_L = ktj. It's clear that the factor k is going to cancel out when calculating the reflection coefficient, so I will henceforth ignore it (i.e., normalize it to k = 1 by appropriate choice of units). If you are of a geometrical turn of mind, you can produce a geometrical argument showing that the best one can do is to make sure the ellipse meets the imaginary axis at the same distance from the origin as the two foci, i.e. at j*sqrt(2). If you are of an algebraic turn of mind, you can make an algebraic argument involving completing the square to demonstrate the same thing. If you insist on using calculus, it's now just one variable calculus, not multivariable calculus, since the only independent variable is t, which will turn out to be sqrt(2) at the maximum. (Hint: don't look at the ratio of distances; look at the square of that ratio, so as to get rid of all those square roots.)

(6) Once all that is done, it's just a bit of algebra to show that when t = sqrt(2) then the magnitude of the reflection coefficient is 1 + sqrt(2). That's the best (worst?) you can do. And if you can find some coax whose surge impedance angle is - 45 degrees, you can indeed do it.

All the above was done from first principles. I am not fortunate enough to own a copy of Chipman, though I wish I were, but if this is what he says, then I am in full agreement with him.

David, ex-W8EZE, willing to part with some of my pension money for a copy of Chipman if you know where one can be found (Powell's doesn't have any copies)

--
David or Jo Anne Ryeburn
ryeburn@sfu.caz
To send e-mail, remove the letter "z" from this address.

4468. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 05:46:15 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308282146.374b6e27@posting.google.com>
Source record: 109414

Well, I really was hoping I'd shame someone (especially Garvin) into
actually going through the math exercise. It's not all that
difficult, and as you've said before, and as I agree, they'd benefit
from actually doing it, and also from thinking about what's going on.
Some of the more subtle physics (such as phase shifts associated with
skin effect) isn't so easily accessible, but surely these things are
to those who are willing. It seems like everyone agrees fairly
readily that Zo=Vf/If=-Vr/Ir (to a good approximation, anyway), and
also to the couple other things you need to let you find Vr/Vf, but
things rather rapidly seem to fall apart along the way to Vr/Vf. I've
given up trying to understand why, Reg, so I might as well get a bit
of dry humor out of it all.

Actually, I think you _did_ state the value once or twice recently in
these annals.

Cheers,
Tom

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<billqp$cr4$1@hercules.btinternet.com>...
> Tom, to save everybody a lot of trouble -
>
> The greatest theoretical value of the magnitude of the
> reflection coefficient occurs when the angle of Zo is
> -45 degrees, and the terminating impedance is a pure
> inductive reactance of |Zo| ohms.
>
> Do you think I should have mentioned this when I
> began this and other threads by saying a reflection
> coefficient greater than unity can occur?
>
> The riot police can now return to barracks.
> ----
> Reg, G4FGQ.
...

4469. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 06:16:19 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308282216.62b6ad1d@posting.google.com>
Source record: 109415

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308281329.3504f631@posting.google.com>...
> k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308281051.150ecc3f@posting.google.com>...
> >
> > Garvin, it's a book, not a paper. Your bookstore can probably help
> > you with it. Besser, at least, apparently came to understand the
> > error of his ways on this point, and Besser Associates is now
> > presenting the correct formula in their classes, per the email I
> > posted from them. I haven't checked with Pozar or Kurokawa, but
> > strongly suspect you are taking their works out of context and
> > misinterpreting them.
> >
> > Cheers,
> > Tom
>
>
> You are full of sh**. You never emailed Besser, and they are
> teaching it correctly.

So why don't you email Rex Frobenius, rfrobenius@besserassociates.com,
or call him at 650-949-3300, and ask him if he remembers the email he
got from me through Besser's web site last Thursday, 21 Aug.? And
while you're at it, ask him what they are _now_ teaching. By posting
stuff like the above, you're only degrading yourself. Folk here who
have known me for several years know full well that I'd check out
sources like that, and would not lie about it or fabricate a reply
such as I posted. You might consider doing yourself a favor and
growing up a bit, but in the mean time, be aware that you're providing
me with a source of humor, at your expense.

Cheers,
Tom

4470. Re: MFJ 989c tuner question

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 07:02:27 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <a8utkvg0lj4ce6br7p17fjg38h8i92v1sl@4ax.com>
Source record: 109454

On 27 Aug 2003 09:56:49 -0700, nm5k@wt.net (Mark Keith) wrote:

>"John Passaneau" <jxp16@psu.edu> wrote in message
news:<biibsvjdu1@f04n12.cac.psu.edu>...
>> It at the lowest inductance if I understand your description. The rolling
>> tap has shorted out the inductor at that point.
>>
>
>With mine, 000 is the lowest inductance. But mine is an older 989c.
>They may vary. Try tuning 10m. If it's tuning near the 000 end, thats
>min inductance.
>MK

Still playing with this antenna to get things sorted out, but I'm
using a 44-ft. dipole with 42-ft. of twinlead. 10m is tuning at 000 on
the inductor; 12m, 15m, 20m are at 003; 30m is at 013. Looks like,
then, 000 is minimum inductance.

Thanks to all...

Bob
k5qwg

4471. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 07:16:35 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <hUCyavFT3vT$EA5E@ifwtech.co.uk>
Source record: 109321

David or Jo Anne Ryeburn wrote:
>
>David, ex-W8EZE, willing to part with some of my pension money for a
>copy of Chipman if you know where one can be found (Powell's doesn't
>have any copies)
>
When looking for a copy yesterday, it seemed incredible that none of the major US dealers had even one for sale.

However, copies might also have been catalogued under "Schaum" as the author, the book being one of the Schaum's Outline series.

I only discovered this possibility when it was too late to do anything about it, so it may be worth a second look at the US dealers.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4472. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 09:05:09 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308290105.7507b4c5@posting.google.com>
Source record: 109416

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bim58b$f2s$1@hercules.btinternet.com>...
> "Dr. Slick" wrote
> > What about the ARRL?
> ================================
>
> Dear Slick, you must be new round this neck of the
> woods.
>
> Don't you realise the ARRL bibles are written by the
> same sort of people who haggle with you on this
> newsgroup?

Well, yeah, the "A" stands for amateur, right?

But it seems the hams don't even trust one another, which
really, as we have shown here, can lead to new insights.

Mistrust is actually good science.

Slick

4473. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 09:11:38 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308290111.55191194@posting.google.com>
Source record: 109417

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308282216.62b6ad1d@posting.google.com>...
> radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308281329.3504f631@posting.google.com>...
> > k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308281051.150ecc3f@posting.google.com>...
> > >
> > > Garvin, it's a book, not a paper. Your bookstore can probably help
> > > you with it. Besser, at least, apparently came to understand the
> > > error of his ways on this point, and Besser Associates is now
> > > presenting the correct formula in their classes, per the email I
> > > posted from them. I haven't checked with Pozar or Kurokawa, but
> > > strongly suspect you are taking their works out of context and
> > > misinterpreting them.
> > >
> > > Cheers,
> > > Tom
> >
> >
> > You are full of sh**. You never emailed Besser, and they are
> > teaching it correctly.
>
> So why don't you email Rex Frobenius, rfrobenius@besserassociates.com,
> or call him at 650-949-3300, and ask him if he remembers the email he
> got from me through Besser's web site last Thursday, 21 Aug.? And
> while you're at it, ask him what they are _now_ teaching. By posting
> stuff like the above, you're only degrading yourself. Folk here who
> have known me for several years know full well that I'd check out
> sources like that, and would not lie about it or fabricate a reply
> such as I posted. You might consider doing yourself a favor and
> growing up a bit, but in the mean time, be aware that you're providing
> me with a source of humor, at your expense.
>
> Cheers,
> Tom

So many people work at Besser Associates, this REx guy is some nobody.

They changed the course just from one email from YOU? LOL!

Humor goes both ways...i thought you said i wasn't worth responding to?

Slick

4474. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 09:14:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308290114.70cb244a@posting.google.com>
Source record: 109418

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<RbacnaKiBph8KNOiXTWJiw@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308281340.602cffd9@posting.google.com...
> > What exactly do you mean by Zr at point z=0? i don't fully
> > understand the page you sent, and neither do you obviously.
> >
>
> Lower case z is distance, with the load at z=0
>
> > If the power RC is the square of the MAGNITUDE of the voltage
> > RC, then a voltage RC >1 will lead to a power RC >1.
>
> He squares it to get the magnitude of the vector. There is still a phase
> angle
> >
> > How do you get more reflected power than incident power into a
> > passive network, praytell??
>
>
> You don't. at gamma =2.41, the phase angle is about 65 degrees, and the real
> part of gamma =1.0
>

What??!? if gamma, or rho, is greater than one, the reflected
power is definitely greater than the incident!

>
> Now try this: using the conjugate formula, calculate gamma for the case
> where the line is terminated in a short circuit, and tell us how that meets
> the boundary condition.
>
> Tam/WB2TT

Now try this: understand the page you sent me before you attempt
to discuss it with others!

Slick

4475. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 10:49:17 UTC
From: kd1@sympatico.ca
Message-ID: <3F4F2FAD.C2F94F77@sympatico.ca>
Source record: 109319

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > So what happens to these two pulses? They bounce off of each other
> > and return whence they came.
>
> This has been disproved many, many times. Do a web search for
> "superposition" and learn how those waves flow unaffected right
> through each other.

So are you saying that like charge does not repel?

...Keith

4476. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 11:32:22 UTC
From: kd1@sympatico.ca
Message-ID: <3F4F39C6.5B0E9ADD@sympatico.ca>
Source record: 109320

Do I have this right?

Dr Slick examined the generally accepted formula for rho
and learned that its magnitude can be greater than one.

This appears to imply that reflected power is greater
than incident; something that would violate various
conservation of energy laws.

Dr Slick has therefore rejected the generally accepted
formula and produced one which does not result in
more power being reflected than is incident, thus
satisfying various conservation of energy laws.

Many people took issue with this redefinition of rho
and attempted to show why the generally accepted formula
is correct.

But that does not address the issue with the generally
accepted formula; how can reflected power be greater
than incident?

A clear explanation of why rho greater than one
does not violate conservation of energy would seem
to remove Dr Slick's objection to the generally
accepted formula and then everyone could agree
on the formula.

I doubt that any proof of the correctness of the generally
accepted formula will convince Dr Slick until it is
shown why it does not violate conservation of energy.

...Keith

4477. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 12:08:56 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <Y1GdnRy0J5nG39KiU-KYvw@crocker.com>
Source record: 109322

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f4eb6b4_8@corp.newsgroups.com...
> David Robbins wrote:
> > these discussions always seem to end up in this same quagmire, one group
> > trying to solve everything with wave equations, sinusoidal steady
states,
> > transmission line transformations, and the other holding on to the
lumped
> > models and trying to make them fit the wrong problem domain.
>
> Plus a third group of particle physicists saying waves don't exist. :-)
>

what is really fun is watching those guys try to explain reflections with
photons getting absorbed and reemitted.

4478. Re: Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 13:24:36 UTC
From: elmalo@priest.com
Message-ID: <2e000ad4.0308290524.463d7abb@posting.google.com>
Source record: 109323
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

Your tin can will work much better if you add a piece of tissue a coil of wire and a magnet. I don't know why no one ever mentions that when talking about the finer points of tin can technology.

Well I guess a passive repeater was exactly what I was thinking of and it sounds like it works about as well as one would expect. Is there such a thing as an active repeater? Is there some way that I can amplify all of those signals. Can I broadcast all frequencies all the time?

Also, I'm still interested in grounding. I've been noticing the effects of grounding more and more lately. I just realized that my house isn't really grounded (as far as I can tell anyway). I've got PVC plumbing and the electric box is just wired neutral to common. Ever since I put a ball on my truck and wired up the trailer light connecter I've gone from great reception on the radio to average or poor. I think the trailer ground wire is acting like a maverick antenna. We got a new forklift that has a fiber strap that drags along the floor. I think the wheels are polyethelene or polypropoline or something and without the strap the forklift can generate enough static electricity to knock you on your ass. I lived in Okinawa when I was a kid and a lot of the cars there had a rubber strap with a little reflector that drug along the ground. The explanation at the time was that the Japanese liked lights. I never did understand but could it be to ground the vehicle and get better radio reception? Should I drag a chain behind my truck for better reception? Also, the radio at work; how should I set the antenna up. It's just two pieces of wire tucked up into the ceiling tile. There is a copper compressed air line running nearby that is not grounded directly (It is hung from the structual steel but there is no direct copper to ground). I've noticed that sometimes reception is a lot better if one or both ends of the wire are touching this copper line. Is the antenna being grounded or is it acquiring capacitance? WHat is the proper way to ground it. Do you ever ground an antenna or do you just ground the receiver?

Well that's probably too many questions already. I'm posting via google so i have to wait 3 to 6 hours to see it.

Thanks,
El Malo

and not that anyone is going to tell me but what is 73?

4479. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 13:55:57 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkumqd9ff3t465@corp.supernews.com>
Source record: 109324

Reg Edwards wrote:
>
> Given a line's primary characteristics, R,L,C,G,
> length, or it's secondary characteristics Zo, dB, phase
> angle, plus the line's terminatiing impedance it is
> possible to calculate, by classical methods, all other
> quantities of engineering interest - WITHOUT ANY
> REFERENCE TO REFLECTION COEFFICIENT OR SWR which are
> mere man-made notions supposed to assist understanding
> of what goes on in the real world but, as exchanges on
> this newsgroup show, are just a pair of bloody useless
> nuisances.

Nevertheless, the outer circle of the Smith chart
is *always*
the locus of zero positive resistance and infinite
SWR, and a rho vector cannot terminate on, or
cross over, this circle when a load R>0 is
present, regardless of the rest of the circuit,
including any possible combination of resistances
and reactances and complex Z0.

One can argue "ignore rho=1 and just jump over
it". This cannot be done in good mathematics.

Dismissing rho and SWR as "contrived nuisances" is
a convenient way to get rid of this problem, but
it does not "wash". Rho and SWR are fundamental
properties of transmission lines that do not go
away, and a non-zero R precludes rho=1.0.

Any attempt to circumvent (bypass) these small
inconveniences is doomed to failure, regardless of
the analytic geometry considerations.

Bill W0IYH

4480. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 14:07:27 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f5eaa$1_2@127.0.0.1>
Source record: 109325

kd1@sympatico.ca wrote:
> There is certainly no power at the zero crossings.

There is no NET power at the zero crossings. There exists
equal amounts of power flowing in opposite directions as
represented by the forward Poynting vector and the reflected
Poynting vector. Those two power flow vectors simply cancel
at the NET power equal zero point.
--
73, Cecil, W5DXP

4481. Re: Ground system for a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 14:14:38 UTC
From: "David J. Windisch" <davidw@copper.net>
Message-ID: <3f4e0e04_3@newsfeed>
Source record: 109326

Hi, Yuri:
Forgot to say that the soil surface is uneven enough that even hairpinning the radials down wasn't as good as waiting until they were sufficiently buried by grass cuttings so as not to be snagged by blades.

On the flags and pennants, I've read the stuff on various websites. The stumbling-block for me is that nobody around here (Cincinnati) has any experience, good or bad, or they ain't talkin', and I gather that these devices are really site-sensitive wrt soil conductivity.

Any insights?

TIA & kind regards,
Dave, N3HE
"Yuri Blanarovich" <k3bu@aol.comnoSaddam> wrote in message
news:20030828174345.21934.00000100@mb-m04.aol.com...
> >
> >Man!!!! are verticals ever susceptible to all the neighborhood noise I
> >simply don't hear on my dipoles in trees! Oh, well, xmit on the
verticals
> >and receive on the horizontals. Or what?
>
> Verticals are low angle beasts and "look" low and "see" all the man made
> wundernoise. Horinontals look up the sky, where not much man mades.
> If you need to listen on low bands for DX, the best thing is to use Flag
or
> Pennat RX antennas, they give some directivity and discrimination against
noise
SNIP

4482. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 14:22:27 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkuobhbreau1f4@corp.supernews.com>
Source record: 109327

William E. Sabin wrote:

> Reg Edwards wrote:
>
>>
>> Given a line's primary characteristics, R,L,C,G,
>> length, or it's secondary characteristics Zo, dB, phase
>> angle, plus the line's terminatiing impedance it is
>> possible to calculate, by classical methods, all other
>> quantities of engineering interest - WITHOUT ANY
>> REFERENCE TO REFLECTION COEFFICIENT OR SWR which are
>> mere man-made notions supposed to assist understanding
>> of what goes on in the real world but, as exchanges on
>> this newsgroup show, are just a pair of bloody useless
>> nuisances.
>
>
> Nevertheless, the outer circle of the Smith chart is *always*
> the locus of zero positive resistance and infinite SWR, and a rho vector
> cannot terminate on, or cross over, this circle when a load R>0 is
> present, regardless of the rest of the circuit, including any possible
> combination of resistances and reactances and complex Z0.
>
> One can argue "ignore rho=1 and just jump over it". This cannot be done
> in good mathematics.
>
> Dismissing rho and SWR as "contrived nuisances" is a convenient way to
> get rid of this problem, but it does not "wash". Rho and SWR are
> fundamental properties of transmission lines that do not go away, and a
> non-zero R precludes rho=1.0.
>
> Any attempt to circumvent (bypass) these small inconveniences is doomed
> to failure, regardless of the analytic geometry considerations.
>
> Bill W0IYH
>

Power wave theory avoids the Smith chart, since
there are no transmission lines. Scattering
matrices are used instead. Nevertheless, rho is
still an important parameter, but it does not
involve distance separation between generator and
load as a parameter.

Bill W0IYH

4483. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 14:33:28 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <-76cnZ1OFrSg-dKiXTWJkA@comcast.com>
Source record: 109328
Body handling: HTML body converted to readable text

Why didn't you do the gamma for a shorted line using your formula? I think you settled on (Zl - Z0*)/(Zl + Zo). For Zl = 0 this comes to -Z0*/Z0, which, for Zo having phase angle b equates to -1 at angle(-2b).

This is in more detail of what ACF do:

1. Normalize the RC to (Zn -1)/(Zn +1)
2. Let's say we agree that for biggest magnitude, this has to be in the left hand plane.
3. Draw a vector for Zn = a at -135 deg
4. Draw vectors for Zn - 1 and Zn +1. Note that these 3 vectors have the same y coordinate.
5. You now can draw two triangles with the corners at 0, Zn, and Zn -1 for one, and 0, Zn, and Zn+1 for the other.
6. Solve for Zn+/-1 in terms of "a"
7. By plane geometry the magnitude of, of Zn -1=
SQRT(1 + a^2 + aSQRT(2))
8. The magnitude of Zn +1 is
SQRT(1 + a^2 - aSQRT(2))
9. Square both sides of the equation, and gamma^2=
(1 + a^2 + aSQRT(2))/(1 + a^2 - aSQRT(2))
10 This equates to 1 + (2SQRT(2))/((a + 1/a) - SQRT(2))
11 |Gamma| max occurs when (a + 1/a) is a minimum, which is 2 at a=1.
12|Gamma| max is 1 + SQRT(2)

They anticipate people being concerned about |Gamma| > 1 and later come up with a formula for time average power. I don't know that looking at it is going to give anybody any insight, but for this is what they end up with (I am typing CM for Gamma):

= (1/2)Go|V+|^2e**(-2az)[1 - |CM|^2 +2(Bo/Go)Im(CM)]

Remember, z is distance from the load.

Tam/WB2TT

"Dr. Slick" wrote in message
news:1d15af91.0308290114.70cb244a@posting.google.com...
> "Tarmo Tammaru" wrote in message
news:...
> > "Dr. Slick" wrote in message
> > news:1d15af91.0308281340.602cffd9@posting.google.com...
> > > What exactly do you mean by Zr at point z=0? i don't fully
> > > understand the page you sent, and neither do you obviously.
> > >

> >
> > Lower case z is distance, with the load at z=0
> >
> > > If the power RC is the square of the MAGNITUDE of the voltage
> > > RC, then a voltage RC >1 will lead to a power RC >1.
> >
> > He squares it to get the magnitude of the vector. There is still a phase
> > angle
> > >
> > > How do you get more reflected power than incident power into a
> > > passive network, praytell??
> >
> >
> > You don't. at gamma =2.41, the phase angle is about 65 degrees, and the
real
> > part of gamma =1.0
> >
>
> What??!? if gamma, or rho, is greater than one, the reflected
> power is definitely greater than the incident!
>
>
>
> >
> > Now try this: using the conjugate formula, calculate gamma for the case
> > where the line is terminated in a short circuit, and tell us how that
meets
> > the boundary condition.
> >
> > Tam/WB2TT
>
>
> Now try this: understand the page you sent me before you attempt
> to discuss it with others!
>
>
> Slick

4484. Re: QST & Antenna Gain

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 14:43:21 UTC
From: Bob Miller <bxmiller@texas.netNOSPAM>
Message-ID: <lipukv86leipe46eib78lct3fmqumkccnh@4ax.com>
Source record: 109405

On Fri, 29 Aug 2003 01:30:03 GMT, "Dan/W4NTI" <w4nti@get rid of this
mindspring.com> wrote:

>Only the ones that have submitted the proper information as required by the
>ARRL. What that is I am not sure. But I seen a comment on that in QST
>recently.

The comments were in the "The doctor is IN" column in the Sept. issue.

Bob
k5qwg

>
>Dan/W4NTI
>
>"Al Lorona" <al_lorona@agilent.com> wrote in message
>news:3F4EA8A6.342FCCF9@agilent.com...
>>
>> Has anybody noticed that QST is printing antenna gain numbers again (in
>> advertisements, at least)?
>>
>>
>> Al W6LX
>

4485. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 14:54:53 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f69d3_2@127.0.0.1>
Source record: 109329

kd1@sympatico.ca wrote:
> But power can only be computed using the resultant voltage and current
> (or, if you prefer, NET voltage and current).

That's true for two batteries. That's not true for transmission lines where Z0 forces the ratio of the traveling waves to be V/I=Z0. If you could use circuit math on transmission lines, there would be no need for transmission line math, Smith Charts, etc. You are allowing your shortcut to try to dictate reality. That won't work. Assume a constant V/I ratio is forced on each battery in your circuit and see what you get.

> Let me make it simpler then: the lamp cord from the wall to the table
> lamp; lamp off and lamp on. Most lamp cord looks like twin-lead; some
> have said it is approximately 100 Ohms but for the purposes of
> discussion feel free to assume any convenient Z0 for the cord.

I don't think you understand the problem. That lamp cord is about 0.0000005 wavelength at 60 Hz. Any reflected wave effects are completely negligible. It's like expecting reflections due to resistor leads at HF RF. They are theoretically there but usually too small to measure.

> And if it is not an RF transmission line?
> If it is a DC circuit? Say your phone line when on hook?
> If it is a lamp cord?

The transmission line has to be a non-negligible percentage of a wavelength for one to have to switch from circuit math to transmission line math. What's the wavelength of DC? What's the wavelength of voice audio? What is the wavelength of 60 Hz?

If the phone line is an appreciable percentage of a wavelength, there will be reflections (echoes) as anyone doing a transcontinental phone call can attest. Echo cancellation is big business with the telephone companies. Your theory would make telephone line echoes impossible for long unterminated lines. It is known that unterminated telephone lines result in the largest magnitude of echoes.

It just occurred to me that you can revolutionize the telephone industry if you are right. You could patent your idea of no reflected energy on a long unterminated telephone line and sell it to the telephone companies for millions of dollars. Just have every intercontinental telephone line unterminated by using high impedance receivers on each end. Since no reflected energy could cross the voltage minimum point, echoes would be eliminated without the expensive echo cancellation equipment.

> Do we really need directional wattmeters to understand what is
> happening?

No, one can learn the principles of EM waves and transmission lines
and alleviate one's ignorance. I am capable of estimating the
forward power, reflected power, and SWR on my 450 ohm window line
without actually measuring it.

> Please, replace wall outlet with lamp cord to table lamp.

Are you capable of measuring the 0.0001 degrees of phase shift
between the forward wave and reflected wave? Your measuring
instrument needs to be about plus or minus 0.0000001 degrees
to get an accurate measurement.
--
73, Cecil, W5DXP

4486. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 15:25:06 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f70de$1_2@127.0.0.1>
Source record: 109330

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>So how do you get the reflections in a single source system to be
>>incoherent?
>
> Two reflective interfaces with an aperiodic distance between.

That won't do it unless the distance between them is somehow
dynamically changing. For fixed distances, steady-state signals
will be coherent.

> The example of the challenge serves to illuminate (pun intended) the
> logical shortfall of those here who insist that a Transmitter exhibits
> no Z, or that it is unknowable (to them, in other words), or that it
> reflects all power that returns to it (to bolster their equally absurd
> notion that the Transmitter does not absorb that power).

This is a convenient rule-of-thumb, nothing more. It solves the
problem of something being unknowable. A source obeys the rules
of the wave reflection model. Unfortunately, we don't usually
know the exact value of source impedance seen by the reflected
waves. Thus, the rule-of-thumb.

> Engineers and scientists simply converse with the
> tacit agreement that the source matches the line when going into the
> discussion of SWR (and why Chapman plainly says this up front on the
> page quoted earlier). This is so commonplace that literalists who
> lack the background (and skim read) fall into a trap of asserting some
> pretty absurd things. It follows that for these same literalists, any
> evidence to the contrary is anathema, heresy, or insanity - people
> start wanting to "help" you :-P

I agree with Chipman on that.

> Now, be advised that when I say "accurately" that this is of concern
> only to those who care for accuracy.

That's the part I don't understand. You can assume a whole range of
impedances for the source while the forward power and reflected power
remain the same. Is "accuracy" somehow involved with efficiency?
--
73, Cecil, W5DXP

4487. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 15:27:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f7158$1_2@127.0.0.1>
Source record: 109331

Richard Clark wrote:
> You have expended far more time climbing Everest in search of the
> guru, than simply doing the challenge at the bench.

I don't understand the challenge. Until I do, I would be wasting
my time on the bench. I'm sure I'm not the only one who doesn't
understand what you are trying to say.
--
73, Cecil, W5DXP

4488. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 15:41:16 UTC
From: k7itm@aol.com
Message-ID: <3200347.0308290741.3ac912d@posting.google.com>
Source record: 109332

radio913@aol.com (Dr. Slick) wrote in message
news:<1d15af91.0308290111.55191194@posting.google.com>...

> So many people work at Besser Associates, this REx guy is some nobody.
>
> They changed the course just from one email from YOU? LOL!

Ah, Garvin, thank you for confirming once again that you don't
actually read what others post, even though you do respond abrasively,
childishly. Rex is their Engineering Director. He didn't say they
changed the course because of me, he said he couldn't find the formula
with conjugate in it in their "more popular course which covers linear
RF circuits," and they are now (and have for some time been) teaching
it with the unconjugated formula. He also said their course is based
on Gonzalez (see 1 below), a book that's been recommended to you by
some other posters. That was all in my posting of his reply to my
query, to which you responded, so presumably you actually read it.

I suppose in your mental state you believe that anyone who doesn't
agree with you is a nobody. Has that reduced you to posting
misrepresentations of what others have said, as you have here? Has
that reduced you to calling honest people liars? I have a good friend
who is schizophrenic, and he is rather that way. He lives in a
fantasy world which his mind has created for him, and to him it's
reality. It has taken quite a toll on him in other ways. It's very
sad to see. It's a disease I wouldn't wish on anybody. I hope you
are not suffering from the same disease, though I honestly do see
strong similarities in the way you respond to people.

The lone argument you have given (for a |Vr/Vf| not greater than
unity) is based only on your intuition, and just as intuition fails us
for some other physical phenomena, it does in this case. Those who
have gone through a careful development of the model we use understand
all this. Why are you even worried about it? It's pretty clear to me
you have no real interest in using or understanding it.

Cheers,
Tom

(1) From Rex's email: "This is in agreement with Guillermo
Gonzalez's text, "Microwave Transistor Amplifiers," which is one of
the references used in writing
the course."

4489. Re: Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 15:49:16 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F4F75FC.3BD32A90@cwis.net>
Source record: 109333
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

El Malo,
The 'static' strap draggin on the ground is a terrible
idea. In most cases, it generates more static than it will
ever 'cure'. It's also dangerous, just like the fork lift.
The DOT prohibits static straps on commercial vehicles that
carry flamable/explosive materials (fuel trucks) because they
act as part of a "VanDegraff"(sp) generator. I'm sure a nice
fat spark is exactly what you want to see when connecting a
fuel line to a tank. (Also why fuel hoses at gas pumps are
grounded through the nozzle. And why fuel trucks at an air-
port always connect a ground line to the plane before fueling.)
'Doc

4490. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 15:50:11 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f76c2_2@127.0.0.1>
Source record: 109334

David Robbins wrote:

> "W5DXP" <Cecil.A.Moore@ieee.org> wrote:
>>Plus a third group of particle physicists saying waves don't exist. :-)
>>
> what is really fun is watching those guys try to explain reflections with
> photons getting absorbed and reemitted.

Yep, I notice I got no answer (so far) to my question about reflected
photons. And, apparently, when one electron gets too close to another,
they each emit virtual photons as a warning not to come any closer.
--
73, Cecil, W5DXP

4491. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 15:58:14 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f78a1$1_2@127.0.0.1>
Source record: 109335

kd1@sympatico.ca wrote:
> But that does not address the issue with the generally
> accepted formula; how can reflected power be greater
> than incident?

The transmission coefficient equals (2*Z2)/(Z2-Z1). If
Z2 is large compared to Z1, the transmitted voltage can
be large compared to the incident voltage.
--
73, Cecil, W5DXP

4492. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 16:10:23 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f7b7b$1_2@127.0.0.1>
Source record: 109336

kd1@sympatico.ca wrote:

> W5DXP wrote:
>
>>kd1@sympatico.ca wrote:
>>
>>>So what happens to these two pulses? They bounce off of each other
>>>and return whence they came.
>>
>>This has been disproved many, many times. Do a web search for
>>"superposition" and learn how those waves flow unaffected right
>>through each other.
>
> So are you saying that like charge does not repel?

No, I'm not saying that at all. In fact, there may not be any charges crossing the NET voltage = zero point and there doesn't have to be for energy to be flowing in both directions. Two waves flowing in opposite directions in a constant Z0 environment superpose but have no effect on each other. You are continuing to be confused by the NET values. Did you take a look at that Java-driven web page that I posted a couple of days ago. If so, I don't see how you could still be confused.

As an analogy, consider two equal magnitude Tsunami waves flowing in opposite directions in the ocean. According to you, these waves will reflect off of each other. But it is known that those two waves will simply flow through each other and continue their original paths unabated. A single carrier water molecule may only move vertically and not horizontally at all during this process.

You continue to confuse NET charge carriers with component energy.
--
73, Cecil, W5DXP

4493. Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 16:17:10 UTC
From: Charles Wittnam <wittnam@bresnan.net>
Message-ID: <a0L3b.296397$Ho3.42093@sccrnsc03>
Source record: 109337

I have an off center fed dipole that was made by Antennas and More. I am very aware of the hype surrounding the overblown claims for such antennas and their inherent problems. (radiating feed lines, etc.) What I was not ware of is the problems with getting basic information about the antenna from the "manufacturer." What I have is a 132 foot off center fed dipole they refer to as the Windom HSQ. What I am trying to decipher is what type of balun they are using. In their literature they refer to a 1 to 1. This can not be. From the location of their balun which is about 48 feet from one end, I am guessing that they are trying for the illusive 200 ohm impedance point for 80 meters and that the balun may be a 2:1. This company does NOT return any calls. I was trying to figure if I could cut this antenna down to a 40 meter version, which might be possible with a 2:1 balun, but not a 4:1. Anyone have any experience with this type of antenna?
Thanks.

Charlie KD7HU

4494. Coax cable interferance?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 16:29:19 UTC
From: Michalkun <buranko2000@yahoo.com>
Message-ID: <Xns93E66AA944236michalkunyahoocom@128.233.192.251>
Source record: 109338

I was wondering if passing a coaxial cable used for antenna very close to electronics like TV, stereo, etc. will cause some intereferance that could penetrate inside? I need to run the cable to balcony for my antenna and electronics are in my way.

4495. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 16:29:56 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f8010$1_2@127.0.0.1>
Source record: 109340

Charles Wittnam wrote:

> I have an off center fed dipole that was made by Antennas and More. I am
> very aware of the hype surrounding the overblown claims for such antennas
> and their inherent problems. (radiating feed lines, etc.) What I was not
> ware of is the problems with getting basic information about the antenna
> from the "manufacturer." What I have is a 132 foot off center fed dipole
> they refer to as the Windom HSQ. What I am trying to decipher is what
> type of balun they are using. In their literature they refer to a 1 to 1.
> This can not be. From the location of their balun which is about 48 feet
> from one end, I am guessing that they are trying for the illusive 200 ohm
> impedance point for 80 meters and that the balun may be a 2:1. This
> company does NOT return any calls. I was trying to figure if I could cut
> this antenna down to a 40 meter version, which might be possible with a 2:1
> balun, but not a 4:1. Anyone have any experience with this type of
> antenna?

The balun is probably a 4:1 and the antenna should work pretty well on
40m with an antenna tuner without any cutting. Borrow an MFJ-259B and
see where it is resonant.
--
73, Cecil, W5DXP

4496. Re: QST & Antenna Gain

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 16:31:09 UTC
From: Al Lorona <al_lorona@agilent.com>
Message-ID: <3F4F7FCD.69F00C14@agilent.com>
Source record: 109339

Dan Richardson wrote:

> >
> Yes, that policy was updated in 1998.

> 73
> Danny, K6MHE

Wow, that's over five years ago, yet I only first noticed gain numbers
in an ad earlier this year. Thanks, Danny.

Al W6LX

4497. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 16:43:00 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkv0j0spmoomb3@corp.supernews.com>
Source record: 109341

William E. Sabin wrote:
> William E. Sabin wrote:
>
>> Reg Edwards wrote:
>>
>>>
>>> Given a line's primary characteristics, R,L,C,G,
>>> length, or it's secondary characteristics Zo, dB, phase
>>> angle, plus the line's terminatiing impedance it is
>>> possible to calculate, by classical methods, all other
>>> quantities of engineering interest - WITHOUT ANY
>>> REFERENCE TO REFLECTION COEFFICIENT OR SWR which are
>>> mere man-made notions supposed to assist understanding
>>> of what goes on in the real world but, as exchanges on
>>> this newsgroup show, are just a pair of bloody useless
>>> nuisances.
>>
>>
>>
>> Nevertheless, the outer circle of the Smith chart is *always*
>> the locus of zero positive resistance and infinite SWR, and a rho
>> vector cannot terminate on, or cross over, this circle when a load R>0
>> is present, regardless of the rest of the circuit, including any
>> possible combination of resistances and reactances and complex Z0.
>>
>> One can argue "ignore rho=1 and just jump over it". This cannot be
>> done in good mathematics.
>>
>> Dismissing rho and SWR as "contrived nuisances" is a convenient way to
>> get rid of this problem, but it does not "wash". Rho and SWR are
>> fundamental properties of transmission lines that do not go away, and
>> a non-zero R precludes rho=1.0.
>>
>> Any attempt to circumvent (bypass) these small inconveniences is
>> doomed to failure, regardless of the analytic geometry considerations.
>>
>> Bill W0IYH
>>
>
> Power wave theory avoids the Smith chart, since there are no
> transmission lines. Scattering matrices are used instead. Nevertheless,
> rho is still an important parameter, but it does not involve distance
> separation between generator and load as a parameter.
>

> Bill W0IYH
>

I am not satisfied with this post. I will try to
improve it a little later.

Bill W0IYH

4498. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 17:19:14 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4F8B12.DF8CF8B3@uci.edu>
Source record: 109342

I get it. The challenge is to figure out what you're talking about!!

What do I win if I can do it?

;-) AC6XG

Richard Clark wrote:
>
> On Thu, 28 Aug 2003 21:01:54 -0500, W5DXP <Cecil.A.Moore@ieee.org>
> wrote:
>
> >Richard Clark wrote:
> >> To put it ironically, the challenge I offer is deliberately incoherent
> >> to give that math a deliberate solution that is other than the result
> >> of simple addition or subtraction.
> >
> >So how do you get the reflections in a single source system to be
> >incoherent?
>
> Hi Cecil,
>
> Two reflective interfaces with an aperiodic distance between.
>
> The cable (or any transmission line) falls in between. So does most
> instrumentation to measure power. All fall prey to this indeterminacy
> (unless, of course, it is made determinant through the specification
> of distance, which it is for the challenge). As I offered, this
> challenge is not my own hodge-podge of boundary conditions, it was
> literally drawn from a standard text many here have - hence the quote
> marks that attend its publication by me. I am not surprised no one
> has caught on, I also pointed out this discussion is covered in the
> parts of Chapman that no one reads. Whatchagonnado?
>
> The example of the challenge serves to illuminate (pun intended) the
> logical shortfall of those here who insist that a Transmitter exhibits
> no Z, or that it is unknowable (to them, in other words), or that it
> reflects all power that returns to it (to bolster their equally absurd
> notion that the Transmitter does not absorb that power). Chapman is
> quite clear to this last piece of fluff science - specifically and to
> the very wording. Engineers and scientists simply converse with the
> tacit agreement that the source matches the line when going into the
> discussion of SWR (and why Chapman plainly says this up front on the
> page quoted earlier). This is so commonplace that literalists who
> lack the background (and skim read) fall into a trap of asserting some
> pretty absurd things. It follows that for these same literalists, any

> evidence to the contrary is anathema, heresy, or insanity - people
> start wanting to "help" you :-P
>
> Ian grasped at the straw that the discussion simply peters out by the
> steady state and wholly disregards the compelling evidence (and
> further elaboration of Chapman to this, but he lacks another voice,
> the same Chapman, to accept it) with a forced mismatch at both ends of
> the line. It is impossible to accurately describe the power delivered
> to the load without knowing all parameters, the most overlooked is
> distances traversed by the power (total phase in the solution for
> interference). I put the challenge up to illustrate where the heat
> goes (the line); and it is well into the steady state, as I am sure no
> one could argue, but could easily gust
> "t'ain't so!"
> At least I saved them from the prospect of strangling on their own
> spit sputtering "shades of conjugation." [Another topic that barely
> goes a sentence without being corrupted with a Z-match
> characteristic.]
>
> Using this example for the challenge forces out the canards that the
> source is adjusting to the load (in fact, the challenge presents no
> such change in the first place) and dB cares not a whit what power is
> applied unless we have suddenly entered a non-linear physics. None
> have gone that far as they have already fallen off the edge earlier.
>
> Now, be advised that when I say "accurately" that this is of concern
> only to those who care for accuracy. Between mild mismatches the
> error is hardly catastrophic, and yet with the argument that the
> Transmitter is wholly reflective, it becomes catastrophic. The lack
> of catastrophe does not reject the math, it rejects the notion of the
> Transmitter being wholly reflective. This discussion in their terms
> merely drives a stake through their zombie theories.
>
> I would add there has been another voice to hear in this matter. The
> same literalist skim readers suffer the same shortfall of perception.
> We both enjoy the zen-cartwheels so excellently exhibited by the drill
> team of naysayers. ;-)
>
> 73's
> Richard Clark, KB7QHC

4499. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 17:45:47 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkv48ng95nqvd1@corp.supernews.com>
Source record: 109343

William E. Sabin wrote:
> William E. Sabin wrote:
>
>> Reg Edwards wrote:
>>
>>>
>>> Given a line's primary characteristics, R,L,C,G,
>>> length, or it's secondary characteristics Zo, dB, phase
>>> angle, plus the line's terminatiing impedance it is
>>> possible to calculate, by classical methods, all other
>>> quantities of engineering interest - WITHOUT ANY
>>> REFERENCE TO REFLECTION COEFFICIENT OR SWR which are
>>> mere man-made notions supposed to assist understanding
>>> of what goes on in the real world but, as exchanges on
>>> this newsgroup show, are just a pair of bloody useless
>>> nuisances.
>>
>>
>>
>> Nevertheless, the outer circle of the Smith chart is *always*
>> the locus of zero positive resistance and infinite SWR, and a rho
>> vector cannot terminate on, or cross over, this circle when a load R>0
>> is present, regardless of the rest of the circuit, including any
>> possible combination of resistances and reactances and complex Z0.
>>
>> One can argue "ignore rho=1 and just jump over it". This cannot be
>> done in good mathematics.
>>
>> Dismissing rho and SWR as "contrived nuisances" is a convenient way to
>> get rid of this problem, but it does not "wash". Rho and SWR are
>> fundamental properties of transmission lines that do not go away, and
>> a non-zero R precludes rho=1.0.
>>
>> Any attempt to circumvent (bypass) these small inconveniences is
>> doomed to failure, regardless of the analytic geometry considerations.
>>
>> Bill W0IYH
>>
>
> Power wave theory avoids the Smith chart, since there are no
> transmission lines. Scattering matrices are used instead. Nevertheless,
> rho is still an important parameter, but it does not involve distance
> separation between generator and load as a parameter.
>

> Bill W0IYH
>

I am not satisfied with this post. I will try to
improve it a little later.

Bill W0IYH

4500. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 17:53:23 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4F9313.5517B47E@uci.edu>
Source record: 109346

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > There is certainly no power at the zero crossings.
>
> There is no NET power at the zero crossings.

I think you mean there's no instantaneous power at the zero crossings.

73, ac6xg

4501. Re: Coax cable interferance?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:09:07 UTC
From: Paul Landregan <plandregan@hotmail.com>
Message-ID: <bio4s2$blkni$1@ID-198833.news.uni-berlin.de>
Source record: 109344

depends on the shielding of the coax.
General rule is there shouldn't be any problem.

"Michalkun" <buranko2000@yahoo.com> wrote in message
news:Xns93E66AA944236michalkunyahoocom@128.233.192.251...
> I was wondering if passing a coaxial cable used for antenna very close to
> electronics like TV, stereo, etc. will cause some intereferance that could
> penetrate inside? I need to run the cable to balcony for my antenna and
> electronics are in my way.

4502. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:09:50 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <t75vkvkfh31gos65gb0da3hs5n94jkvefu@4ax.com>
Source record: 109345

On Fri, 29 Aug 2003 08:25:06 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>> Now, be advised that when I say "accurately" that this is of concern
>> only to those who care for accuracy.
>
>That's the part I don't understand. You can assume a whole range of
>impedances for the source while the forward power and reflected power
>remain the same. Is "accuracy" somehow involved with efficiency?
>--

Hi Cecil,

This is a real (the example of the challenge) issue of the Mismatch
Uncertainty. It is only uncertain insofar as most folks are unaware
of the contribution of error the source presents, and doubly unaware
of the phase distances between the interfaces.

Accuracy is unrelated to efficiency, both valuations exist distinct
from the other. You can be efficient but express it with poor
accuracy or good accuracy, efficiency cares not a whit about your poor
situation to resolve it. You can also be pristine accurate and
horribly inefficient, here again, accuracy is not a function of
efficiency, accuracy cares not a whit about your waste.

As for your conjecture
>You can assume a whole range of
>impedances for the source while the forward power and reflected power
>remain the same.
I assume nothing, but I can portray the range through the same
challenge's example. It merely involves moving the SWR measurement.
I have already demonstrated that.

73's
Richard Clark, KB7QHC

4503. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:10:46 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <GGM3b.694$Om1.561@newsread2.news.atl.earthlink.net>
Source record: 109347

David:

[snip]
> sorry, not always... another clear generalization from oversimplifying and
> applying the wrong model. there are cases where there is zero reflected
> voltage for a conjugate match.
[snip]

David, my friend as I stated several times, there is only one such case NOT
"cases"
and occurs only when Zo is purely resistive.

In that case the conjugate is non-existent! What's your point?

Wanna proof:

The reflection coefficient is identically zero,

rho = (Z - Zo)/(Z + Zo) = 0

If and only if the numerator of rho is identically zero.

(Z - Zo) = 0

Solving for the unknown Z, this occurs whenever.

Z = Zo

For complex Zo = ro + jxo, conjugate match occurs whenever
Z = ro - jxo and so rho can only be zero when:

ro - jxo = ro + jxo

which only occurs when

-xo = xo

This can only happen if xo = 0, i.e. the reactive part of both Z and Zo
are identically zero.

i.e. -xo = xo if and only if xo = 0

And this only occurs when Zo is real, not when it is complex!

What exactly is your point?

--
Peter K1PO
Indialantic By-the-Sea, FL.

4504. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:14:57 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <rn5vkv0v9jdvamaf44sfflg8sqhj2quccd@4ax.com>
Source record: 109348

On Fri, 29 Aug 2003 10:19:14 -0700, Jim Kelley <jwkelley@uci.edu>
wrote:

>I get it. The challenge is to figure out what you're talking about!!
>
>What do I win if I can do it?
>
>;-) AC6XG
>

Hi Jim,

I take it you don't know what heat loss the cable sustains. This has stumped everyone so far. They don't even grasp the straw of the first solution for a matched source. I imagine that their astrologers have advised them to not guess. (Why? Because a mismatched source might cool the line? ;-)

Would you care to try the challenge as a lesser goal instead of searching for the meaning of life?

73's
Richard Clark, KB7QHC

4505. Re: Coax cable interferance?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:21:05 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkv6cqs4vuu345@corp.supernews.com>
Source record: 109349

You'll only have a problem if you're running a lot of power and the shielding is poor quality, or if there's current on the outside of the coax. Current on the outside can be reduced with a "current" or "choke" balun.

Roy Lewallen, W7EL

Michalkun wrote:
> I was wondering if passing a coaxial cable used for antenna very close to
> electronics like TV, stereo, etc. will cause some intereferance that could
> penetrate inside? I need to run the cable to balcony for my antenna and
> electronics are in my way.

4506. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:27:12 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <a16vkv8n0ofq2lm0871sdr14k51boh6ehd@4ax.com>
Source record: 109350

On Fri, 29 Aug 2003 08:27:09 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> You have expended far more time climbing Everest in search of the
>> guru, than simply doing the challenge at the bench.
>
>I don't understand the challenge. Until I do, I would be wasting
>my time on the bench. I'm sure I'm not the only one who doesn't
>understand what you are trying to say.

Hi Cecil,

Yes, it is terribly cryptic: how much heat is lost in the line?

It requires advanced techniques in measuring power lost over a known stretch of transmission line. This is an art unknown to many here and baffles them in how to proceed when written directions are provided.

Even if they reject those methods and directions, they struggle through massive tomes to come to no conclusion. What's more, the example resides in one of their cherished scriptures that many would swear by and would scream outrage at the suggestion that they might read it.

The irony is delicious.

73's
Richard Clark, KB7QHC

4507. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:27:42 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <yWM3b.717$Om1.257@newsread2.news.atl.earthlink.net>
Source record: 109351

Roy:

[snip]
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vkt1paf9fv7v75@corp.supernews.com...
> Not QED at all. You claimed to have proved that maximum power is
> delivered to a load when a transmission line is terminated such that the
> reflected voltage on the line is zero.
[snip]

No I did not! Never said that, never have. Where did you get that idea?

I said that for a general complex Zo the reflected voltage is generally
NOT zero at maximum power transfer.

To make myself perfectly clear, let me repeat that...

I said that for a general complex Zo the reflected voltage is generally
NOT zero at maximum power transfer.

I said that for a general complex Zo the reflected voltage is generally
NOT zero at maximum power transfer.

I said that for a general complex Zo the reflected voltage is generally
NOT zero at maximum power transfer.

[snip]
> Here, you're agreeing that the
> reflected voltage is zero when the line is terminated in its
> characteristic impedance. So where's the proof that this condition leads
> to maximum power to the load?
>
> Roy Lewallen, W7EL
[snip]

What I was trying to prove was that the reflected voltage is NOT zero
at conjugate match for the case of complex Zo!

I proved that by setting up a transmission line with perfect image [not
conjugate]
matching on both ends [Zo is seen looking in both directions from any point
in
the system] and driven by a generator set up to create the incident wave.

That system has no impedance discontinuities anywhere. The impedance
is Zo all along the line and into the generator looking in either direction.
No impedance discontinuities no reflections, period!

I then calculated the classical reflection coefficient and showed it to be
zero
confirming that rho = 0 when there are no impedance discontinuities and the
classical formula for rho is used, rho = (Z - Zo)/(Z + Zo).

As the last step I changed the termination from Z0 to conj(Zo) i.e. a
conjugate
match, NOT an image match and showed that rho is NOT zero in this case.

QED!

Summarizing...

Image Match: A line of surge impedance Zo terminated in Zo has no impedance
discontinuities and no reflections.

Conjugate Match: A line of surge impedance terminated in conj(Zo) has an
impedance
discontinuity and hence has reflections. [Unless in the one unique case
that Zo is purely real]

BTW...

Aside: From the postings of Dave and yourself along this thread, I get the
impression that
ya'll beleive that lumped systems obey different laws and should should be
modeled
differently than distributed systems. I am surprised by that claim. Surely
you don't mean that!

Surely all electrical systems, lumped or distributed, must obey the laws of
electrodynamics as set
out by Maxwell-Heaviside. Do you know of any cases where they don't?

Regards,

--
Peter K1PO
Indialantic By-the-Sea, FL.

4508. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:39:42 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4f9e7b_2@127.0.0.1>
Source record: 109353

Jim Kelley wrote:

> W5DXP wrote:
>>There is no NET power at the zero crossings.
>
> I think you mean there's no instantaneous power at the zero crossings.

Well, since the NET voltage is always zero at a voltage node when
the forward power and reflected power are equal, the instantaneous
voltage is always zero, i.e. the steady-state voltage is always
zero. If we have equal power flow vectors in opposite directions,
the NET power is zero at all points up and down the line.
--
73, Cecil, W5DXP

4509. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:41:56 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <U7N3b.733$Om1.330@newsread2.news.atl.earthlink.net>
Source record: 109352

David:

[snip]
> i'm sorry, but that just isn't true. make me an equivalent, with a
> distributed line, of a 1v step voltage source in series with a 1ohm
> resistor.
[snip]

A 1volt step voltage in series with a zero length transmission line terminated in a 1 Ohm resistor!

Dave, all electrical systems, lumped and distributed alike, obey the Maxwell-Heaviside equations. They are all the same, not different as you claim!

Prior to Maxwell [mid 1800's] folks believed that lumped and distributed systems might obey different laws, but ever since Maxwell wrote down his celebrated 22 equations, using quaternions, and Oliver Heaviside reduced them to 4 neat little vector differential equations back in the mid 1800's, most everyone, with the apparent exception of yourself, has accepted that lumped and distributed systems obey the same laws!

What exactly is your point?

Do you believe that lumped systems are described by different laws than distributed systems? Are you trying to convince me of that 150 year old discredited idea?

All macro - electrical systems confirm to the same laws of electrodynamics, namely the Maxwell-Heaviside equations.

The only systems where Maxwell-Heaviside fails to predict physical reality is when dealing with the "very" small, i.e. quantum mechanics when one has to do Engineering and make predictions and design one-photon-at-time. In this case you have to use quantum electrodynamics or QED but still all systems, lumped or distributed must obey QED and Maxwell-Heaviside is just a special case or approximation to QED laws in the aggregate when there are lots of photons.

Dave you will have a lot of arguing to do to convince modern electro-technologists that lumped systems obey different laws from distributed systems. Or that the equations of lumped impedance matching are any different from transmission line impedance matching. They are the same! The models

are the same, the mathematics are the same, the experiments
confirm that they are the same.

Exactly what is your point?

--
Peter K1PO
Indialantic By-the-Sea, FL.

4510. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 18:43:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <0i7vkv0lijcn8d1moq4rd6jvueu9cpiotp@4ax.com>
Source record: 109354

On Fri, 29 Aug 2003 08:16:35 +0100, "Ian White, G3SEK"
<G3SEK@ifwtech.co.uk> wrote:

>David or Jo Anne Ryeburn wrote:
>>
>>David, ex-W8EZE, willing to part with some of my pension money for a
>>copy of Chipman if you know where one can be found (Powell's doesn't
>>have any copies)
>>
>When looking for a copy yesterday, it seemed incredible that none of the
>major US dealers had even one for sale.
>

Hi All,

One very reliable source gave me two other sources with multiple
copies to choose from:
http://www.bookfinder.com/search/?ac=sl&st=sl&qi=rzVa7.75,3z4RWaocCAiOPe1CVI_0662460558_2:
268:527

73's
Richard Clark, KB7QHC

4511. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 19:00:10 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f4fa347$1_2@127.0.0.1>
Source record: 109356

Richard Clark wrote:
> Accuracy is unrelated to efficiency, ...

This is what I thought. I just wanted to be sure you were thinking
the same way.

> I assume nothing, but I can portray the range through the same
> challenge's example. It merely involves moving the SWR measurement.
> I have already demonstrated that.

But: "Every time you make a measurement, you make an error." So said
my EE prof almost half a century ago. I assume it's still true. :-)

My goal is to be error-free on paper before I start the experiment.
Consider the following two examples:

1. The source is generating 100 watts and 20 watts of the 50 watts of
incident reflected power is being re-reflected in phase from the source.
The forward power meter reads 120 watts. The reflected power meter reads
50 watts.

The conventional rule-of-thumb has the source generating (100-30)=
70 watts since it is dissipating 30 watts of reflected power.

2. The source is generating 110 watts and 10 watts of the 50 watts of
incident reflected power is being re-reflected in phase from the source.
The forward power meter reads 120 watts. The reflected power meter reads
50 watts.

The conventional rule-of-thumb has the source generating (110-40)=
70 watts since it is dissipating 40 watts of reflected power.

How can you possibly distinguish between the above two identical conditions
caused by different source impedances?
--
73, Cecil, W5DXP

4512. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 19:03:09 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkv8q9iuee1138@corp.supernews.com>
Source record: 109355

Reg Edwards wrote:

> Given a line's primary characteristics, R,L,C,G,
> length, or it's secondary characteristics Zo, dB, phase
> angle, plus the line's terminatiing impedance it is
> possible to calculate, by classical methods, all other
> quantities of engineering interest - WITHOUT ANY
> REFERENCE TO REFLECTION COEFFICIENT OR SWR which are
> mere man-made notions supposed to assist understanding
> of what goes on in the real world but, as exchanges on
> this newsgroup show, are just a pair of bloody useless
> nuisances.

Rho and SWR are usually not (bloody) useless nuisances. In the realm of ordinary applications of low-loss cable, they give very useful information. Under these conditions the Smith chart is a marvelous tool. Also, solutions of the exact complex hyperbolic equations, using the computer and complex Z0, can give information of several kinds that the Smith chart does not do very well.

For a moderately complex Z0 (moderately lossy cable), the conventional formula for rho can have magnitude values a little greater than 1.0. The boundary of the Smith chart represents rho=1.0, but a complex Z0 can push rho a little beyond the circumference. Because SWR is extremely high at the outer circle of the Smith chart, we should avoid that region in our work with the Smith chart.

Within these mild constraints, using the complex value for Z0, the conventional formula for rho is quite satisfactory. Ordinary coax with a matched loss of, say 2 dB (a guesstimate)or less per 100 feet, can use that formula, with very little (or acceptable) error. At the outer circle, where SWR becomes very large, the concept of SWR becomes rather useless anyway. I suggest use SWR on a Smith chart up to about 7.

It is enough to be aware of the problems associated with complex Z0, and to use the

approximate complex Z0 in the formula for rho.
Also, recognize that small errors in electronic measuring instruments become, at some point, important factors in the calculations.

In the case of rather lossy cable, it is best to abandon rho and SWR before they become "bloody useless nuisances", and use the computer for everything.

Bill W0IYH

4513. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 19:11:31 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <e89vkv8ev4enbh7bjcdel4oppefdknuhi2@4ax.com>
Source record: 109357

On Fri, 29 Aug 2003 12:00:10 -0700, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Accuracy is unrelated to efficiency, ...
>
>This is what I thought. I just wanted to be sure you were thinking
>the same way.
>
>> I assume nothing, but I can portray the range through the same
>> challenge's example. It merely involves moving the SWR measurement.
>> I have already demonstrated that.
>
>But: "Every time you make a measurement, you make an error." So said
>my EE prof almost half a century ago. I assume it's still true. :-)
>

Hi Cecil,

Yes.

73's
Richard Clark, KB7QHC

4514. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 19:25:07 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkva4tkcsbgcbe@corp.supernews.com>
Source record: 109358

Peter O. Brackett wrote:
> Roy:
>
> [snip]
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vkt1paf9fv7v75@corp.supernews.com...
>
>>Not QED at all. You claimed to have proved that maximum power is
>>delivered to a load when a transmission line is terminated such that the
>>reflected voltage on the line is zero.
>
> [snip]
>
> No I did not! Never said that, never have. Where did you get that idea?

This is from your posting of August 25:

Roy:

[snip]

>> No one from "Camp B" has given any justification for the assumption that
>> the condition for minimum reflection is the condition for maximum power
>> transfer. We're lacking either a proof, a derivation from known
>> principles, or even a numerical example. I maintain that this assumption
>> is false.

[snip]

I did just that in a separate posting on this thread a couple of days ago.

Then on August 26, I posted:

> . . .

I'll restate something I mentioned before (first incorrectly, then
corrected). Connecting a load to a transmission line which is the
complex conjugate of the transmission line Z0 does *not* guarantee
maximum power delivery from the source, or to the load. The load
impedance which provides maximum load power is the complex conjugate of
the impedance looking back from the load toward the source. That
impedance is the source impedance transformed through the transmission

line between source and load, and it's not generally the same as the line's Z0, or its complex conjugate. When this condition of maximum load power is met, there will almost certainly be voltage and current wave reflections on the line -- there would be none only if the optimum load impedance coincidentally happened to be equal to the line Z0. So the argument that there can be no reflection of the voltage wave under the condition of maximum power transfer is wrong.

You didn't show differently in your analysis, and no one has stepped forward with a contrary proof, derivation from known principles, or numerical example that shows otherwise.

To which you replied, also on August 26:

Yes I did. I guess that you missed that post.

I haven't been able to find this proof in your postings.

>
> I said that for a general complex Zo the reflected voltage is generally
> NOT zero at maximum power transfer.

Well, shoot, I agree with that, as I always have.

>. . .

> BTW...
>
> Aside: From the postings of Dave and yourself along this thread, I get the
> impression that
> ya'll beleive that lumped systems obey different laws and should should be
> modeled
> differently than distributed systems. I am surprised by that claim. Surely
> you don't mean that!

I believe you can build a bad or inappropriate model with lumped or distributed components, and draw invalid conclusions from them. Perhaps you missed my posting a day or two ago where I pointed out that your model using lumped components was clearly not the same as one using a transmission line, by means of the very simple test of observing the current in a load resistor.

And yes, lumped systems should generally be modeled differently than distributed ones.

>
> Surely all electrical systems, lumped or distributed, must obey the laws of
> electrodynamics as set
> out by Maxwell-Heaviside. Do you know of any cases where they don't?

This argument of "you don't agree with my view of how things work, or my inappropriate models, therefore you don't believe in the Laws of Physics" is as tiresome as it is pompous.

Roy Lewallen, W7EL

4515. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 19:28:32 UTC
From: David Robbins <k1ttt@arrl.net>
Message-ID: <f2idnbR_CYL_NNKiXTWJjA@crocker.com>
Source record: 109359

"Peter O. Brackett" <ab4bc@ix.netcom.com> wrote in message
news:U7N3b.733$Om1.330@newsread2.news.atl.earthlink.net...
> David:
>
> [snip]
> > i'm sorry, but that just isn't true. make me an equivalent, with a
> > distributed line, of a 1v step voltage source in series with a 1ohm
> > resistor.
> [snip]
>
> A 1volt step voltage in series with a zero length transmission line
> terminated in a 1 Ohm resistor!
>

sri, you cut off one important thing... your last sentence before my
request...

>
> If you don't like lumped models, then make the internal resistance of the
> Thevenin
> generator out of a distributed line. It will work just the same way.
>

i am asking you to show me a distributed model for the internal resistance
of a thevenin generator that as a lumped model is a 1v step voltage source
in series with a 1 ohm resistor. a zero length transmission line doesn't
exist so the model is still lumped.

4516. Re: BPL industry take on why power lines are not antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 19:39:04 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308291139.63cf562@posting.google.com>
Source record: 109360

k3bu@aol.comnoSaddam (Yuri Blanarovich) wrote in message
news:<20030827212259.22854.00000050@mb-m23.aol.com>...
> >This subject (BPL) will become huge,
>
> Yea, with today's car radios, nobody will be able to listen to AM, no front end
> selectivity. Just drive by power line noise or BC station and it is all over
> the dial.
> I wonder what the noisy power lines, insulators will do to BPL, QRM it hell?
>
> Yuri

Since this noise will be localized would not shielding the
antenna help?
If one insulates the driven element connected to the coax and
then wrap the assembly with foil and ground to the boom
wouldn,t that help those who wish to stay with ham radio ?
Art

4517. Antenna computor modeling analysis

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 20:10:55 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308291210.5fdcc622@posting.google.com>
Source record: 109361

When modeling a particular antenna and reviewing the
current flow on a particular radiator that was
interupted by a gap (small capacitor) it was noticed
that the current values showed a flutter or cyclical
current curves (positive values with cyclical deviation)
before the smoothed out to a normal current curve,starting
at the capacitor gap
Anybody have any idea what this represents as opposed
to an assumption that it was all misprogrammed?
I was thinking that it showed a particular high
resonance (mechanical?) at that particular point
but that is what I want it to represent.
This only appeared when the antenna was relatively
resistive (60 ohms) and 2Kc wide (resonated loop ala filter)
and applying max number of pulses per sectiom.
(professional program that provides high pulse useage)
At the moment I am trying to remove these small waves
by adding resistance to broaden the bandwidth.
Sorry the question is not as high tech as the present
flood of wave reflection, conjugate match postings e.t.c.
but it does provide something that all can voice an
opinion on and rejoin the group, hopefully after a little
bit of thought or a rummage thru a book.
Regards
Art

4518. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 20:11:00 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291211.41ef74d2@posting.google.com>
Source record: 109362
Body handling: HTML body converted to readable text

"Tarmo Tammaru" wrote in message news:<-76cnZ1OFrSg-dKiXTWJkA@comcast.com>...
> Why didn't you do the gamma for a shorted line using your formula? I think
> you settled on (Zl - Z0*)/(Zl + Zo). For Zl = 0 this comes to -Z0*/Z0,
> which, for Zo having phase angle b equates to -1 at angle(-2b).
>

Agreed. This doesn't prove anything, does it?

> This is in more detail of what ACF do:
>
> 1. Normalize the RC to (Zn -1)/(Zn +1)
> 2. Let's say we agree that for biggest magnitude, this has to be in the left
> hand plane.
> 3. Draw a vector for Zn = a at -135 deg
> 4. Draw vectors for Zn - 1 and Zn +1. Note that these 3 vectors have the
> same y coordinate.
> 5. You now can draw two triangles with the corners at 0, Zn, and Zn -1 for
> one, and 0, Zn, and Zn+1 for the other.
> 6. Solve for Zn+/-1 in terms of "a"
> 7. By plane geometry the magnitude of, of Zn -1=
> SQRT(1 + a^2 + aSQRT(2))
> 8. The magnitude of Zn +1 is
> SQRT(1 + a^2 - aSQRT(2))
> 9. Square both sides of the equation, and gamma^2=
> (1 + a^2 + aSQRT(2))/(1 + a^2 - aSQRT(2))
> 10 This equates to 1 + (2SQRT(2))/((a + 1/a) - SQRT(2))
> 11 |Gamma| max occurs when (a + 1/a) is a minimum, which is 2 at a=1.
> 12|Gamma| max is 1 + SQRT(2)
>
> They anticipate people being concerned about |Gamma| > 1 and later come up
> with a formula for time average power. I don't know that looking at it is
> going to give anybody any insight, but for this is what they end up with (I
> am typing CM for Gamma):
>
>
= (1/2)Go|V+|^2e**(-2az)[1 - |CM|^2 +2(Bo/Go)Im(CM)]
>
> Remember, z is distance from the load.
>
> Tam/WB2TT
>

ok, you've done a nice job of copying the text you sent me.

They also mention that the normalized load impedance Zn=Zr/Zo does
NOT have the same angle as Zr because Zo is complex in the general
case.

> "They anticipate people being concerned about |Gamma| > 1 and later come up
> with a formula for time average power."

Really? Could you tell us more about that? Could you email me
more pages, especially the one that has Eq. 5.2b?

Slick

4519. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 20:23:36 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291223.2cd83f0a@posting.google.com>
Source record: 109363

kd1@sympatico.ca wrote in message news:<3F4F39C6.5B0E9ADD@sympatico.ca>...
> Do I have this right?
>
> Dr Slick examined the generally accepted formula for rho
> and learned that its magnitude can be greater than one.
>

When it is incorrectly used. When you use a complex Zo
for a formula that assumes purely real Zo.

http://www.zzmatch.com/lcn.html

> This appears to imply that reflected power is greater
> than incident; something that would violate various
> conservation of energy laws.
>

for a lossless, passive network:

[s11]**2 + [s21]**2 = 1

If the sum of the squares is less than one,
there are losses in the network. Some people
might understand why this cannot be greater than 1.

> Dr Slick has therefore rejected the generally accepted
> formula and produced one which does not result in
> more power being reflected than is incident, thus
> satisfying various conservation of energy laws.
>

I didn't "produce" it or "make it up", the conjugate
equation is in the established literature (Kurokawa, Besser,
and the ARRL). But because Zo is usually assumed to be
purely real, most people know the "normal" equation.

> Many people took issue with this redefinition of rho
> and attempted to show why the generally accepted formula
> is correct.
>

The generally accepted "normal" formula IS correct, as long
as Zo is purely real. No disagreements there!

> But that does not address the issue with the generally
> accepted formula; how can reflected power be greater
> than incident?
>

Only with an ACTIVE network. Never with a passive one.

The "normal" formula concerns passive networks.

> A clear explanation of why rho greater than one
> does not violate conservation of energy would seem
> to remove Dr Slick's objection to the generally
> accepted formula and then everyone could agree
> on the formula.
>
> I doubt that any proof of the correctness of the generally
> accepted formula will convince Dr Slick until it is
> shown why it does not violate conservation of energy.
>
> ...Keith

Incorrect. I am convinced that when you use a complex
Zo with the normal equation, you are using the formula incorrectly.

Therefore, there is no need to show why your answer doesn't
violate conservation of energy if your answer is wrong in the first
place!

Slick

4520. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 20:41:35 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291241.6d6d3e9f@posting.google.com>
Source record: 109364

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vkumqd9ff3t465@corp.supernews.com>...
> Reg Edwards wrote:
> >
> > Given a line's primary characteristics, R,L,C,G,
> > length, or it's secondary characteristics Zo, dB, phase
> > angle, plus the line's terminatiing impedance it is
> > possible to calculate, by classical methods, all other
> > quantities of engineering interest - WITHOUT ANY
> > REFERENCE TO REFLECTION COEFFICIENT OR SWR which are
> > mere man-made notions supposed to assist understanding
> > of what goes on in the real world but, as exchanges on
> > this newsgroup show, are just a pair of bloody useless
> > nuisances.
>
> Nevertheless, the outer circle of the Smith chart
> is *always*
> the locus of zero positive resistance and infinite
> SWR, and a rho vector cannot terminate on, or
> cross over, this circle when a load R>0 is
> present, regardless of the rest of the circuit,
> including any possible combination of resistances
> and reactances and complex Z0.
>

"gasp!" ...saved by a lifesaver of logic while drowning
in the Sea of Ignorance!

Thank you Bill. This is probably why they say that
an oscillator has negative resistance (postitive feedback),
and also why the stability circles have their centers located
outside the unit 1 Radius. Clearly, areas outside the
rho=1 circle on the Smith, are reserved for active networks.

Slick

> One can argue "ignore rho=1 and just jump over
> it". This cannot be done in good mathematics.
>
> Dismissing rho and SWR as "contrived nuisances" is
> a convenient way to get rid of this problem, but
> it does not "wash". Rho and SWR are fundamental
> properties of transmission lines that do not go
> away, and a non-zero R precludes rho=1.0.
>

> Any attempt to circumvent (bypass) these small
> inconveniences is doomed to failure, regardless of
> the analytic geometry considerations.
>
> Bill W0IYH

4521. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 20:46:08 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291246.7f90d3db@posting.google.com>
Source record: 109365

ryeburn@sfu.caz (David or Jo Anne Ryeburn) wrote in message
news:<ryeburn-2808032231020001@bni030qny8kc.bc.hsia.telus.net>...
> I've enjoyed reading this and related threads. Some comments have been
> made about using calculus. Though I spent a significant portion of my
> pre-retirement life attempting to teach that subject to undergraduates, I
> don't believe in using calculus whenever simple geometry and/or algebra
> makes it unnecessary. A proof that avoids calculus can be meaningful for
> those who don't know calculus, or who haven't used it for a while.
>

The the area within the rho=1 circle of the Smith is reserved for
passive networks. Outside rho=1, where the reflection is greater than
one, is reserved for active networks only.

Slick

4522. Re: Reception in a tin can

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 21:07:46 UTC
From: Drink <drink@gnt.net>
Message-ID: <vkvjdtk9ivrhc1@corp.supernews.com>
Source record: 109272
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.digital.misc

Para el Hombre Malo,
I don't think there's any panacea solution to your problem but the passive antenna should help with your cell phone. Just have the inside antenna close to where you'll usually talk and the outside antenna high and in the clear. For your other questions, I'm sorry but I chuckled a little. I couldn't tell if you were serious at first but then figured that you're not a licensed ham radio operator.
Active repeaters: yes, often very expensive, Code of Federal Regulation legal issues and FCC licensure.
"All frequencies all the time": not realistically, I think it's called a transponder used on a communications satellite but on steroids.
Building codes require that your house be grounded. It's grounded unless you built it yourself and forgot to do it:)
Alot of things can affect your radio reception and to pursue all of them for a radio station is to joust windmills. Just make sure your connections are good. I wouldn't drag chains behind your truck because they attract bicycles and electric wheelchairs. Your truck is all the "ground plane" for your antenna. As for a radio at work, just pick up a simple antenna from radio shack if it's AM/FM. They're made for your application so it doesn't get much better or simpler.
You might consider looking up a ham radio club in your local area. They might have licensing classes where could learn about all of these issues and much more. If you're interested, a lot of "Old Men" (respectful term of address between hams) are willing to help you learn and improve radio communication skills. When it's said and done, you've earned your license for free. Give it a try if the idea strikes you.
"73" comes from old radio operator brevity codes that were used to send a common question or statement as short and easy as possible. I believe it meant, "Warmest Regards" or something to that effect since it's understood outside of language barriers. So, that's the way we commonly sign off.

73's y un saludo muy cordial pa' ti y los suyos,
--
o_o_o_o
Best Regards, /| ,[_____],
Jim, WP3JQ |���L --O||||||O-
()_)�()_) �����)_)
EM60qk 30.447439N 086.628959W

4523. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 21:09:43 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <bufvkvo5j2m9fltco7bmf4hces2ir7urv7@4ax.com>
Source record: 109366

On 29 Aug 2003 13:41:35 -0700, radio913@aol.com (Dr. Slick) wrote:

>
> "gasp!" ...saved by a lifesaver of logic while drowning
>in the Sea of Ignorance!
>
> Thank you Bill. This is probably why they say that
>an oscillator has negative resistance (postitive feedback),
>and also why the stability circles have their centers located
>outside the unit 1 Radius. Clearly, areas outside the
>rho=1 circle on the Smith, are reserved for active networks.
>
>
>Slick

Hi OM,

This does not follow logically. Active networks exhibit this behavior and offer a library full of applications. Strained passive networks, as evidenced by other correspondence, also reside in this "forbidden region" but their number are significantly smaller and for good reason.

Those examples were "strained" for the purpose of your education and rarely offer engineering coupes of design. More often they represent the "gotcha's" of technical oversight and unplanned failure modes. As such these side-bars offer insight, but hardly have the horsepower to pull the load.

Both sides of the debate can whip that horse, but it ain't moving another inch for anyone.

As for a horse of a different color, how well tutored are you to handle specifying the loss in a system of two resistors and a hank of line? (Line loss is the characteristic being sought.) No prizes are offered, but you have and excellent prospect of beating the experts to the crossing line.

It's as simple as giving even an incorrect answer! :-)

As the rich and powerful offer, the better part of success is just in showing up.

73's
Richard Clark, KB7QHC

4524. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 21:16:55 UTC
From: Charles Wittnam <wittnam@bresnan.net>
Message-ID: <bpP3b.301834$uu5.64896@sccrnsc04>
Source record: 109367

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f4f8010$1_2@127.0.0.1...
> Charles Wittnam wrote:
>
> > I have an off center fed dipole that was made by Antennas and More. I
am
> > very aware of the hype surrounding the overblown claims for such
antennas
> > and their inherent problems. (radiating feed lines, etc.) What I was
not
> > ware of is the problems with getting basic information about the antenna
> > from the "manufacturer." What I have is a 132 foot off center fed
dipole
> > they refer to as the Windom HSQ. What I am trying to decipher is what
> > type of balun they are using. In their literature they refer to a 1 to
1.
> > This can not be. From the location of their balun which is about 48
feet
> > from one end, I am guessing that they are trying for the illusive 200
ohm
> > impedance point for 80 meters and that the balun may be a 2:1. This
> > company does NOT return any calls. I was trying to figure if I could cut
> > this antenna down to a 40 meter version, which might be possible with a
2:1
> > balun, but not a 4:1. Anyone have any experience with this type of
> > antenna?
>
> The balun is probably a 4:1 and the antenna should work pretty well on
> 40m with an antenna tuner without any cutting. Borrow an MFJ-259B and
> see where it is resonant.
> --
> 73, Cecil, W5DXP
>

4525. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 21:28:24 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <rwSdndV5LPz4WNKiXTWJjQ@comcast.com>
Source record: 109368

Search Amazon.com and www.addall.com for ISBN 0070107475.
They're my favorite book-finding tools.

Tom, N3IJ

"Richard Clark" <kb7qhc@comcast.net> wrote in message
news:0i7vkv0lijcn8d1moq4rd6jvueu9cpiotp@4ax.com...
> On Fri, 29 Aug 2003 08:16:35 +0100, "Ian White, G3SEK"
> <G3SEK@ifwtech.co.uk> wrote:
>
> >David or Jo Anne Ryeburn wrote:
> >>
> >>David, ex-W8EZE, willing to part with some of my pension money for a
> >>copy of Chipman if you know where one can be found (Powell's doesn't
> >>have any copies)
> >>
> >When looking for a copy yesterday, it seemed incredible that none of the
> >major US dealers had even one for sale.
> >
>
> Hi All,
>
> One very reliable source gave me two other sources with multiple
> copies to choose from:
>
http://www.bookfinder.com/search/?ac=sl&st=sl&qi=rzVa7.75,3z4RWaocCAiOPe1CVI
_0662460558_2:268:527
>
> 73's
> Richard Clark, KB7QHC

4526. Re: Info on Cushcraft R3 triband vertical (M321I58DNU 09/06/2003)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 21:29:47 UTC
From: Dave Bushong <dbushong@adelphia.net>
Message-ID: <fBP3b.10850$Nc.6185974@news1.news.adelphia.net>
Source record: 109269

Jim Coffey wrote:

> Does anyone have a info on the Cushcraft R3. I have acquired one from
> a friend who found it at an estate sale.
> Cushcraft has nothing on their web site, only a R5 and R7 which look
> completely different.
>
> I know an insulator is missng on the base but I'm not surewhat else
> might be missing and I have no manual.
>
> Any help would be appreciated.
>
> TNX
>
> Jim Coffey WB4KMK
> jim.coffey@frontiernet.net
>
>

Hi Jim,

You can look at the history of any web site by going to
http://www.archive.org and look back through time to see how their web
page has changed. For example, look at:

http://web.archive.org/web/*/http://cushcraft.com

I looked through the Cushcraft web site content between Mar 29, 1997 and
Jun 02, 2002, and while the site has changed in looks, they really
didn't do much for content until recently. I couldn't find a thing
about the R3 antenna.

But at least you might be able to use this as a reference for other
"ancient" (pre-2000) hardware.

All the best, and 73,
Dave
KZ1O

4527. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 21:37:00 UTC
From: Charles Wittnam <wittnam@bresnan.net>
Message-ID: <0IP3b.299610$YN5.206955@sccrnsc01>
Source record: 109270

I am trying to salvage the situation before going to
war with Antennas and More with my credit card company. They shipped the
wrong antenna to me and have NOT answered numerous calls or emails. I was
looking for a 40 meter OCF dipole and they sent me a 80 meter OCF, which
was not what I ordered because of space limitations.
If I could cut the thing down to use on 40 meters then I can save the
inevitable hassle of dealing with this outfit and going to war with them via
my credit card company.. However, my understanding is that a lot of the
commercial builders of the OCF dipoles use a 2/1 balun for their 40 meter
antennas since they are trying to match a different impedance spot on the
shorter antenna., hence it is not necessarily the case that you can just cut
them down. Any thoughts?

KD7HU

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f4f8010$1_2@127.0.0.1...
> Charles Wittnam wrote:
>
> > I have an off center fed dipole that was made by Antennas and More. I
am
> > very aware of the hype surrounding the overblown claims for such
antennas
> > and their inherent problems. (radiating feed lines, etc.) What I was
not
> > ware of is the problems with getting basic information about the antenna
> > from the "manufacturer." What I have is a 132 foot off center fed
dipole
> > they refer to as the Windom HSQ. What I am trying to decipher is what
> > type of balun they are using. In their literature they refer to a 1 to
1.
> > This can not be. From the location of their balun which is about 48
feet
> > from one end, I am guessing that they are trying for the illusive 200
ohm
> > impedance point for 80 meters and that the balun may be a 2:1. This
> > company does NOT return any calls. I was trying to figure if I could cut
> > this antenna down to a 40 meter version, which might be possible with a
2:1
> > balun, but not a 4:1. Anyone have any experience with this type of
> > antenna?
>
> The balun is probably a 4:1 and the antenna should work pretty well on
> 40m with an antenna tuner without any cutting. Borrow an MFJ-259B and
> see where it is resonant.

> --
> 73, Cecil, W5DXP
>

4528. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 21:46:33 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <acivkvkbsvkcuf65i0n1ahb5kaoab1s28d@4ax.com>
Source record: 109271

On Fri, 29 Aug 2003 17:28:24 -0400, "Tom Coates"
<tecoates@comcast.net> wrote:

>Search Amazon.com and www.addall.com for ISBN 0070107475.
>They're my favorite book-finding tools.
>
>Tom, N3IJ

Hi Tom,

Thanks for the new lead to a book site.

73's
Richard Clark, KB7QHC

4529. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 22:08:57 UTC
From: "William E. Sabin" <sabinw@mwci-news>
Message-ID: <vkvjmolmcpfl3e@corp.supernews.com>
Source record: 109273

Dr. Slick wrote:

>
> The the area within the rho=1 circle of the Smith is reserved for
> passive networks. Outside rho=1, where the reflection is greater than
> one, is reserved for active networks only.

Stable amplifiers also reside inside the Smith chart. When their gain circles overlap into the outside they are "potentially" unstable and need to have networks designed that keep them from becoming unstable, by confining their operating point to the inside. When the gain circles are entirely outside the chart they are definitely unstable. Oscillators are designed to have their gain circles in this manner.

Passive linear bilateral networks do not oscillate. An active negative resistance device or a positive feedback amplifier is needed.

An amplifier consists of three things:

1) A matching network at the input that transforms impedances.

2) An amplifying device such as a transistor that has a forward gain.

3) A matching network at the output.

The matching networks are designed to produce gain and stability.

Bill W0IYH

4530. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 22:19:27 UTC
From: Jim Kelley <jwkelley@uci.edu>
Message-ID: <3F4FD16F.D847B3FB@uci.edu>
Source record: 109274

W5DXP wrote:
>
> Jim Kelley wrote:
>
> > W5DXP wrote:
> >>There is no NET power at the zero crossings.
> >
> > I think you mean there's no instantaneous power at the zero crossings.

> Well, since the NET voltage is always zero at a voltage node when
> the forward power and reflected power are equal, the instantaneous
> voltage is always zero, i.e. the steady-state voltage is always
> zero.

I've never actually seen the voltage at a node in a standing wave pattern referred to as an instantaneous voltage - especially considering that it doesn't vary with time. Instantaneous usually means the solution to a function f(t) at time t (not f(x) and position x.) Nodes and zero crossings aren't necessarily the same thing.

73, Jim AC6XG

4531. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 22:31:34 UTC
From: kd1@sympatico.ca
Message-ID: <3F4FD446.78D04CB8@sympatico.ca>
Source record: 109275

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > But that does not address the issue with the generally
> > accepted formula; how can reflected power be greater
> > than incident?
>
> The transmission coefficient equals (2*Z2)/(Z2-Z1). If
> Z2 is large compared to Z1, the transmitted voltage can
> be large compared to the incident voltage.

Yes indeed. And since this happens when the impedance
increases, energy can be conserved.

But the discussion was about reflected voltage and how using
the generally accepted formula can result in the reflected
voltage exceeding the incident voltage. Converting this
voltage to power would result in a greater reflected power
than incident which would seem to violate conservation of
energy. Perhaps this would be an interesting place for
you to apply your energy analysis?

...Keith

4532. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 22:45:43 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <8plvkv4tqdhja7t1faok0s33curesbe3b4@4ax.com>
Source record: 109276

On Fri, 29 Aug 2003 21:37:00 GMT, "Charles Wittnam"
<wittnam@bresnan.net> wrote:

> I am trying to salvage the situation before going to
>war with Antennas and More with my credit card company. They shipped the
>wrong antenna to me and have NOT answered numerous calls or emails. I was
>looking for a 40 meter OCF dipole and they sent me a 80 meter OCF, which
>was not what I ordered because of space limitations.
>If I could cut the thing down to use on 40 meters then I can save the
>inevitable hassle of dealing with this outfit and going to war with them via
>my credit card company.. However, my understanding is that a lot of the
>commercial builders of the OCF dipoles use a 2/1 balun for their 40 meter
>antennas since they are trying to match a different impedance spot on the
>shorter antenna., hence it is not necessarily the case that you can just cut
>them down. Any thoughts?
>
>
>KD7HU
>
>
Why not just scale the antenna? That's is to say, in your case, reduce
the length of the wires by a factor of ï¿½.

Danny, K6MHE

4533. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 23:32:31 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <joR3b.1002$Om1.146@newsread2.news.atl.earthlink.net>
Source record: 109277

Group:

Another very good and inexpensive reference on waves that might be of interest to this group is:

William C. Elmore and Mark A Heald, "Physics of Waves", first published in 1969, but
most recently published in paperback by Dover Publications, New York, 1985 and
generally available in reprints even today for around US$17.00. A real bargain.
ISBN: 0-486-64926-1 LCCN: 85-10419.

Be aware, since this is a Physics book it is loaded with gratuitous partial differential
equations.

This book is interesting because it covers the *whole* field of waves, not just
electromagnetic waves.

Electromagnetic waves are particularly simple when compared to general wave phenomena,
since em waves are transverse only.

This book covers waves on strings and membranes, waves in and on fluids, waves in compressible
media such as the earth [the seismic wavefield]etc... and so covers many of the "analogies" that
posters to this news group like to draw upon, often drawing false conclusions.

Are ocean waves at the beach *really* analogous to em waves?

This book will explain why not.

The earth supports both transverse and compressive-dillutive waves as well as surface seismic waves. Are compressive-dillutive waves different either qualitatively or quantitatively from electromagnetic transverse waves, this book answers the question.

etc, etc...

Expand your wave horizons beyond mere em waves, if you are deeply interested in waves, this book is more than worth the price at US$17.00. It's available from Amazon.

--
Peter K1PO
Indialantic By-the-Sea, FL

"David or Jo Anne Ryeburn" <ryeburn@sfu.caz> wrote in message
news:ryeburn-2808032231020001@bni030qny8kc.bc.hsia.telus.net...
> I've enjoyed reading this and related threads. Some comments have been
> made about using calculus. Though I spent a significant portion of my
> pre-retirement life attempting to teach that subject to undergraduates, I
> don't believe in using calculus whenever simple geometry and/or algebra
> makes it unnecessary. A proof that avoids calculus can be meaningful for
> those who don't know calculus, or who haven't used it for a while.
>
> With that said, I have a few comments to make about some of the assertions
> I have read here recently, some of which have appeared without explicit
> proof.
>
> (1) The surge impedance of a (lossy) transmission line cannot have an
> angle more than 45 degrees away from the real axis.
>
> This is true. Z_0 = sqrt((R + jwL)/(G + jwC)) (here I am using "w" instead
> of omega). Both the numerator and denominator lie in the first quadrant,
> so their quotient lies in the right half plane (angles subtract when one
> divides), and the square root of that has an angle lying between - 45
> degrees and + 45 degrees. (The branch of the square root with positive
> real part has to be taken; if you can find coax whose surge impedance has
> a negative real component, I'll pay you good money for it.)
>
> [Since this angle lies between - 45 degrees and + 45 degrees, peculiar
> consequences deduced from calculations involving surge impedances such as
> 50 - j200 can be ignored.]
>
> (2) There is a nice geometrical interpretation for the reflection
> coefficient, or rather for its magnitude. Since the coefficient is (Z_L -
> Z_0)/(Z_L + Z_0), its magnitude expresses how much further Z_L is from the
> surge impedance Z_0 than it is from the negative, - Z_0, of the surge
> impedance. If Z_L is equidistant from Z_0 and - Z_0, then the magnitude of
> the reflection coefficient is 1. If Z_L is closer in the complex plane to
> Z_0 than it is to - Z_0, then the magnitude of the reflection coefficient
> is less than 1. If Z_L is closer to - Z_0 than to Z_0, then the reflection
> coefficient's magnitude exceeds 1. Now plot the points Z_0 and - Z_0 and
> draw the perpendicular bisector of the segment joining them. If Z_L is on
> that perpendicular bisector, the magnitude of the reflection coefficient
> is 1; if it is on Z_0's side of the bisector, the magnitude is less than
> 1; if it is on - Z_0's side, the magnitude exceeds 1. Of course Z_L has to
> stay in the right half plane; if it didn't have to do this, you could take
> Z_L very close to - Z_0 and get enormous reflection coefficient
> magnitudes.
>
> (3) Consider an ellipse having Z_0 and - Z_0 as its foci. There are
> infinitely many such ellipses, including a degenerate one (just the

> segment between the "foci"). All these different ellipses fill up the
> complex plane, and no point in the plane is on more than one of them. On
> any one such ellipse, the sum of the distances from a point on the ellipse
> to the two foci Z_0 and - Z_0 is constant (definition of an ellipse), the
> value of that constant depending upon which ellipse it is but the constant
> has to be at least as large as the interfocal distance. We should ignore
> points on the ellipse that are in the left half plane. A portion of the
> ellipse will be in the same quadrant as Z_0, and a portion will be in the
> quadrant that contains the conjugate of Z_0. (Remember we are ignoring the
> points in the left half plane.) All of the points on the ellipse that are
> in Z_0's quadrant are closer to Z_0 than to - Z_0, so they'll give
> reflection coefficients with magnitude less than 1. So will those of the
> points on the ellipse in the other quadrant under consideration that are
> between the real axis and the perpendicular bisector. But those that are
> between the perpendicular bisector and the imaginary axis will be closer
> to - Z_0 than to Z_0 and thus will yield reflection coefficients with
> magnitudes greater than 1. It should be obvious that, along any given
> ellipse, the one for which the magnitude of the reflection coefficient is
> greatest is the one on the imaginary axis, since as we move along the
> ellipse towards that point, the distance to - Z_0 decreases and the
> distance from Z_0 increases (remember, their sum is constant along the
> ellipse). So on any *one* ellipse, the largest reflection coefficient
> magnitude occurs where the ellipse meets the imaginary axis, and thus Z_L
> has real part 0 and imaginary part of opposite sign to that of Z_0.
>
> (4) Start with Z_0 real, and slowly rotate Z_0 into either the first or
> fourth quadrant, but not more than 45 degrees in either direction, keeping
> the same magnitude while you rotate. The segments joining Z_0 and - Z_0,
> their perpendicular bisectors, and the various ellipses will all
> simultaneously rotate. It's now obvious that for ellipses of any fixed
> size, the one producing the largest magnitude for the reflection
> coefficient will occur when Z_0 is at + 45 degrees or - 45 degrees. So if
> we want to maximize the reflection coefficient magnitude, we can restrict
> attention to those two cases. The - 45 degree case (capacitive surge
> impedance) is the more familiar one, but the math is the same either way.
> The only question is, which one of the ellipses should we use, if we wish
> to maximize the magnitude of the reflection coefficient?
>
> (5) So now we're going to assume Z_0 = k(1 - j), and thus - Z_0 = k(-1 +
> j), while Z_L = ktj. It's clear that the factor k is going to cancel out
> when calculating the reflection coefficient, so I will henceforth ignore
> it (i.e., normalize it to k = 1 by appropriate choice of units). If you
> are of a geometrical turn of mind, you can produce a geometrical argument
> showing that the best one can do is to make sure the ellipse meets the
> imaginary axis at the same distance from the origin as the two foci, i.e.
> at j*sqrt(2). If you are of an algebraic turn of mind, you can make an
> algebraic argument involving completing the square to demonstrate the same
> thing. If you insist on using calculus, it's now just one variable
> calculus, not multivariable calculus, since the only independent variable
> is t, which will turn out to be sqrt(2) at the maximum. (Hint: don't look

> at the ratio of distances; look at the square of that ratio, so as to get
> rid of all those square roots.)
>
> (6) Once all that is done, it's just a bit of algebra to show that when t
> = sqrt(2) then the magnitude of the reflection coefficient is 1 + sqrt(2).
> That's the best (worst?) you can do. And if you can find some coax whose
> surge impedance angle is - 45 degrees, you can indeed do it.
>
> All the above was done from first principles. I am not fortunate enough to
> own a copy of Chipman, though I wish I were, but if this is what he says,
> then I am in full agreement with him.
>
> David, ex-W8EZE, willing to part with some of my pension money for a copy
> of Chipman if you know where one can be found (Powell's doesn't have any
> copies)
>
> --
> David or Jo Anne Ryeburn
> ryeburn@sfu.caz
> To send e-mail, remove the letter "z" from this address.

4534. LOOKING FOR JOTA CONTACTS - IRLP node 6625 active for JOTA

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 23:36:33 UTC
From: PMac <vk2evb@nella.net.au>
Message-ID: <3f4fe63e$1@usenet.per.paradox.net.au>
Source record: 109279

Coffs Harbour Girl Guides will be active on IRLP node 6625 VK2EVB for contacts with other JOTA stations around the world. Activity will begin 00:00 UTC and continue till approx. 07:00 UTC on the Saturday only. The girls are looking forward to chatting with Scouts/Guides etc. from overseas. Hope to hear you on IRLP node 6625.

73 Peter VK2EVB

4535. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 23:45:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <qAR3b.1014$Om1.130@newsread2.news.atl.earthlink.net>
Source record: 109278

Bill:

[snip]
> In the case of rather lossy cable, it is best to
> abandon rho and SWR before they become "bloody
> useless nuisances", and use the computer for
> everything.
>
> Bill W0IYH
[snip]

Amen Brother!

--
Peter K1PO
Indialatic By-the-Sea, FL.

4536. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-29 23:57:41 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <VLR3b.1064$Om1.322@newsread2.news.atl.earthlink.net>
Source record: 109280

Roy:

[snip]
> This argument of "you don't agree with my view of how things work, or my
> inappropriate models, therefore you don't believe in the Laws of
> Physics" is as tiresome as it is pompous.
>
> Roy Lewallen, W7EL
[snip]

Sorry if I offended. I didn't mean to.

And all along here I thought you were the one being tiersome and pompus!

Such is the medium of news group postings.

In summary, I believe that we agree completely, and that we were typing at
"cross purposes".

Your general accusation that no one from Camp B, what ever camp that was,
seemed to show
your "pique" and so I responded in kind.

A waste of time, or... a lesson learned.

Maxwell rules, lumped or distributive, there is no discrimination.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4537. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 00:08:33 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vkvqoef1ra21e2@corp.supernews.com>
Source record: 109281

Peter O. Brackett wrote:
> . . .
> Electromagnetic waves are particularly simple when compared to general wave
> phenomena,
> since em waves are transverse only.
> . . .

I thought this was only true for waves moving through a lossless medium or in a lossless transmission line that supports TEM waves. Either the electric or magnetic field isn't transverse in a hollow waveguide, and either or both can be non-transverse in a lossy medium.

Or am I mistaken about this?

Roy Lewallen, W7EL

4538. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 00:10:58 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <FTSdncrHXLkEdtKiXTWJiA@comcast.com>
Source record: 109282
Body handling: HTML body converted to readable text

"Dr. Slick" wrote in message
news:1d15af91.0308291211.41ef74d2@posting.google.com...
> "Tarmo Tammaru" wrote in message
news:<-76cnZ1OFrSg-dKiXTWJkA@comcast.com>...
> > Why didn't you do the gamma for a shorted line using your formula? I
think
> > you settled on (Zl - Z0*)/(Zl + Zo). For Zl = 0 this comes to -Z0*/Z0,
> > which, for Zo having phase angle b equates to -1 at angle(-2b).
> >
>
> Agreed. This doesn't prove anything, does it?

How does this allow for the sum of V+ and V- to be 0? That is what you have
across a short.

.....
> >
= (1/2)Go|V+|^2e**(-2az)[1 - |CM|^2 +2(Bo/Go)Im(CM)]
> >
> > Remember, z is distance from the load.
> >
> > Tam/WB2TT
> >
>
>
> ok, you've done a nice job of copying the text you sent me.

As I recall, you said you were not familiar with these diagrams and did not
understand them. What do you want me to do? derive it in a different way?

>
> They also mention that the normalized load impedance Zn=Zr/Zo does
> NOT have the same angle as Zr because Zo is complex in the general
> case.
>
> > "They anticipate people being concerned about |Gamma| > 1 and later
come up
> > with a formula for time average power."
>
> Really? Could you tell us more about that? Could you email me
> more pages, especially the one that has Eq. 5.2b?
>
>
>

> Slick

I can't scan the whole chapter, and part of the next. You should be able to get your library to borrow the book for you. Or, look at some other college textbook under lossy lines. 5.2B is straightforward enough:

Zo=(1/Yo)=SQRT[(R+jwL)/(G+jwC)]=Ro+jXo

Tam/WB2TT

4539. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 00:12:11 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <vZR3b.1174$Om1.832@newsread2.news.atl.earthlink.net>
Source record: 109283

David:

[snip]
> i am asking you to show me a distributed model for the internal resistance
> of a thevenin generator that as a lumped model is a 1v step voltage source
> in series with a 1 ohm resistor. a zero length transmission line doesn't
> exist so the model is still lumped.
[snip]

Dave you are being picayune. No one wins a pissing contest like this,
everyone just gets piss on their hands.

I could respond with... OK then... how about a transmission line of length
somewhat less than exp(-exp(-exp-1000))) meters in series with a 1 Ohm
resistor. Will that do? Or do I could use a "recursive" definition.

It simply doesn't address or affect the point at hand, which is that a
complex Zo line terminated in its' conjugate will exhibit a non-zero
reflected voltage. Do you agree? If not, what 's your point?

"When I use a word", Humpty Dumpty said, in a rather scornful tone,
"it means just what I choose it to mean, neither more nor less."

"The question is", said Alice, "whether you can make words mean so many
different things."

"The question is", said Humpty Dumpty, "Who is to be master: - that's all."

-- Lewis Carol, "Alice in Wonderland - The Turtle soup"

Dave, I am willing to help you understand my unimportant proof, I didn't
realize it was such a big
deal, but hey... I recall you asked or commented about my posting, but if
all you wanted is to fuss
with me over side issues such as if lumped systems obey different laws than
distributed systems, then
I presume that we will have to agree that we cannot have a productive
discussion..

If I have offended you in some way, I did not mean to, please accept my
appologies.

Best Regards,

--
Peter K1PO
Indialantic By-the-Sea, FL.

4540. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 00:39:19 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <u8ecnZ2kpfWgb9KiXTWJhw@comcast.com>
Source record: 109284

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f4fa347$1_2@127.0.0.1...
> Consider the following two examples:
>
> 1. The source is generating 100 watts and 20 watts of the 50 watts of
> incident reflected power is being re-reflected in phase from the source.
> The forward power meter reads 120 watts. The reflected power meter reads
> 50 watts.
>
> The conventional rule-of-thumb has the source generating (100-30)=
> 70 watts since it is dissipating 30 watts of reflected power.
>
> 2. The source is generating 110 watts and 10 watts of the 50 watts of
> incident reflected power is being re-reflected in phase from the source.
> The forward power meter reads 120 watts. The reflected power meter reads
> 50 watts.
>
> The conventional rule-of-thumb has the source generating (110-40)=
> 70 watts since it is dissipating 40 watts of reflected power.
>
> How can you possibly distinguish between the above two identical
conditions
> caused by different source impedances?
> --
> 73, Cecil, W5DXP

Cecil,

I actually did a test along these lines. Believe we discussed that some
weeks ago before I did it.

1/4 wave 50 Ohm line shorted at the end. Freq ~ 2 MHz

50 Ohm generator in series with a 75 ohm resistor at the other end.

Looked at both ends of the 75 Ohms, both to ground, and differential.

At resonance, all voltages were in phase.

Unfortunately I used very low loss line, but to a good approximatio, the
only power supplied by the source could be explained by cable loss, and all
reflected power was re reflected. It would be interesting to do this with a
total source impedance of <50.

BTW, I also did the thing with measuring VSWR and then changing the source
impedance. Power changed, VSWR did not, for either 1:1 or 1.7:1.

Tam/WB2TT

4541. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 00:43:00 UTC
From: carkenord@juno.com
Message-ID: <4346b55e.0308291643.4d3a3ecb@posting.google.com>
Source record: 109285

> All the above was done from first principles. I am not fortunate enough to
> own a copy of Chipman, though I wish I were, but if this is what he says,
> then I am in full agreement with him.
>
> David, ex-W8EZE, willing to part with some of my pension money for a copy
> of Chipman if you know where one can be found (Powell's doesn't have any
> copies)

The USA public library system has many copies of:

"Schaum's Outline of Theory & Problems of Transmission Lines" by
Chipman

Using the Interlibrary Loan System of any public library will put a
copy in your hands, tho it will only be "on loan".....not "for
keeps"......

Lee Carkenord KA0FPJ

4542. Setting up a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 00:52:28 UTC
From: Jo=?ISO-8859-1?B?4w==?=o Paulo Carvalho <jvaz.carvalho@netcabo.pt>
Message-ID: <BB75B3DC.9C7%jvaz.carvalho@netcabo.pt>
Source record: 109286

Hello everybody.

I want to set up an antenna in my new home and I'm searching for suggestions on how to do it.

I have a large balcony in the corner top floor of the building. The north and west side of the balcony are facing the street and on the south and east of it there are walls that go up to the roof. The higher point of the wall is about 5,5 meters tall. I want to set up a vertical antenna with nearly 5 meters tall and weights about 10 kilograms.

I thing the best thing to do would be attaching a mast to the higher wall and the antenna on the top but I don't know if it's the best.

Can someone give a suggestion?

Thank you all.

4543. DXCC Qsl cards ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 01:06:07 UTC
From: carter <cartw@netart.com>
Message-ID: <3F4FF87F.FB4144E@netart.com>
Source record: 109291

I finally have 100 countries.
But some are older than 10 years. Does this present a problem?

What bands are valid for DXCC?

What are some common reasons cards get rejected?

If they don't count all 100 and reject them... will they give
credit for the ones they did count?

Do WARC bands count?

4544. Re: Setting up a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 01:06:39 UTC
From: Dan/W4NTI <w4nti@get>
Message-ID: <zMS3b.1595$Om1.155@newsread2.news.atl.earthlink.net>
Source record: 109287

"Jo&#65533;o Paulo Carvalho" <jvaz.carvalho@netcabo.pt> wrote in message
news:BB75B3DC.9C7%jvaz.carvalho@netcabo.pt...
> Hello everybody.
>
> I want to set up an antenna in my new home and I'm searching for
suggestions
> on how to do it.
>
> I have a large balcony in the corner top floor of the building. The north
> and west side of the balcony are facing the street and on the south and
east
> of it there are walls that go up to the roof. The higher point of the wall
> is about 5,5 meters tall. I want to set up a vertical antenna with nearly
5
> meters tall and weights about 10 kilograms.
>
> I thing the best thing to do would be attaching a mast to the higher wall
> and the antenna on the top but I don't know if it's the best.
>
> Can someone give a suggestion?
>
> Thank you all.
>

The more in the clear, with no obstructions, will work the best.

Dan/W4NTI

4545. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 01:08:26 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <eOS3b.1611$Om1.1607@newsread2.news.atl.earthlink.net>
Source record: 109288

Roy:

[snip]
> I thought this was only true for waves moving through a lossless medium
> or in a lossless transmission line that supports TEM waves. Either the
> electric or magnetic field isn't transverse in a hollow waveguide, and
> either or both can be non-transverse in a lossy medium.
>
> Or am I mistaken about this?
>
> Roy Lewallen, W7EL
[snip]

Compressive-dillutive waves occur only in media that is compressible, like the earth or the air, or springs, etc... With compressive-dillutive waves the "vibrations" occur in the effective density of the medium.

Electromagnetic waves propagate with transversal vibrations of the E and H fields, viz. Side to side vibrations, not shortening and lenghtening vibrations. If an electromagnetic wave is supported in the Transverse Electromagnetic or TEM mode then [theoretically] the E and H fields are at right angles to each other and to the direction of propagation, in the terminology of TEM, the term transverse referes to the orientation of the wave with respect to it's guides, and not to it's vibration mode in the longitudinal - transverse sense.

Visualize a long "slinky" coil attached to the wall. Shake one end up and down to create a transverse wave in which the slinky moves up and down. Push and pull on the end to produce compression and dilution to cause longitudinal waves in which the slinky does not move up and down but in which the distance between turns moves back and forth. This slinky analogy sort of illustrates the differences. Meanwhile in electromagnetic wave phenomena you have as well as the most common TEM mode which is only transverse vibrations, also there exists a plethora of TM and/or TE modes, or even in the near field, where the fields may not be at right angles to each other or to the direction of propagation, but the vibrations are still talways transverse, i.e. not compressive-dilutive.

Back in the mid-1800's after Maxwell produced his celebrated equations and Heaviside improved them by expressing them in vector form most scientists of the time noted that Maxwell's formulation provided no explicit form for a medium for the electromagnetic waves to propagate in, and they also noted that there were only transverse and not longitudinal [compressive-dilutive] vibrations supported by his equations. Several eminent scientists of the day felt that this left openings for several more discoveries and so... Then ensued for several decades a search for the "ether". The "ether" was

supposed to be the media which supported the electromagnetic waves. During that period several of the eminent scientists of the time proposed that the "ether" once it was found might actually be compressible and they proposed that Maxwell and Heaviside had left out of their formulations the possibility of compressive-dilutive or longitudinal vibrations. Several scientists of the time actually formulated equations which supported compressive-dilutive em waves and actually conconcted and, to no avail, actually conducted experiments to try to find out if such compressive-dilutive vibrations actually occured with electromagnetic phenomena.

As we all know, eventually the existence of the "ether" was discredited, mainly by the Michelson-Morley experiments, and today we all know that electromagnetic waves do not have a media or "ether" to support their propagation and vibrations.

Electromagnetic waves propagate just fine in a complete vacuum, and a vacuum is incompressible, and so the search for compressive-dilutive vibrations of electromagnetic waves became moot and a search for experimental evidence of them was abandoned by all who were interested. One can add terms to the Maxwell-Heaviside equations to support compressive waves, and this has been done by several theoretical physicists, but there is no sense doing so since none have ever been discovered!

The book, I referred to above, "Physics of Waves" gives all the details of the wave equation for media that supports compressive waves. An important such field is the field of seismology. Indeed the field of siesmology studies waves that vibrate in all modes, transversally and longitudinally, as well as surface waves. Seismic waves are processed regularly with beam forming arrays of seismometers and processed by tomographic techniques to image the earth in all wave modes.

Seismology is a facinating field and seismologists are generally the most sophisticated of all wave mechaics!

A good modern book on the seismic wavefield is:

B. L. N. Kennett, "The Siesmic Wavefield", Cambridge University Press, New York, NY, 2001. ISBN: 0-521-00663-5.

But be aware it is full of gratuitous partial differential equations and tensor analysis. The stress-strain variables of compressible-dillutive media are expressed as tensors and the partial differential equations are cast in tensor form.

All this to say that electromagnetic wave phenomena are a particularly simple form of wave phenomena when compared to the most complicated types.

--
Peter K1PO
Indialantic By-the-Sea, FL.

4546. Re: Setting up a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 01:11:55 UTC
From: Tom Coates <tecoates@comcast.net>
Message-ID: <hrqcnbXxsIZbZNKiXTWJjA@comcast.com>
Source record: 109289

What bands?

Tom, N3IJ

"Dan/W4NTI" <w4nti@get rid of this mindspring.com> wrote in message
news:zMS3b.1595$Om1.155@newsread2.news.atl.earthlink.net...
>
> "Jo&#65533;o Paulo Carvalho" <jvaz.carvalho@netcabo.pt> wrote in message
> news:BB75B3DC.9C7%jvaz.carvalho@netcabo.pt...
> > Hello everybody.
> >
> > I want to set up an antenna in my new home and I'm searching for
> suggestions
> > on how to do it.
> >
> > I have a large balcony in the corner top floor of the building. The
north
> > and west side of the balcony are facing the street and on the south and
> east
> > of it there are walls that go up to the roof. The higher point of the
wall
> > is about 5,5 meters tall. I want to set up a vertical antenna with
nearly
> 5
> > meters tall and weights about 10 kilograms.
> >
> > I thing the best thing to do would be attaching a mast to the higher
wall
> > and the antenna on the top but I don't know if it's the best.
> >
> > Can someone give a suggestion?
> >
> > Thank you all.
> >
>
> The more in the clear, with no obstructions, will work the best.
>
> Dan/W4NTI
>
>

4547. Re: Antenna computor modeling analysis

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 01:26:54 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <2suvkvkmo5h079n9l4vf8fer2ca8o68d2c@4ax.com>
Source record: 109290

On 29 Aug 2003 13:10:55 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
wrote:
>I was thinking that it showed a particular high
>resonance (mechanical?) at that particular point
> but that is what I want it to represent.

Hi Art,

It appears that Peter's references offers a form of math to satisfy
your observation:
>>William C. Elmore and Mark A Heald, "Physics of Waves", first published in
>>1969, but
>>most recently published in paperback by Dover Publications, New York, 1985
>>and
>>generally available in reprints even today for around US$17.00. A real
>>bargain.
>>ISBN: 0-486-64926-1 LCCN: 85-10419.
or
>> With compressive-dillutive waves
>>the "vibrations" occur in the effective density of the medium.
...
>>B. L. N. Kennett, "The Siesmic Wavefield", Cambridge University Press, New
>>York, NY, 2001. ISBN: 0-521-00663-5.
>>
>>But be aware it is full of gratuitous partial differential equations and
>>tensor analysis. The stress-strain variables of compressible-dillutive
>>media are expressed as tensors and the partial differential equations are
>>cast in tensor form.

73's
Richard Clark, KB7QHC

4548. Re: DXCC Qsl cards ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 01:54:50 UTC
From: "Dee D. Flint" <deehays@qix.net>
Message-ID: <KtT3b.35485$Vx2.15571741@newssvr28.news.prodigy.com>
Source record: 109292

"carter" <cartw@netart.com> wrote in message
news:3F4FF87F.FB4144E@netart.com...
> I finally have 100 countries.
> But some are older than 10 years. Does this present a problem?
>
> What bands are valid for DXCC?
>
> What are some common reasons cards get rejected?
>
> If they don't count all 100 and reject them... will they give
> credit for the ones they did count?
>
> Do WARC bands count?
>

The answers to all your questions are at the ARRL website.

Dee D. Flint, N8UZE

4549. Re: Reflection coefficient

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:09:07 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vl01pabr21lb94@corp.supernews.com>
Source record: 109293

Dear Reg & Group:
You are correct. The value found on the blackboard is wrong. I was too hasty. When sitting down, the answer becomes clear. Perhaps at my age my brain needs to be seated in order to work correctly.
You hypothesis on what we did wrong may well be on point. No way to know.
Thank you also for your suggestions about the use of your computer programs.

I apologize for being too hasty and not following the advice I continually give my students: check your work.

73 Mac N8TT
--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message news:bi14ugekt1@titan.btinternet.com...
> "J. McLaughlin" wrote -
> > Dear Reg:
> > Lab equipment was not used. The lab was just a convenient gathering
> > place with a blackboard. (No cigarettes in our lab or anywhere inside
> > buildings.)
> > I suspect that we made an arithmetic error. Need to revisit what we
> > did - much too late at night right now.
> > Thanks for the poke. 73 Mac N8TT
> ==========
>
> Mac, you didn't make an arithmetical error. I think you used the wrong value
> of terminating reactance Xt. Just a Sherlock Holmes deduction. ;o)
>
> The value of terminating reactance which gives greatest possible magitutude
> of reflection coefficient is equal to the magnitude of Zo which is equal to
> |Zo| = Sqrt(Sqr(Ro) + Sqr(Xo)).
>
> As you have already deduced, maximum value occurs when the angle of Zo is
> equal to -45 degrees at which Ro = -Xo.

>
> You incorrectly set the terminating inductive reactance XL equal
to -Xo
> whereas XL should have been Sqrt(2) times greater.
>
> Now if XL is incorrectly made -Xo then the reflection coefficient
calculates
> to Sqrt(5). Which is where your 5 comes from.
>
> Somewhere in these threads I made the exactly same error myself in a
> non-calculating context where it was not likely to be noticed. The
pair of
> errors, yours and mine, were probably just coincidental.
>
> I do hope I have not just introduced another. ;o)
>
> You appear to be in an educational establishment. There are two
programs
> available from the website below which you may find useful. Download
in a
> few seconds and run immediately programs COAXPAIR and RJELINE3. They
have
> been written according to classical transmission line formulae,
generally
> accurate to all figures displayed and may be used to check other work
which
> uses only engineering approximations. There are others also of
educational
> value.
> ----
> ========================
> Regards from Reg, G4FGQ
> For Free Radio Design Software
> go to http://www.g4fgq.com
> ========================
>
>

4550. Re: DXCC Qsl cards ?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:17:40 UTC
From: Caveat Lector <CL@latin.com>
Message-ID: <9PT3b.21341$S_.12643@fed1read01>
Source record: 109295

"carter" <cartw@netart.com> wrote in message
news:3F4FF87F.FB4144E@netart.com...
> I finally have 100 countries.
Congrads on the 100
> But some are older than 10 years. Does this present a problem?
NOPE
>
> What bands are valid for DXCC?
160, 80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 meters)

> What are some common reasons cards get rejected?
Improper documentation
>
> If they don't count all 100 and reject them... will they give
> credit for the ones they did count?
YEP
>
> Do WARC bands count?
YEP

ARRL membership is required for DXCC applicants in the US, its possessions,
and Puerto Rico
>
See DXCC Award -- URL:
http://www.arrl.org/awards/#dxcc
AND
http://www.arrl.org/awards/dxcc/rules.html#si

Signal in the noise
In Nevada

4551. Re: SWR will change with Source Z if you measure AT the Source

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:18:06 UTC
From: "J. McLaughlin" <JCM@Power-Net.Net>
Message-ID: <vl02a1o5n3b4d2@corp.supernews.com>
Source record: 109294

This is proof that the Californian artist Garvin Yee, who styles himself as a doctor and yet is not in the amateur radio data base, does not know what he is talking about. He may well be just a "troll."
It is indeed a well know fact that best NF and maximum gain are not expected to coincide. Those of you who have been reading the group for a while will remember my story about proving this to Prof Kraus when I was his student.
Mr. Yee should play somewhere else.
Mac N8TT

--
J. Mc Laughlin - Michigan USA
Home: JCM@Power-Net.Net

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308211822.2740b335@posting.google.com...
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<LJydnXtsnu_RgNiiU-KYvA@comcast.com>...
> > I am not going to go around in circles on this. The now obsolete
Motorola RF
> > manual is still a good source for the real world. As for the noise
figure,
> > it is a well known fact that best NF and maximum gain do not
coincide.
> >
>
> That's what i thought. You've never designed anything in your
life.
>
>
> Slick

4552. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:28:01 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <5f20lvs86vagudgv7f7r27p059gf71uoi9@4ax.com>
Source record: 109304

One thing that as always bothered me is that antenna is not balanced
with that lop-sided feed. Further-the-more that assumed 300-Ohm
impedance has a pretty hefty reactive component. As baluns like
resistive loads I would question just how well the balun works under
that condition?

I too have modeled the antenna and agree that the claims made
regarding feedline's radiation contributing to a strong vertical
component is over stated to say the least.

Good luck with your cut and try.

73
Danny, K6MHE

On Sat, 30 Aug 2003 02:02:46 GMT, "Charles Wittnam"
<wittnam@bresnan.net> wrote:

>
> That is probably what I am going to do. I became a
>little more anxious after I read L.B. Cebik's articles on OCF dipole
>antennas, "From the Ground Up." Things are a little bit more complicated
>than I thought. Most baluns used in OCFs are 4/1. I have have included a
>graph from his article .First of all, the calculations used to design OCFs
>are supposed to estimate the 300 ohm impedance point. These are always a
>rough estimate since as you get further from the center of the antenna it
>goes up exponentially. When you factor in nearby objects, your radiating
>feedline, and antenna height the calculated 300 ohm point can be in a
>different area altogther. A 50% error in impedance result with a 5%
>shift in the 300 ohm point, which on a 40 meter OCF would be about three
>feet. More recently some of the 40meter OCF builders (I think the 40
>meter "Carolina Windom" would be an example), have tried to hit the
>flatter part of the curve by using a different offset calculation. Instead
>of D3/L=.167 for the 300 ohm point they used D1/L=.38 and D2/L= .62 for
>a 100ohm point. They are using a 2:1 balun. In the inclosed info that came
>with the antenna it says it is using a 1:1 balun which I sincerely doubt.
>So I measured my antenna and the offset is closer to the second formula,
>than the first so I was confused.. If I cut it up and it did not work well
>and I knew what the balun was I would know which part of the curve (and
>the antenna) to head for! . So you can understand my intial reluctance to
>act. Perhaps this is being overly cautious. You get that way when you are
>given a "1:1" balun placed in the position where you would put 2:1 in an
>antenna that usually uses a 4:1 AND the company does not answer questions
>about their product.
>
> I would highly recommend Cebik's article series on OCF antennas, in

>which he debunks a lot of their claims, especially the "vertical radiator"
>aspect of the feedline and the "yagi" performance. He basically argues
>that these claims are being backed up by overly simplified assumptions about
>the antenna being plugged into antenna modeling programs. He believes they
>are no different than dipoles really. For my purposes I wanted an antenna
>system with an offset feed because I can hide the feedline coax easier
>given my available tree locations. (and keep the XYL happier...) This
>antenna has a black balun and black insulated flexible wire which really
>blends in well on my heavily wooded lot. Right now I am trying to salvage
>the situation. This is the first time I have run into an amateur supply
>company that has behaved so poorly. It was a rude awakening. I may just do
>what you suggested. I hope I have the 4 to balun since I have other uses
>for it. If the down sizing doesn't work then I will either just swap out
>baluns or try a different approach, such as using a parallel feedline and
>not using the balun. We will see.
>
>
>
>
>
>"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
>news:8plvkv4tqdhja7t1faok0s33curesbe3b4@4ax.com...
>> On Fri, 29 Aug 2003 21:37:00 GMT, "Charles Wittnam"
>> <wittnam@bresnan.net> wrote:
>>
>> > I am trying to salvage the situation before going
>to
>> >war with Antennas and More with my credit card company. They shipped the
>> >wrong antenna to me and have NOT answered numerous calls or emails. I
>was
>> >looking for a 40 meter OCF dipole and they sent me a 80 meter OCF, which
>> >was not what I ordered because of space limitations.
>> >If I could cut the thing down to use on 40 meters then I can save the
>> >inevitable hassle of dealing with this outfit and going to war with them
>via
>> >my credit card company.. However, my understanding is that a lot of the
>> >commercial builders of the OCF dipoles use a 2/1 balun for their 40 meter
>> >antennas since they are trying to match a different impedance spot on the
>> >shorter antenna., hence it is not necessarily the case that you can just
>cut
>> >them down. Any thoughts?
>> >
>> >
>> >KD7HU
>> >
>> >
>> Why not just scale the antenna? That's is to say, in your case, reduce
>> the length of the wires by a factor of ï¿½.
>>
>> Danny, K6MHE

>>
>>
>

4553. WTB: Cliff Dweller Rotatable Dipoe Centre Antenna Section

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:48:54 UTC
From: Norm VE3CZI <ve3czi@arrl.net>
Message-ID: <qpU3b.3961$Pa1.177316@read1.cgocable.net>
Source record: 109297
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.boatanchors,rec.radio.amateur.homebrew,rec.radio.swap

I have the End Coils & Control Box for the Cliff Dweller Antenna that was
Mfd in 1960's by New-Tronics.
The Model was CD-40-75. It was essentially a 40 & 75 Meter Rotatable
Dipole.
I need the centre Motor Assy and extended 10 ft extentions between the
Center Motor Assy and the End 40/75 Meter Coild Assy.
I got the parts I got from an Estate Sale, but the widow did not know
anything about a Centre Section...I have done some digging and have info
from Newtronics but is limited.
Any assistance would be appreciated...even close up pictures of the centre
section so I "may" be able to fabricate a similar assy would be appreciated
Thank You for your time....Norm

4554. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:52:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl04c0knab338b@corp.supernews.com>
Source record: 109296

Thanks for the most interesting discussion of slinkys, "ether", and seismology. But I'm a little vague on what you mean by "vibrations". You're describing a field whose orientation isn't necessarily at a right angle (transverse) to the direction of propagation (as in a TE or TM mode wave), yet whose "vibrations" are nevertheless at a right angle to the direction of propagation. So the "vibrations" are in a different direction than the field. I'd like to learn more about this phenomenon, but I can't find "vibrations" in the indexes of any of my electromagnetics texts. Do they have another name?

Roy Lewallen, W7EL

Peter O. Brackett wrote:
> . . .
> Visualize a long "slinky" coil attached to the wall. Shake one end up and
> down to create a transverse wave in which the slinky moves up and down.
> Push and pull on the end to produce compression and dilution to cause
> longitudinal waves in which the slinky does not move up and down but in
> which the distance between turns moves back and forth. This slinky analogy
> sort of illustrates the differences. Meanwhile in electromagnetic wave
> phenomena you have as well as the most common TEM mode which is only
> transverse vibrations, also there exists a plethora of TM and/or TE modes,
> or even in the near field, where the fields may not be at right angles to
> each other or to the direction of propagation, but the vibrations are still
> talways transverse, i.e. not compressive-dilutive.
> . . .

4555. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:55:39 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291855.43926b62@posting.google.com>
Source record: 109298

k7itm@aol.com (Tom Bruhns) wrote in message
news:<3200347.0308290741.3ac912d@posting.google.com>...
>
> Ah, Garvin, thank you for confirming once again that you don't
> actually read what others post, even though you do respond abrasively,
> childishly. Rex is their Engineering Director. He didn't say they
> changed the course because of me, he said he couldn't find the formula
> with conjugate in it in their "more popular course which covers linear
> RF circuits," and they are now (and have for some time been) teaching
> it with the unconjugated formula. He also said their course is based
> on Gonzalez (see 1 below), a book that's been recommended to you by
> some other posters. That was all in my posting of his reply to my
> query, to which you responded, so presumably you actually read it.
>

Fine, they have the "normal" equation there.

Well, ask him to look in the RF Fundamentals I book.

> I suppose in your mental state you believe that anyone who doesn't
> agree with you is a nobody. Has that reduced you to posting
> misrepresentations of what others have said, as you have here? Has
> that reduced you to calling honest people liars? I have a good friend
> who is schizophrenic, and he is rather that way. He lives in a
> fantasy world which his mind has created for him, and to him it's
> reality. It has taken quite a toll on him in other ways. It's very
> sad to see. It's a disease I wouldn't wish on anybody. I hope you
> are not suffering from the same disease, though I honestly do see
> strong similarities in the way you respond to people.
>

Dude, i've been wrong before, and no doubt will be again. But
don't argue with me just because you find me abrasive.

And i only admit i'm wrong when i realize i'm wrong, which is
something few people can do in public. But nobody has given me a
reason to think i'm wrong on this point.

Slick

4556. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 02:56:39 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bip3p7mtc1@hercules.btinternet.com>
Source record: 109299

> > In the case of rather lossy cable, it is best to
> > abandon rho and SWR before they become "bloody
> > useless nuisances", and use the computer for
> > everything.
> >
> > Bill W0IYH
> [snip]
>
> Amen Brother!
>
> --
> Peter K1PO
> Indialatic By-the-Sea, FL.
>
==========

Amen ?

Peter, does "Amen" imply worship of Terman and the ARRL Handbook has now been heretically switched to a mere box of electronics ? Heaven help us!

Reg, G4FGQ

4557. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 03:00:30 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291900.387e4b0f@posting.google.com>
Source record: 109300

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<bufvkvo5j2m9fltco7bmf4hces2ir7urv7@4ax.com>...
> >
> > Thank you Bill. This is probably why they say that
> >an oscillator has negative resistance (postitive feedback),
> >and also why the stability circles have their centers located
> >outside the unit 1 Radius. Clearly, areas outside the
> >rho=1 circle on the Smith, are reserved for active networks.
> >
> >
> >Slick
>
>
> Hi OM,
>
> This does not follow logically. Active networks exhibit this behavior
> and offer a library full of applications. Strained passive networks,
> as evidenced by other correspondence, also reside in this "forbidden
> region" but their number are significantly smaller and for good
> reason.
>

Please give an example.

Slick

4558. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 03:02:30 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291902.65d640f4@posting.google.com>
Source record: 109301

kd1@sympatico.ca wrote in message news:<3F4FD446.78D04CB8@sympatico.ca>...
> W5DXP wrote:
> >
> > kd1@sympatico.ca wrote:
> > > But that does not address the issue with the generally
> > > accepted formula; how can reflected power be greater
> > > than incident?
> >
> > The transmission coefficient equals (2*Z2)/(Z2-Z1). If
> > Z2 is large compared to Z1, the transmitted voltage can
> > be large compared to the incident voltage.
>
> Yes indeed. And since this happens when the impedance
> increases, energy can be conserved.
>

Agreed. Extremely important point.

> But the discussion was about reflected voltage and how using
> the generally accepted formula can result in the reflected
> voltage exceeding the incident voltage. Converting this
> voltage to power would result in a greater reflected power
> than incident which would seem to violate conservation of
> energy. Perhaps this would be an interesting place for
> you to apply your energy analysis?
>
> ...Keith

Someone seems to understand the gist...

Slick

4559. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 03:04:24 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291904.4e6a5214@posting.google.com>
Source record: 109302

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vkv8q9iuee1138@corp.supernews.com>...
>
> For a moderately complex Z0 (moderately lossy
> cable), the conventional formula for rho can have
> magnitude values a little greater than 1.0. The
> boundary of the Smith chart represents rho=1.0,
> but a complex Z0 can push rho a little beyond the
> circumference. Because SWR is extremely high at
> the outer circle of the Smith chart, we should
> avoid that region in our work with the Smith chart.
>

Incorrect, Bill. Rho greater than one is for active
networks only.

Slick

4560. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 03:08:03 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308291908.e8e8fe@posting.google.com>
Source record: 109303

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vkvjmolmcpfl3e@corp.supernews.com>...
> Dr. Slick wrote:
>
> >
> > The the area within the rho=1 circle of the Smith is reserved for
> > passive networks. Outside rho=1, where the reflection is greater than
> > one, is reserved for active networks only.
>
> Stable amplifiers also reside inside the Smith
> chart. When their gain circles overlap into the
> outside they are "potentially" unstable and need
> to have networks designed that keep them from
> becoming unstable, by confining their operating
> point to the inside. When the gain circles are
> entirely outside the chart they are definitely
> unstable. Oscillators are designed to have their
> gain circles in this manner.
>

Agreed. This makes sense, as when outside the rho=1
circle, the reflection coefficient is greater than one,
which implies positive feedback.

Slick

4561. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 03:28:49 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <ak50lv06uvksovk3bpgfo7t9lbj6737agt@4ax.com>
Source record: 109305

On 29 Aug 2003 20:00:30 -0700, radio913@aol.com (Dr. Slick) wrote:

>> Hi OM,
>>
>> This does not follow logically. Active networks exhibit this behavior
>> and offer a library full of applications. Strained passive networks,
>> as evidenced by other correspondence, also reside in this "forbidden
>> region" but their number are significantly smaller and for good
>> reason.
>>
>
> Please give an example.
>
>
>Slick

?

Seems you have been arguing over one for quite some time now. I see
no sense in flogging that dead mare. My money's on the bob-tailed
nag. Certainly no one's bet on the bay.

73's
Richard Clark, KB7QHC

4562. Another DXCC question ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 04:06:51 UTC
From: carter <cartw@netart.com>
Message-ID: <3F5022DB.84E55202@netart.com>
Source record: 109308

I'm sending in for the regular DXCC and a few things are unclear
to me:

1) Would a CY9AA (St. Paul Island) from 1997 on 160 meters
count?
Thought I read somewhere that 160 meters doesn't count on
the regular DXCC.

2) I have a 3E1DX from Panama. But on the list it doesn't
have 3E1 for Panama listed. Only HO-HP#* is listed for
Panama. It was a CQWW contest in 1997. Am I out of luck?

3) Have a 4N7DW from Yugoslavia from 1993. Once again
this prefix isn't listed on the ARRL list for Yugo (YT prefix is)
Out of luck??

4) I have a Pitcairn Island VR6BB from 1993. VP6 is now
listed as being Pircairn Island. VR is now Hong Kong.
What gives with this one??

5) I have a HA5-350 from Hungary from 1996. Not allowed?

4563. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 04:36:02 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f502b38_5@corp.newsgroups.com>
Source record: 109306

Richard Clark wrote:

> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>But: "Every time you make a measurement, you make an error." So said
>>my EE prof almost half a century ago. I assume it's still true. :-)
>>
> Yes.

What can I assume from the fact that you ignored the tough questions
in the rest of my posting? How do you measure the exact amount of
reflected power re-reflected from the source?
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4564. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 04:43:42 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f502d03$1_5@corp.newsgroups.com>
Source record: 109307

Charles Wittnam wrote:
> However, my understanding is that a lot of the
> commercial builders of the OCF dipoles use a 2/1 balun for their 40 meter
> antennas since they are trying to match a different impedance spot on the
> shorter antenna., hence it is not necessarily the case that you can just cut
> them down. Any thoughts?

Antennas are scalable so halve the length of the antenna while keeping the
ratio of short leg to long leg the same. Depending on the design, you may
also have to halve the length of the feedline to exactly duplicate 75m
performance on 40m. Hopefully not since 1/2WL on 3.5MHz is about 1WL on 7.0MHz.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4565. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 04:46:08 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f502d94$1_5@corp.newsgroups.com>
Source record: 109309

Jim Kelley wrote:
> Nodes and zero crossings aren't necessarily the same thing.

They are for standing waves on lossless unterminated lines,
by definition.
--
73, Cecil http://www.qsl.net/w5dxp

-----= Posted via Newsfeeds.Com, Uncensored Usenet News =-----
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4566. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 04:53:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f502f5d$1_5@corp.newsgroups.com>
Source record: 109310

Tarmo Tammaru wrote:
> ...and all reflected power was re reflected.

Since the re-reflected waves are coherent with the source waves,
how do you know that? Would the amplitude of ghosting in a TV signal
support that assertion?
--
73, Cecil http://www.qsl.net/w5dxp

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------== Over 100,000 Newsgroups - 19 Different Servers! =-----

4567. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 04:56:46 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f503012$1_5@corp.newsgroups.com>
Source record: 109311

Peter O. Brackett wrote:
> Electromagnetic waves propagate with transversal vibrations of the E and H
> fields, ...

Heh, heh, not wearing the particle physics hat today, Peter? :-)
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4568. Ideas for mast rotor on RV?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 05:03:01 UTC
From: "Stephen Gutknecht (RS)" <Stephen@RoundSparrow.com>
Message-ID: <9eW3b.153264$Bf5.19184@news.easynews.com>
Source record: 109312

Hi,

I am working with some 2.4Ghz panels for wireless antenna.

I am trying to find a suitable rotor for a RV. I only need the mast to be 4 feet high, but I need to be able to raise/lower the mast. And once the mast is raised, rotate it.

Anyone suggest a solution / product?

Thank you.

4569. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 05:14:23 UTC
From: tdonaly@aol.com
Message-ID: <20030830011423.19936.00000146@mb-m28.aol.com>
Source record: 109313

>
>
>Thanks for the most interesting discussion of slinkys, "ether", and
>seismology. But I'm a little vague on what you mean by "vibrations".
>You're describing a field whose orientation isn't necessarily at a right
>angle (transverse) to the direction of propagation (as in a TE or TM
>mode wave), yet whose "vibrations" are nevertheless at a right angle to
>the direction of propagation. So the "vibrations" are in a different
>direction than the field. I'd like to learn more about this phenomenon,
>but I can't find "vibrations" in the indexes of any of my
>electromagnetics texts. Do they have another name?
>
>Roy Lewallen, W7EL

Yes, "vibes." I think Peter is regressing back to the '60's.
73,
Tom Donaly, KA6RUH

4570. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 05:46:53 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <jub0lv8gs82kv8stphvuq89ad809n19um2@4ax.com>
Source record: 109314

On Fri, 29 Aug 2003 23:36:02 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>
>> W5DXP <Cecil.A.Moore@ieee.org> wrote:
>>>But: "Every time you make a measurement, you make an error." So said
>>>my EE prof almost half a century ago. I assume it's still true. :-)
>>>
>> Yes.
>
>What can I assume from the fact that you ignored the tough questions
>in the rest of my posting?

Hi Cecil,

I have no idea what you can assume. You generally express it freely
anyway.

> How do you measure the exact amount of
>reflected power re-reflected from the source?

Dan's spreadsheet work seems like a good place to start. It is of no
particular interest to me and doesn't respond to the challenge in and
of itself. You might find an exact answer there. Simply going to the
bench would be adequate for amateurs, guessing would eclipse the
efforts of everyone else. ;-)

It should seem obvious that the power reflected at the source
interface is governed by the standard mechanics no one wishes to
impart to the source. In other words the power returning to the
source will be reflected through the same mechanics it met at the
mismatched load, with the "exact" value varying only by the reflection
coefficient of the source mismatch and the power incident upon it. As
the line presents a media of 50 Ohms, and the source presents a 100
Ohm discontinuity, the portion of power reflected is a rather trivial
computation - except for those who apparently employ "first
principles" in one direction only. Gad, I love that bit of irony!
And they do it for the sake of educating lurkers too!

Hi Ian, George, you will find this in chapter 9 from Chipman (got it
right that time George ;-). It also accounts for the increased loss
exhibited by the example of the Challenge that so baffles everyone. I
wonder what those so bench-shy would attribute that additional loss
to? Would their astrologers suggest the opposition of Mars? Hint:
the answer works at all aspects of any planets.

For those who closely follow their astrologer's advice, I once again suggest this only matters to those interested in accuracy. With equipment available across the counter in exchange for a credit card charge, their purchase is not likely to suffer any issues brought to the forum here and they can rest assured their SWR meters will work as advertised given the likely source Z of being 50 Ohms or insignificantly off from that value. (Many will gladly suffer 2:1 mismatch straight from the antenna connector so they can worry it at the antenna.) Further, for inferior purchases at similar cost (how would they know?), they will still be unaware barring some change in the length of cabling that will have them muttering a moment or two before they shrug it off anyway.

73's
Richard Clark, KB7QHC

4571. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 09:56:02 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <dtNtkIAySHU$EAlL@ifwtech.co.uk>
Source record: 109315

W5DXP wrote:
>Consider the following two examples:
>
>1. The source is generating 100 watts and 20 watts of the 50 watts of
>incident reflected power is being re-reflected in phase from the
>source.
>The forward power meter reads 120 watts. The reflected power meter
>reads
>50 watts.
>
>The conventional rule-of-thumb has the source generating (100-30)=
>70 watts since it is dissipating 30 watts of reflected power.
>
>2. The source is generating 110 watts and 10 watts of the 50 watts of
>incident reflected power is being re-reflected in phase from the
>source.
>The forward power meter reads 120 watts. The reflected power meter
>reads
>50 watts.
>
>The conventional rule-of-thumb has the source generating (110-40)=
>70 watts since it is dissipating 40 watts of reflected power.
>
>How can you possibly distinguish between the above two identical conditions
>caused by different source impedances?

I believe you have specified more numbers than you can actually know. In
particular, the forward and readings from the so-called "directional
power meter" will be totally dependent on whichever version of
transmission-line theory you're about to apply to the problem.

Therefore this particular thread of discussion is doomed :-)

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4572. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 09:56:27 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <T9juA3ALTHU$EAEe@ifwtech.co.uk>
Source record: 109316

Peter O. Brackett wrote:
>In summary, I believe that we agree completely, and that we were typing
>at "cross purposes".
>

If this newsgroup had its own logo, it would surely be two crossed
porpoises.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4573. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 10:00:06 UTC
From: kd1@sympatico.ca
Message-ID: <3F5075A6.4FA77D1C@sympatico.ca>
Source record: 109317

W5DXP wrote:
>
> Jim Kelley wrote:
> > Nodes and zero crossings aren't necessarily the same thing.
>
> They are for standing waves on lossless unterminated lines,
> by definition.

I think not. Standing waves are spatial. At certain points
on the line the (NET) voltage is always zero: nodes.
At other points on the line, the (NET) voltage is sinusoidal
and has 2 zero crossings per cycle. The amplitude of these
sinusoids varies spatially along the line resulting in the
standing wave.

In an ideal line terminated by Zo, no matter where you attach
your oscillograph to the line, you will observe a sinusoid
of the same amplitude. This sinusoid will have zero crossings
and power at the time of these zero crossings will be zero;
no energy will be flowing at the time of the zero crossing.

And going back to the comment that started this sub-thread,
it is this cyclical variation in energy flow which prompted
the power dudes to invent three phase lines in which the
energy flow does not vary cyclically; power is constant.

...Keith

4574. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 10:37:52 UTC
From: kd1@sympatico.ca
Message-ID: <3F507E80.C012649F@sympatico.ca>
Source record: 109318

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > Let me make it simpler then: the lamp cord from the wall to the table
> > lamp; lamp off and lamp on. Most lamp cord looks like twin-lead; some
> > have said it is approximately 100 Ohms but for the purposes of
> > discussion feel free to assume any convenient Z0 for the cord.
>
> I don't think you understand the problem. That lamp cord is about
> 0.0000005 wavelength at 60 Hz. Any reflected wave effects are completely
> negligible. It's like expecting reflections due to resistor leads at
> HF RF. They are theoretically there but usually too small to measure.

While the standing wave will be difficulty to observe, none of
the equations related to ideal transmission lines require a
minimum length. The reflected voltage and power can be trivially
calculated just as it is for RF. Let me do it for you.

120 Volt RMS line, open circuit, assume 100 Ohms for the lamp cord:
Vf = 60V RMS, Vr = 60 V RMS
Pf = 36 W, Pr = 36 W

> > And if it is not an RF transmission line?
> > If it is a DC circuit? Say your phone line when on hook?
> > If it is a lamp cord?
>
> The transmission line has to be a non-negligible percentage of a
> wavelength for one to have to switch from circuit math to
> transmission line math.

But you can switch early if you wish and should still get
reasonable results.

> What's the wavelength of DC? What's the
> wavelength of voice audio? What is the wavelength of 60 Hz?
>
> If the phone line is an appreciable percentage of a wavelength,
> there will be reflections (echoes) as anyone doing a transcontinental
> phone call can attest. Echo cancellation is big business with the
> telephone companies. Your theory would make telephone line echoes
> impossible for long unterminated lines. It is known that unterminated
> telephone lines result in the largest magnitude of echoes.

Of course, we were discussing sinusoidal steady state for which
there will be no echoes. Echoes only happen when the line energy
state is changing.

> It just occurred to me that you can revolutionize the telephone
> industry if you are right. You could patent your idea of no
> reflected energy on a long unterminated telephone line and sell
> it to the telephone companies for millions of dollars. Just have
> every intercontinental telephone line unterminated by using
> high impedance receivers on each end. Since no reflected energy
> could cross the voltage minimum point, echoes would be eliminated
> without the expensive echo cancellation equipment.

Unfortunately, such a situation only occurs when the line is in
steady-state which means no information could be sent, which would
render the line economically unviable.

> > Please, replace wall outlet with lamp cord to table lamp.
>
> Are you capable of measuring the 0.0001 degrees of phase shift
> between the forward wave and reflected wave? Your measuring
> instrument needs to be about plus or minus 0.0000001 degrees
> to get an accurate measurement.

Don't need to measure phase shift to obtain forward and reflected
voltages and powers.

But I think I understand the technique. Whenever the theory would
produce answers with which you might be uncomfortable, rather than
producing those anwsers and attaining a better understanding of the
viability of the theory, you prune the problem space to which the
theory applies. Ergo, not for DC, not for 60 Hz, not for lamp cords,
not for step functions. But the math from the theory works just fine
in all these situations. Try it.

...Keith

4575. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 11:33:00 UTC
From: kd1@sympatico.ca
Message-ID: <3F508B6C.B4106BC0@sympatico.ca>
Source record: 109219

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > So are you saying that like charge does not repel?
>
> No, I'm not saying that at all. In fact, there may not be any charges
> crossing the NET voltage = zero point and there doesn't have to be for
> energy to be flowing in both directions.

This does seem to be the sticking point, doesn't it. Starting with
p = v * i,
i = charge_moved/time,
if no charge moves, there can be no power, and from
p = work/time,
if there is no power, no work is being done,
and if no work is being done, no energy has moved.
Ergo, no energy crosses the boundary.

If you find an error in the above derivation, I will happily allow
you that energy flows in both directions.

> Two waves flowing in opposite
> directions in a constant Z0 environment superpose but have no effect
> on each other. You are continuing to be confused by the NET values.

Actually, I am not confused by NET at all. I contend that NET is the
only thing of importance when determining if energy flows.

> Did you take a look at that Java-driven web page that I posted a couple
> of days ago. If so, I don't see how you could still be confused.

Are you referring to
http://www.mellesgriot.com/products/optics/oc_2_1.htm?

These dudes do seem to have it right. They sum amplitudes to get
the resultant (NET) amplitude and then compute the intensity (power)
from the resultant (NET) amplitude. They do NOT state that energy
flows across a point with zero resultant amplitude nor do they sum
the power (intensity) to determine interference patterns.

> As an analogy, consider two equal magnitude Tsunami waves flowing in
> opposite directions in the ocean. According to you, these waves will
> reflect off of each other. But it is known that those two waves will
> simply flow through each other and continue their original paths
> unabated.

How can you tell whether it reflected, or flowed through?
The look and feel will be the same.

Remember the collision of two identical balls. Superficial examination of the collision might cause one to conclude that the energy was transferred between the balls, especially if you viewed this collision after viewing the collision of a moving ball with a stationary one where energy is indeed transferred. Only by looking at the details of the collision, in particular at the interface where the collision occurs,
and realizing that f * d is always 0 do you learn that no energy was transferred.

Similarly for transmission lines at points where v(t) * i(t) is always 0 and, from the web page, apparently for light as well.

...Keith

4576. Re: QST & Antenna Gain

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 11:43:16 UTC
From: w1rfi@aol.com
Message-ID: <20030830074316.17885.00000083@mb-m01.aol.com>
Source record: 109220

>Wow, that's over five years ago, yet I only first noticed gain numbers
>in an ad earlier this year. Thanks, Danny.

Very few antenna manufacturers have provided the required models of their antennas.

73,
Ed Hare, W1RFI

4577. Re: BPL industry take on why power lines are not antennas

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 11:47:24 UTC
From: w1rfi@aol.com
Message-ID: <20030830074724.17885.00000084@mb-m01.aol.com>
Source record: 109221

>My suggestion to you: double- or triple-check your postings for easy
>stuff like typo's.

We did, but with having to create and run over 100 EZNEC models, document same in a 40+ page technical write-up, do two other technical write-ups, plan the BPL field-trial testing, do the BPL field-trial testing, all on the fastest fuse I have ever seen the FCC put a major issue on, it was inevitable that small errors crept in. Every single publication I know, ARRL or other, contains errors. The fumble-fingered typing of 115 where 135 was intended is just not something that would have been caught in a proofreader's read.

73,
Ed Hare, W1RFI

4578. How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 12:14:02 UTC
From: kd1@sympatico.ca
Message-ID: <3F50950A.BAA3E76E@sympatico.ca>
Source record: 109223

W5DXP wrote:
> W5DXP wrote:
> > You will never understand the present topic unless you understand that
> > EM wave interference doesn't affect the flow of energy in the individual
> > waves. That is true for light and RF.
>
> I should have added: "in the absence of a physical impedance discontinuity."
> If a physical impedance discontinuity exists, then of course, the flow of
> energy in the individual waves is affected by reflections.

The statement "in the absence of an impedance discontinuity there are
no reflections" is an oft made assertion which deserves some scrutiny.
Some time back Cecil provided an example which sparked some thinking:

"For instance, in the following two-port network:

source---50 ohm feedline---+---1/2WL 150 ohm feedline---50 ohm load
<snip>
Since a Z0-match exists at '+', the reflection coefficient on the
50 ohm feedline is zero. rho = Sqrt(Pref/Pfwd)"

Temporarily view everything to the right of the "+" as a black box.
When we measure its sinusoidal steady state impedance we obtain a
value of 50 ohms. Connect it to a 50 ohm line, rho is 0 (as
mentioned above) and there are no reflections.

When we open the black box, we find that there is 150 ohm line inside,
rho should be 0.5 and there should be a reflection. (And there isn't,
of course, because the multiple time domain reflections sum to produce
the final steady state reflection of 0).

We have a choice of two rho for this situation:
black box - 0, computed from the surge impedance of the line and
the steady state impedance of the load
open box - 0.5, computed from the surge impedance of the line and
the surge impedance of the load

Since the terminologies are similar, great care must be taken in
discussion to distinguish these two cases, as evidenced in another
thread where a discussion on conjugate matching is being confused
by exactly this.

In any case, what we have in this experiment is a case where there
IS an impedance discontinuity and yet there is no reflection (if
you use the "black box" rho, as is often done).

This, or course, sparks the symmetry question: Can there be a
reflection when there is no impedance discontinuity?

Consider another black box. Measuring the steady state impedance
results in 0. When this black box is attached to a 50 ohm line,
rho is -1 and all of the incident voltage is reflected.

But when we pop the lid, we discover the box consists of a quarter
wave of 50 ohm line terminated in an open circuit.

Similar to the first experiment, and not surprising, there are two
rho available:
black box - -1, computed from the surge impedance of the line and
the steady state impedance of the load
open box - 0, computed from the surge impedance of the line and
the surge impedance of the load

So, if we are allowed to say in the first experiment that rho is 0
despite an impedance discontinuity, we are equally allowed to say
for the second that rho is -1 despite the absence of a discontinuity.

This, quite reasonably, allows us to imagine an interface at any point
in the line (not just at discontinuities) and, knowing the steady
state impedance on the load side of the interface, compute the rho
which will describe the steady state reflection on the generator
side of the interface.

Of course, when not dealing with sinusoidal steady state approximations,
(that is, when dealing in the time domain), only the rho computed from
the surge impedances will be of value.

...Keith

4579. Re: Antenna computor modeling analysis

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 12:25:55 UTC
From: aunwin@insightbb.com
Message-ID: <85ed38d.0308300425.16b25b68@posting.google.com>
Source record: 109222

Richard Clark <kb7qhc@comcast.net> wrote in message
news:<2suvkvkmo5h079n9l4vf8fer2ca8o68d2c@4ax.com>...
> On 29 Aug 2003 13:10:55 -0700, aunwin@insightbb.com (Art Unwin KB9MZ)
> wrote:
> >I was thinking that it showed a particular high
> >resonance (mechanical?) at that particular point
> > but that is what I want it to represent.
>
> Hi Art,
>
> It appears that Peter's references offers a form of math to satisfy
> your observation:
> >>William C. Elmore and Mark A Heald, "Physics of Waves", first published in
> >>1969, but
> >>most recently published in paperback by Dover Publications, New York, 1985
> >>and
> >>generally available in reprints even today for around US$17.00. A real
> >>bargain.
> >>ISBN: 0-486-64926-1 LCCN: 85-10419.
> or
> >> With compressive-dillutive waves
> >>the "vibrations" occur in the effective density of the medium.
> ...
> >>B. L. N. Kennett, "The Siesmic Wavefield", Cambridge University Press, New
> >>York, NY, 2001. ISBN: 0-521-00663-5.
> >>
> >>But be aware it is full of gratuitous partial differential equations and
> >>tensor analysis. The stress-strain variables of compressible-dillutive
> >>media are expressed as tensors and the partial differential equations are
> >>cast in tensor form.
>
> 73's
> Richard Clark, KB7QHC

Richard
I did not realise it was an "earth shaking event"!
Art

4580. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 12:41:24 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <kxGdnfFt3prkBs2iXTWJkQ@comcast.com>
Source record: 109224

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f502f5d$1_5@corp.newsgroups.com...
> Tarmo Tammaru wrote:
> > ...and all reflected power was re reflected.
>
> Since the re-reflected waves are coherent with the source waves,
> how do you know that? Would the amplitude of ghosting in a TV signal
> support that assertion?
> --
> 73, Cecil http://www.qsl.net/w5dxp

There was no actual power generated by the source. Some people seem to think that *power* dissipated by the resistor due to current flowing in one direction and *power* caused by current in the other direction cancel. Of course, the experiment was moot, or 1/4 wave stubs wouldn't work. Ghosts live in the realm of pulses, where things always work unambiguously. In logic design, you often terminate the source, so there is only one reflection. You can't series terminate the load, because the input impedance is several K; you can't shunt terminate the load because the source can't deliver enough current, although I have done things like shunt terminating the load with a Zo resistor in series with 10PF or so.

Tam/WB2TT

4581. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 12:57:32 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <0b14b.5069$Om1.1065@newsread2.news.atl.earthlink.net>
Source record: 109225

Roy:

[snip]
"Roy Lewallen" <w7el@eznec.com> wrote in message
news:vl04c0knab338b@corp.supernews.com...
> Thanks for the most interesting discussion of slinkys, "ether", and
> seismology. But I'm a little vague on what you mean by "vibrations".
> You're describing a field whose orientation isn't necessarily at a right
> angle (transverse) to the direction of propagation (as in a TE or TM
> mode wave), yet whose "vibrations" are nevertheless at a right angle to
> the direction of propagation. So the "vibrations" are in a different
> direction than the field. I'd like to learn more about this phenomenon,
> but I can't find "vibrations" in the indexes of any of my
> electromagnetics texts. Do they have another name?
>
> Roy Lewallen, W7EL
[snip]

Vibrations = oscillations

An instance where compressional-dilative waves might occur in electromagnetic propagation and where those compressional vibrations terms could be added to the Maxwell-Heaviside equations might be that of electromagnetic propagation through "light ion" plasmas [ionized gases] where the ions could physically respond essentially instantaeously to the passing waves and the distance between ions and hence the media properties becomes a function of the electromagnetic fields. The effective mu and epsilon of the media changing instantaneously in response to the propagating fields, in turn changing the waves, etc... just as for compression acoustic wave propagating in a compressible gas. This effect is probably infinitesimal for "heavy ion" plasmas and might be perceptable for "light ion" plasmas. I wonder if any readers of this NG have any experience with propagation in plasmas and can share with us if they use compression-dilutive terms to augment the Maxwell-Heaviside equations in the analysis.

I presume that the NEC code that you use in EZNEC to integrate the Maxwellian equations does not support plasma propagation analysis. Perhaps someone knows of a version of NEC that does. I'd guess that folks at Lawrence Livermore and at NASA are interested in such problems. I'd be curious to know if they use augmented versions of Maxwell-Heaviside equations.

Another, arcane, far fetched, and impractical example of compressional-dillutive vibrations in em waves that I can think of could be imagined as a system wherein em waves travel in a waveguide system where the

dimensions of the system [walls of the waveguide] are such that they can move in and out instantaneously in response to the passing waves thus alternately confining and expanding the dimensions of the guide relative to the wavelength of the passing waves, it might be imagined that such action could induce a wave shortening and lengthening effect on the passing waves which is what compression-dillution waves are.

Thoughts, comments?

--
Peter K1PO
Indialantic By-the-Sea, FL.

4582. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 12:59:39 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <%c14b.5076$Om1.3194@newsread2.news.atl.earthlink.net>
Source record: 109226

Tom:

[snip]
>
> Yes, "vibes." I think Peter is regressing back to the '60's.
> 73,
> Tom Donaly, KA6RUH
[snip]

Hmmm.... I remember Angela fondly, and how we used to dance to "I just wanna hold your hand..."

Now just where did I put those old Beatles albums?

--
Peter K1PO
Indialantic By-the-Sea, FL

4583. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 13:08:59 UTC
From: "Peter O. Brackett" <ab4bc@ix.netcom.com>
Message-ID: <LI14b.5083$Om1.229@newsread2.news.atl.earthlink.net>
Source record: 109227

Cecil:

[snip]
>
> Heh, heh, not wearing the particle physics hat today, Peter? :-)
> --
> 73, Cecil http://www.qsl.net/w5dxp
[snip]

Say did you order your copy of "Entanglement" yet?

You will really enjoy that book, a great read about all of the progress in QED physics throughout the nineties, and the attempts and successes of the modern generation of theoretical and experimental physicists at answering Einstein's objections to instantaneous action at a distance.

Although dated, and not up to date with the latest laboratory experiments and theoretical developments on entanglement, another great layman's introduction to QED is Feynman's book named simply "QED". It is a sort of laymans explanation of QED by Feynman himself which parallels his more detailed and mathematical development of QED in "The Feynman Lectures on Physics", but without all the math. I think Feynman's "QED" is still in print in paperback. I have a copy, but I saw in on the rack at Barnes and Noble a few weeks ago.

As you know every quantum, including bigger chunks of matter such as yourself has an inherent frequency associated with it, and so from time to time I have often wondered...

What is Cecil's wavelength and can I get on it?

;-)

--
Peter K1PO
Indialantic By-the-Sea, FL

4584. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 13:49:33 UTC
From: Mark Sheffield <sheffield@earthlink.net>
Message-ID: <vja1lv8nu9a8lhf9fqtb13jh63uhm2qdou@4ax.com>
Source record: 109228

Irv & Mike - the radials don't have to be tuned? Or - the real quesion - they aren't random length, you're still talking about cutting a bunch for 80M, a bunch for 40M and a bunch for 20M (or something like that) and then fanning out all the radials from the base, correct?

Question - if and when I put up a vertical, how close can it be to a tree, the house, etc, if ground-mounted?

tnx - Mark

On Thu, 28 Aug 2003 16:29:22 +0000, Mike Luther <mike.luther@ziplog.com> wrote:

>Very good advice, Irv
>
>Irv Finkleman wrote:
>
>>If you plan to be at your QTH for a while, it's not difficult to
>>lay untuned radials along the ground, or bury them down a half inch
>>or so with a pizza cutter. I laid mine in the grass and after a
>>couple of months you don't even see them anymore -- the mower goes
>>right over them. If you are concerned, you can nail them down
>>using hairpins. They not only serve as a great base for a vertical,
>>but they also provide a very good rf ground. They don't have to be
>>any special length -- its the quantity that counts.
>>
>>

4585. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 15:03:36 UTC
From: "G.Balinski" <Nospam@nospam.com>
Message-ID: <c134b.308581$uu5.63853@sccrnsc04>
Source record: 109229
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

I have done side by side comparison of a 102" whip tuned by an AH-4 equivalent vs. a resonant style antenna such as the Hustler series. On 40m, There was a repeatable 1 "S"unit difference in rx signal and tx signal strength. I did not have the chance to check it on other bands, but the difference would probably decrease as you got closer to 10m, and increase as you went to 75/80m

Bottom line is that if you want/need performance in a mobile environ, use some sort of resonant antenna, especially on the lower bands. However, a 102" whip will do for convenience. Or you can split the difference and get a screw-driver style antenna.

73
K1NR

"sideband" <AINO8SPAMW@cac.net> wrote in message
news:BAq1b.29668$Vx2.13458773@newssvr28.news.prodigy.com...
> Try Radio Shack for the 102" whip.. they still sell em
>
> Oh, and for kicks, you might want to chuckle at my insanity while
> looking at a similar setup at http://www.csotbs.org/ai8w/TruckPics
>
> I sold that truck, and haven't had a chance to reconstruct that system
> on the new truck yet, but it's coming.
>
> 73 de AI8W, Chris
>
> Nitespark wrote:
>
> >
> >
> > Bob Cook wrote:
> >
> >> Re 20 meter hamstick and AH-4:
> >>
> >> Do you mean you are using an AH-4 to tune the 20 m hamstick
> >> to other bands? If so, to which bands and what kind of SWR's?
> >>
> >> Bob K9KKY
> >
> >
> > I have used it on 40 meters successfully and on 15 and 10. The SWR is
> > perfect. The efficiency of the system is not so good. I can do the
> > same thing with my Webster BandSpanner. My biggest problem is being

> > mobile when there is a band opening. Havn't found that many on 15 & 10
> > recently....at least when I have been in the car.
> >
> > With the AH-4, it really doesn't matter what I put back on the antenna
> > mount. It will find he L/C combination and match it to the radio
> > (within reason of course...obviously can't use a 1/4 wave UHF spike on
> > 40 meters). I have been looking around for a 102" CB whip. That would
> > work as well as anything.
> >
>

4586. Re: Ground system for a vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 15:39:48 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030830113948.14300.00000171@mb-m12.aol.com>
Source record: 109230

Dave, N3HE writes:

>On the flags and pennants, I've read the stuff on various websites. The
>stumbling-block for me is that nobody around here (Cincinnati) has any
>experience, good or bad, or they ain't talkin', and I gather that these
>devices are really site-sensitive wrt soil conductivity.

I have not built them, just followed discussions, mostly on TopBand reflector.
K6SE and other exchanged lot of information.
The soil conductivity impact would be as with verticals (it is in a sense
phased verticals), good soil will enhance low angle, stretch the lobe down to
horizon. Important thing is to use baluns on the coax to maintain max clean
pattern to eliminate effect of feedline for good rejection.
Check TopBand reflector archives, I you have not seen them.

Yuri

4587. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 15:44:16 UTC
From: Irv Finkleman <finkirv@shaw.ca>
Message-ID: <3F50C5D7.41921F3C@shaw.ca>
Source record: 109231

Mark Sheffield wrote:
>
> Irv & Mike - the radials don't have to be tuned? Or - the real
> quesion - they aren't random length, you're still talking about
> cutting a bunch for 80M, a bunch for 40M and a bunch for 20M (or
> something like that) and then fanning out all the radials from the
> base, correct?
>
> Question - if and when I put up a vertical, how close can it be to a
> tree, the house, etc, if ground-mounted?
>
> tnx - Mark
>
> On Thu, 28 Aug 2003 16:29:22 +0000, Mike Luther
> <mike.luther@ziplog.com> wrote:
>
> >Very good advice, Irv
> >
> >Irv Finkleman wrote:
> >
> >>If you plan to be at your QTH for a while, it's not difficult to
> >>lay untuned radials along the ground, or bury them down a half inch
> >>or so with a pizza cutter. I laid mine in the grass and after a
> >>couple of months you don't even see them anymore -- the mower goes
> >>right over them. If you are concerned, you can nail them down
> >>using hairpins. They not only serve as a great base for a vertical,
> >>but they also provide a very good rf ground. They don't have to be
> >>any special length -- its the quantity that counts.
> >>
> >>

If you are going to tune radials, they have to be above ground
level by a distance that makes setting up a vertical a much more
complex matter. The idea of tuned radials allows you to operate with
as few as three and provide an effective rf balance for the antenna.
The main idea of the radials, tuned or untuned is an rf ground to
act as the phantom half of the vertical. They need not be tuned, but
if you lay them on or below the ground you need more of them. On the
ground, what would have been a tuned radial, interacts with the soil and
detunes, so the length becomes unimportant. You provide the ground by
using more radials of various lengths, and they need not be spread out
as 'radially' as the pictures show -- but the more the merrier, and the
more effective they will be.

One of my verticals was four feet from the house. I fired an arrow
into the air, so to speak, but my arrows (signals) landed into a lot
of very interesting places (other stations).

Some lucky guys have their verticals mounted right at a tree and use
it for the vertical support.

Hope this is clearer than mud :-)

Irv
--

Diagnosed Type II Diabetes March 5 2001
Beating it with diet and exercise!
297/215/210 (to be revised lower)
58"/43"(!)/44" (already lower too!)

Visit my HomePage at http://members.shaw.ca/finkirv/
Visit my very special website at http://members.shaw.ca/finkirv4/
Visit my CFSRS/CFIOG ONLINE OLDTIMERS website at http://members.shaw.ca/finkirv5/

Irv Finkleman,
Grampa/Ex-Navy/Old Fart/Ham Radio VE6BP
Calgary, Alberta, Canada

4588. Re: Another DXCC question ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 15:45:15 UTC
From: k3bu@aol.comnoSaddam
Message-ID: <20030830114515.14300.00000172@mb-m12.aol.com>
Source record: 109232

>
>I'm sending in for the regular DXCC and a few things are unclear
>to me:
>
>1) Would a CY9AA (St. Paul Island) from 1997 on 160 meters
>count?
>Thought I read somewhere that 160 meters doesn't count on
>the regular DXCC.
>
No problem, all HF bands are allowed for basic DXCC.

>2) I have a 3E1DX from Panama. But on the list it doesn't
>have 3E1 for Panama listed. Only HO-HP#* is listed for
>Panama. It was a CQWW contest in 1997. Am I out of luck?
>
No problem, special prefix.

>3) Have a 4N7DW from Yugoslavia from 1993. Once again
>this prefix isn't listed on the ARRL list for Yugo (YT prefix is)
>Out of luck??
>

Same, no problem.

>4) I have a Pitcairn Island VR6BB from 1993. VP6 is now
>listed as being Pircairn Island. VR is now Hong Kong.
>What gives with this one??
>

Same, no problema.

>5) I have a HA5-350 from Hungary from 1996. Not allowed?
>

Looks like SWL card? If not, then no problem.

From time to time some countries use special prefixes that are allocated to
that country. As long as the station is on land and in particular country,
there is no problem. Only some operations - DXpeditions that did not provide
proper documentation, would not be credited.

Yuri

4589. Re: Another DXCC question ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 16:01:34 UTC
From: Caveat Lector <CL@latin.com>
Message-ID: <yT34b.21995$S_.15031@fed1read01>
Source record: 109233

"carter" <cartw@netart.com> wrote in message
news:3F5022DB.84E55202@netart.com...
> I'm sending in for the regular DXCC and a few things are unclear
> to me:
>---
> 1) Would a CY9AA (St. Paul Island) from 1997 on 160 meters
> count?
> Thought I read somewhere that 160 meters doesn't count on
> the regular DXCC.

160 Meters counts as we told u before. Please see URL:
http://www.arrl.org/awards/#dxcc
sez
The premier operating award in all of Amateur Radio is the DX Century Club. The basic certificate (which can be obtained in several categories--Mixed modes, Phone, CW, RTTY, Satellite, 160, 80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 meters) is awarded for working and confirming at least 100 entities on the ARRL DXCC List.

> 2) I have a 3E1DX from Panama. But on the list it doesn't
> have 3E1 for Panama listed. Only HO-HP#* is listed for
> Panama. It was a CQWW contest in 1997. Am I out of luck?

Many countries have a primary and a secondary prefix (the later often used for contests and special events).
In general, the ARRL DXCC list has primary prefixes not secondary. - The complete prefix allocations can be found at
URL: http://www.arrl.org/awards/dxcc/itucalls.html
Or
http://ac6v.com/prefixes.htm

There u will see that Panama prefixes are HOA-HPZ Panama (Republic of)
(Also See H3, H8, H9, 3EA-3FZ)
So it is a good Prefix and contact

>
> 3) Have a 4N7DW from Yugoslavia from 1993. Once again
> this prefix isn't listed on the ARRL list for Yugo (YT prefix is)
> Out of luck??
In general, the ARRL DXCC list has primary prefixes not secondary. - The complete prefix allocations can be found at
URL: http://www.arrl.org/awards/dxcc/itucalls.html
Or
http://ac6v.com/prefixes.htm
4NA-4OZ Yugoslavia (Federal Republic of) (also See YT-YU , YZ)

Should count as Yugoslavia

>
> 4) I have a Pitcairn Island VR6BB from 1993. VP6 is now
> listed as being Pircairn Island. VR is now Hong Kong.
> What gives with this one??
VR6 WAS Pitcairn - Now VR is China-- VP6 is the new Pitcairn Is Prefix Hong Kong was a British colony for many years --- but became the Hong Kong Special Administrative Region (SAR) of China on 1 July 1997. So they changed prefixes at about that time.
Now VRA-VRZ China (People's Republic of) -Hong Kong and VP6=Pitcarin
Pitcarin prefix got caught up in the change.

> ---

> 5) I have a HA5-350 from Hungary from 1996. Not allowed?
Sounds like a SWL card -- submit it anyway -- the DX desk allow or disallow it.
>
>

4590. Re: Another DXCC question ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 16:05:33 UTC
From: Caveat Lector <CL@latin.com>
Message-ID: <iX34b.22013$S_.16867@fed1read01>
Source record: 109234

BTW Carter a better place to ask questions about DX is rec.radio.amateur.dx

"Caveat Lector" <CL@latin.com> wrote in message
news:yT34b.21995$S_.15031@fed1read01...
>
> "carter" <cartw@netart.com> wrote in message
> news:3F5022DB.84E55202@netart.com...
> > I'm sending in for the regular DXCC and a few things are unclear
> > to me:
> >----------
> > 1) Would a CY9AA (St. Paul Island) from 1997 on 160 meters
> > count?
> > Thought I read somewhere that 160 meters doesn't count on
> > the regular DXCC.
>
> 160 Meters counts as we told u before. Please see URL:
> http://www.arrl.org/awards/#dxcc
> sez
> The premier operating award in all of Amateur Radio is the DX Century
Club.
> The basic certificate (which can be obtained in several categories--Mixed
> modes, Phone, CW, RTTY, Satellite, 160, 80, 40, 30, 20, 17, 15, 12, 10, 6
> and 2 meters) is awarded for working and confirming at least 100 entities
on
> the ARRL DXCC List.
> ----------
> > 2) I have a 3E1DX from Panama. But on the list it doesn't
> > have 3E1 for Panama listed. Only HO-HP#* is listed for
> > Panama. It was a CQWW contest in 1997. Am I out of luck?
>
> Many countries have a primary and a secondary prefix (the later often used
> for contests and special events).
> In general, the ARRL DXCC list has primary prefixes not secondary. - The
> complete prefix allocations can be found at
> URL: http://www.arrl.org/awards/dxcc/itucalls.html
> Or
> http://ac6v.com/prefixes.htm
>
> There u will see that Panama prefixes are HOA-HPZ Panama (Republic of)
> (Also See H3, H8, H9, 3EA-3FZ)
> So it is a good Prefix and contact
> ----------
> >
> > 3) Have a 4N7DW from Yugoslavia from 1993. Once again

> > this prefix isn't listed on the ARRL list for Yugo (YT prefix is)
> > Out of luck??
> In general, the ARRL DXCC list has primary prefixes not secondary. - The
> complete prefix allocations can be found at
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> Or
> http://ac6v.com/prefixes.htm
> 4NA-4OZ Yugoslavia (Federal Republic of) (also See YT-YU , YZ)
> Should count as Yugoslavia
> ---
--
> ---
> >
> > 4) I have a Pitcairn Island VR6BB from 1993. VP6 is now
> > listed as being Pircairn Island. VR is now Hong Kong.
> > What gives with this one??
> VR6 WAS Pitcairn - Now VR is China-- VP6 is the new Pitcairn Is Prefix
Hong
> Kong was a British colony for many years --- but became the Hong Kong
> Special Administrative Region (SAR) of China on 1 July 1997. So they
changed
> prefixes at about that time.
> Now VRA-VRZ China (People's Republic of) -Hong Kong and VP6=Pitcarin
> Pitcarin prefix got caught up in the change.
>
>
> ---
> ---
> > 5) I have a HA5-350 from Hungary from 1996. Not allowed?
> Sounds like a SWL card -- submit it anyway -- the DX desk allow or
disallow
> it.
> >
> >
>
>

4591. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 16:20:10 UTC
From: Charles Wittnam <wittnam@bresnan.net>
Message-ID: <_844b.306640$YN5.209838@sccrnsc01>
Source record: 109235

Danny:
I think the you have raised a valid concern about the
balun. This is something I did not fully appreciate before I made my
decision to try this. Cebik makes the same point and suggests if you use
this antenna you might be better off using a parallel feed line with a
tuner, and no balun. I will make the cuts and scale this antenna down
preserving the same ratio of offset. Before I hang this permanently I will
need to get a better feel for its performance and limitations. I may do a
head to head test with another antenna set up and see. I was intrigued by
W5DXP's "completed inverted L", which is a full wave loop variant.
The major benefit of this whole experience for me has been the amount of
research it has instigated. I also have a better understanding of antenna
options. I have come to the following conclusions about commercial
"windoms".(which really are folded OCF dipole antennas).

1. The claims about performance are probably overblown due to:
a. Faulty assumptions about the degree the "vertical
radiation" of the feedline plays in modifying performance.
b. These incorrect assumptions being placed into antenna
simulation programs and printed as truth.
c. Placebo effect: I suspect some of the testimonials
are due to expecting better performance. On some occassions the
improvement may actually be due to hanging these antennas at "recommended
heights". Of course your dipole would do better up there too.
2. The unbalanced feedline makes RF in the shack a common problem since
your "vertical radiator" can be coming into your shack, depending upon
whether you have taken the necessary precautions to prevent this.
3. You are almost always better off making your own antenna.
4. I do NOT recommend dealing with any amateur supply company that
routinely will not return inquiry calls.
5. Read up on OCF dipoles as much as possible before building or buying
one.

I will keep you informed of my
progress. I have truly appreciated the input. I hope this discussion helps
some other hams who are contemplating purchasing commercially made
"Windoms."

Charlie KD7HU

"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
news:5f20lvs86vagudgv7f7r27p059gf71uoi9@4ax.com...
> One thing that as always bothered me is that antenna is not balanced
> with that lop-sided feed. Further-the-more that assumed 300-Ohm
> impedance has a pretty hefty reactive component. As baluns like

> resistive loads I would question just how well the balun works under
> that condition?
>
> I too have modeled the antenna and agree that the claims made
> regarding feedline's radiation contributing to a strong vertical
> component is over stated to say the least.
>
> Good luck with your cut and try.
>
> 73
> Danny, K6MHE
>
>
>
> On Sat, 30 Aug 2003 02:02:46 GMT, "Charles Wittnam"
> <wittnam@bresnan.net> wrote:
>
> >
> > That is probably what I am going to do. I became a
> >little more anxious after I read L.B. Cebik's articles on OCF dipole
> >antennas, "From the Ground Up." Things are a little bit more
complicated
> >than I thought. Most baluns used in OCFs are 4/1. I have have included a
> >graph from his article .First of all, the calculations used to design
OCFs
> >are supposed to estimate the 300 ohm impedance point. These are always
a
> >rough estimate since as you get further from the center of the antenna
it
> >goes up exponentially. When you factor in nearby objects, your radiating
> >feedline, and antenna height the calculated 300 ohm point can be in a
> >different area altogther. A 50% error in impedance result with a 5%
> >shift in the 300 ohm point, which on a 40 meter OCF would be about three
> >feet. More recently some of the 40meter OCF builders (I think the 40
> >meter "Carolina Windom" would be an example), have tried to hit the
> >flatter part of the curve by using a different offset calculation.
Instead
> >of D3/L=.167 for the 300 ohm point they used D1/L=.38 and D2/L= .62
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> >a 100ohm point. They are using a 2:1 balun. In the inclosed info that
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> >with the antenna it says it is using a 1:1 balun which I sincerely doubt.
> >So I measured my antenna and the offset is closer to the second formula,
> >than the first so I was confused.. If I cut it up and it did not work
well
> >and I knew what the balun was I would know which part of the curve (
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> >the antenna) to head for! . So you can understand my intial reluctance
to

> >act. Perhaps this is being overly cautious. You get that way when you are
> >given a "1:1" balun placed in the position where you would put 2:1 in
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> >antenna that usually uses a 4:1 AND the company does not answer
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> >about their product.
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> > I would highly recommend Cebik's article series on OCF antennas, in
> >which he debunks a lot of their claims, especially the "vertical
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> >aspect of the feedline and the "yagi" performance. He basically argues
> >that these claims are being backed up by overly simplified assumptions
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> >the antenna being plugged into antenna modeling programs. He believes
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> >are no different than dipoles really. For my purposes I wanted an
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> >system with an offset feed because I can hide the feedline coax easier
> >given my available tree locations. (and keep the XYL happier...) This
> >antenna has a black balun and black insulated flexible wire which really
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> >the situation. This is the first time I have run into an amateur supply
> >company that has behaved so poorly. It was a rude awakening. I may just
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> >what you suggested. I hope I have the 4 to balun since I have other uses
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> >baluns or try a different approach, such as using a parallel feedline
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> >not using the balun. We will see.
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> >"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
> >news:8plvkv4tqdhja7t1faok0s33curesbe3b4@4ax.com...
> >> On Fri, 29 Aug 2003 21:37:00 GMT, "Charles Wittnam"
> >> <wittnam@bresnan.net> wrote:
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> >to
> >> >war with Antennas and More with my credit card company. They shipped
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> >> >looking for a 40 meter OCF dipole and they sent me a 80 meter OCF,
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> >> >was not what I ordered because of space limitations.
> >> >If I could cut the thing down to use on 40 meters then I can save the
> >> >inevitable hassle of dealing with this outfit and going to war with
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> >> >commercial builders of the OCF dipoles use a 2/1 balun for their 40
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> >> >antennas since they are trying to match a different impedance spot on
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> >> >shorter antenna., hence it is not necessarily the case that you can
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> >> >them down. Any thoughts?
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> >> Why not just scale the antenna? That's is to say, in your case, reduce
> >> the length of the wires by a factor of .
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> >> Danny, K6MHE
> >>
> >>
> >
>

4592. Re: Another DXCC question ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 16:39:25 UTC
From: carter <cartw@netart.com>
Message-ID: <3F50D33D.3D6F9CCA@netart.com>
Source record: 109237

thanks!!

Caveat Lector wrote:

> "carter" <cartw@netart.com> wrote in message
> news:3F5022DB.84E55202@netart.com...
> > I'm sending in for the regular DXCC and a few things are unclear
> > to me:
> >---
> > 1) Would a CY9AA (St. Paul Island) from 1997 on 160 meters
> > count?
> > Thought I read somewhere that 160 meters doesn't count on
> > the regular DXCC.
>
> 160 Meters counts as we told u before. Please see URL:
> http://www.arrl.org/awards/#dxcc
> sez
> The premier operating award in all of Amateur Radio is the DX Century Club.
> The basic certificate (which can be obtained in several categories--Mixed
> modes, Phone, CW, RTTY, Satellite, 160, 80, 40, 30, 20, 17, 15, 12, 10, 6
> and 2 meters) is awarded for working and confirming at least 100 entities on
> the ARRL DXCC List.
> ---
> > 2) I have a 3E1DX from Panama. But on the list it doesn't
> > have 3E1 for Panama listed. Only HO-HP#* is listed for
> > Panama. It was a CQWW contest in 1997. Am I out of luck?
>
> Many countries have a primary and a secondary prefix (the later often used
> for contests and special events).
> In general, the ARRL DXCC list has primary prefixes not secondary. - The
> complete prefix allocations can be found at
> URL: http://www.arrl.org/awards/dxcc/itucalls.html
> Or
> http://ac6v.com/prefixes.htm
>
> There u will see that Panama prefixes are HOA-HPZ Panama (Republic of)
> (Also See H3, H8, H9, 3EA-3FZ)
> So it is a good Prefix and contact
> ---
> >
> > 3) Have a 4N7DW from Yugoslavia from 1993. Once again
> > this prefix isn't listed on the ARRL list for Yugo (YT prefix is)
> > Out of luck??
> In general, the ARRL DXCC list has primary prefixes not secondary. - The
> complete prefix allocations can be found at

> URL: http://www.arrl.org/awards/dxcc/itucalls.html
> Or
> http://ac6v.com/prefixes.htm
> 4NA-4OZ Yugoslavia (Federal Republic of) (also See YT-YU , YZ)
> Should count as Yugoslavia
> ---
> ---
> >
> > 4) I have a Pitcairn Island VR6BB from 1993. VP6 is now
> > listed as being Pircairn Island. VR is now Hong Kong.
> > What gives with this one??
> VR6 WAS Pitcairn - Now VR is China-- VP6 is the new Pitcairn Is Prefix Hong
> Kong was a British colony for many years --- but became the Hong Kong
> Special Administrative Region (SAR) of China on 1 July 1997. So they changed
> prefixes at about that time.
> Now VRA-VRZ China (People's Republic of) -Hong Kong and VP6=Pitcarin
> Pitcarin prefix got caught up in the change.
>
> > ---
> ---
> > 5) I have a HA5-350 from Hungary from 1996. Not allowed?
> Sounds like a SWL card -- submit it anyway -- the DX desk allow or disallow
> it.
> >
> >

4593. Re: Another DXCC question ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 16:39:35 UTC
From: carter <cartw@netart.com>
Message-ID: <3F50D347.D3B742FF@netart.com>
Source record: 109238

thanks!!

Yuri Blanarovich wrote:

> >
> >I'm sending in for the regular DXCC and a few things are unclear
> >to me:
> >
> >1) Would a CY9AA (St. Paul Island) from 1997 on 160 meters
> >count?
> >Thought I read somewhere that 160 meters doesn't count on
> >the regular DXCC.
> >
> No problem, all HF bands are allowed for basic DXCC.
>
> >2) I have a 3E1DX from Panama. But on the list it doesn't
> >have 3E1 for Panama listed. Only HO-HP#* is listed for
> >Panama. It was a CQWW contest in 1997. Am I out of luck?
> >
> No problem, special prefix.
>
> >3) Have a 4N7DW from Yugoslavia from 1993. Once again
> >this prefix isn't listed on the ARRL list for Yugo (YT prefix is)
> >Out of luck??
> >
>
> Same, no problem.
>
> >4) I have a Pitcairn Island VR6BB from 1993. VP6 is now
> >listed as being Pircairn Island. VR is now Hong Kong.
> >What gives with this one??
> >
>
> Same, no problema.
>
> >5) I have a HA5-350 from Hungary from 1996. Not allowed?
> >
>
> Looks like SWL card? If not, then no problem.
>
> From time to time some countries use special prefixes that are allocated to
> that country. As long as the station is on land and in particular country,
> there is no problem. Only some operations - DXpeditions that did not provide
> proper documentation, would not be credited.
>

> Yuri

4594. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 16:58:55 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50d956_4@corp.newsgroups.com>
Source record: 109236

Richard Clark wrote:
> Simply going to the
> bench would be adequate for amateurs, guessing would eclipse the
> efforts of everyone else. ;-)

I'm ready to go to the bench but I don't know how to separate the
incident reflected power that is re-reflected from the source from
the generated power. That's what I am asking. How does one separate
those two coherent superposed forward waves?

> It should seem obvious that the power reflected at the source
> interface is governed by the standard mechanics no one wishes to
> impart to the source.

I agree that the source obeys the wave reflection model rules. The
fly in the ointment is the unknowable source impedance encountered
by the incident reflected waves.

> In other words the power returning to the
> source will be reflected through the same mechanics it met at the
> mismatched load, with the "exact" value varying only by the reflection
> coefficient of the source mismatch and the power incident upon it. As
> the line presents a media of 50 Ohms, and the source presents a 100
> Ohm discontinuity, ...

I must have missed how you know the source presents a 100 ohm impedance
to incident reflected waves. Do you have a 100 ohm pad between the
transmitter output and the transmission line?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4595. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 17:02:44 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50da3a$1_4@corp.newsgroups.com>
Source record: 109239

Ian White, G3SEK wrote:
> I believe you have specified more numbers than you can actually know.

That's the whole point, Ian. Exactly how are those things knowable
if they give identical readings? I could argue that either of those
conditions exist and you cannot prove otherwise. There are probably
an infinite number of configurations that will yield identical
measurements. What I don't understand is how any of them can be
knowable.
--
73, Cecil http://www.qsl.net/w5dxp

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4596. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 17:11:50 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50dc5c$1_4@corp.newsgroups.com>
Source record: 109240

kd1@sympatico.ca wrote:

> W5DXP wrote:
>
>>Jim Kelley wrote:
>>>Nodes and zero crossings aren't necessarily the same thing.
>>
>>They are for standing waves on lossless unterminated lines,
>>by definition.
>
> I think not. Standing waves are spatial. At certain points
> on the line the (NET) voltage is always zero: nodes.

For the infinite number of times a snapshot of the voltage is
not zero, the node *IS* a zero-crossing point. That is more than
obvious from the JAVA applets on this web page.

http://www.gmi.edu/~drussell/Demos/superposition/superposition.html#standing

> In an ideal line terminated by Zo, ...

That configuration is not covered by my statement above which
applies only to standing waves on lossless unterminated lines.
--
73, Cecil http://www.qsl.net/w5dxp

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4597. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 17:26:39 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50dfd6_4@corp.newsgroups.com>
Source record: 109241

kd1@sympatico.ca wrote:
> ... assume 100 Ohms for the lamp cord:

Rash assumption. Please prove that six feet of zip cord
exhibits a Z0 of 100 ohms to 60Hz signals.

> Of course, we were discussing sinusoidal steady state for which
> there will be no echoes. Echoes only happen when the line energy
> state is changing.

In reality, there is no such thing as sinusoidal steady-state
and noise in the system cannot be eliminated. The noise can
be used to prove that echoes (reflections) are still happening.
So nothing magic happens at sinusoidal steady-state. The wave
reflection model does NOT magically become dysfunctional at
steady-state.

> But the math from the theory works just fine
> in all these situations. Try it.

I know the math works *IF* you can define the boundary conditions.
Assuming that 50 ohm coax exhibits a Z0 of 50 ohms at 60 Hz is
a rash assumption.
--
73, Cecil http://www.qsl.net/w5dxp

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4598. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 17:38:51 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50e2b2_4@corp.newsgroups.com>
Source record: 109242

kd1@sympatico.ca wrote:

> W5DXP wrote:
>
>>kd1@sympatico.ca wrote:
>>>So are you saying that like charge does not repel?
>>
>>No, I'm not saying that at all. In fact, there may not be any charges
>>crossing the NET voltage = zero point and there doesn't have to be for
>>energy to be flowing in both directions.
>
> This does seem to be the sticking point, doesn't it.

There is no sticking point. It is all explained in _Fields_and_Waves_...
by Ramo, Whinnery, and Van Duzer. It is also explained in _Optics_,
by Hecht.

> If you find an error in the above derivation, I will happily allow
> you that energy flows in both directions.

That a forward Poynting vector and a reflected Poynting vector exists
is not enough for you? Here's my argument analogous to yours:

My GMC pickup is white. Until you can prove my GMC pickup is not white,
your argument is invalid. Your above argument is just as irrelevant
as the color of my pickup.

> Actually, I am not confused by NET at all. I contend that NET is the
> only thing of importance when determining if energy flows.

What about the forward Poynting vector and the reflected Poynting vector?
Net is the thing to consider if all you are worried about is net energy.
Net doesn't hack it when you take a look at the forward and reflected
Poynting vectors.

> How can you tell whether it reflected, or flowed through?
> The look and feel will be the same.

Not exactly. Each Tsunami has its own modulation signature. Many, many
experiments over hundreds of years have proved that waves flow right
through each other.

> Similarly for transmission lines at points where v(t) * i(t) is always
> 0 and, from the web page, apparently for light as well.

You really believe that the energy in a bright interference ring is
trapped between the dark rings by some magical force that exists in
your mind? You really need to read the superposition and interference

chapters in _Optics_.
--
73, Cecil http://www.qsl.net/w5dxp

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4599. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 17:42:03 UTC
From: Dan Richardson <ChangeThisToCallSign@mendolink.com>
Message-ID: <s2o1lv4er41a8opjpbqg4u6en05n327o71@4ax.com>
Source record: 109244

Charles,

Looks like you've got a good handle on things. I have used an OFC, fed
with ladder line. Nothing particularly outstanding in its performance.
However, as to common mode current: running around 100 watts I
experienced no problems, but when I bumped up the power to about
600-watts all hell broke loose. My computer, the TV, stereo, touch
lights and just about any thing else electronic went wild. And I use a
pretty good single point RF ground system here. So be prepared that
some "strange things" may happen. <g>

Good luck, nice talking with you.
73,
Danny, K6MHE

On Sat, 30 Aug 2003 16:20:10 GMT, "Charles Wittnam"
<wittnam@bresnan.net> wrote:

> Danny:
> I think the you have raised a valid concern about the
>balun. This is something I did not fully appreciate before I made my
>decision to try this. Cebik makes the same point and suggests if you use
>this antenna you might be better off using a parallel feed line with a
>tuner, and no balun. I will make the cuts and scale this antenna down
>preserving the same ratio of offset. Before I hang this permanently I will
>need to get a better feel for its performance and limitations. I may do a
>head to head test with another antenna set up and see. I was intrigued by
>W5DXP's "completed inverted L", which is a full wave loop variant.
>The major benefit of this whole experience for me has been the amount of
>research it has instigated. I also have a better understanding of antenna
>options. I have come to the following conclusions about commercial
>"windoms".(which really are folded OCF dipole antennas).
>
>1. The claims about performance are probably overblown due to:
> a. Faulty assumptions about the degree the "vertical
>radiation" of the feedline plays in modifying performance.
> b. These incorrect assumptions being placed into antenna
>simulation programs and printed as truth.
> c. Placebo effect: I suspect some of the testimonials
>are due to expecting better performance. On some occassions the
>improvement may actually be due to hanging these antennas at "recommended
>heights". Of course your dipole would do better up there too.
>2. The unbalanced feedline makes RF in the shack a common problem since
>your "vertical radiator" can be coming into your shack, depending upon
>whether you have taken the necessary precautions to prevent this.

>3. You are almost always better off making your own antenna.
>4. I do NOT recommend dealing with any amateur supply company that
>routinely will not return inquiry calls.
>5. Read up on OCF dipoles as much as possible before building or buying
>one.
>
> I will keep you informed of my
>progress. I have truly appreciated the input. I hope this discussion helps
>some other hams who are contemplating purchasing commercially made
>"Windoms."
>
>Charlie KD7HU
>
>
>"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
>news:5f20lvs86vagudgv7f7r27p059gf71uoi9@4ax.com...
>> One thing that as always bothered me is that antenna is not balanced
>> with that lop-sided feed. Further-the-more that assumed 300-Ohm
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>> that condition?
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>> Good luck with your cut and try.
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>> >the antenna) to head for! . So you can understand my intial reluctance
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>> >>
>> >> Danny, K6MHE
>> >>
>> >>
>> >
>>
>

4600. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 17:58:38 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50e755_4@corp.newsgroups.com>
Source record: 109243

kd1@sympatico.ca wrote:
> We have a choice of two rho for this situation:

Correction: We have a choice of two reflection coefficients
each with its own unique definition.

> black box - 0, computed from the surge impedance of the line and
> the steady state impedance of the load

Actually, Sqrt(Pref/Pfwd), the definition of rho.

> open box - 0.5, computed from the surge impedance of the line and
> the surge impedance of the load

Actually, (150-50)/(150+50), the definition of s11.

> In any case, what we have in this experiment is a case where there
> IS an impedance discontinuity and yet there is no reflection (if
> you use the "black box" rho, as is often done).

This is technically not true. The NET reflections are zero. There
are two non-zero component reflections as seen from the s-parameter
equation:

b1 = s11*a1 + s12*a2

These three terms are all reflections. b1 is the NET reflections
toward the source. Since b1 = zero, s11*a1 = -s12*a2, i.e. the two
component reflections are of equal magnitude and opposite phase and
therefore cancel. This is explained in the last three paragraphs on
the Melles-Griot web page.

> So, if we are allowed to say in the first experiment that rho is 0
> despite an impedance discontinuity, we are equally allowed to say
> for the second that rho is -1 despite the absence of a discontinuity.

There is NOT an absence of a discontinuity. The discontinuity is as
large as it can possibly be, an unterminated transmission line. There
is an infinite SWR on the 1/4WL line. The apparent zero impedance
at the input is simply a V/I ratio where Vnet=Vfwd+Vref=0
The forward wave is carrying Vfwd^2*Z0 watts associated with the
forward Poynting vector and the reflected wave is carrying Vref^2*Z0
watts associated with the reflected Poynting vector. A directional
wattmeter will indicate the same thing.

There is NO physical discontinuity at the black box. The only physical
discontinuity is the open end of the stub. That's where 100% of the
reflection action takes place.

--
73, Cecil http://www.qsl.net/w5dxp

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4601. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:01:09 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50e7eb_4@corp.newsgroups.com>
Source record: 109245

Tarmo Tammaru wrote:
> There was no actual power generated by the source.

How do you know? Was it 100% efficient and consumed no
power?
--
73, Cecil http://www.qsl.net/w5dxp

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4602. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:04:34 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50e8b8$1_4@corp.newsgroups.com>
Source record: 109246

Peter O. Brackett wrote:
> Say did you order your copy of "Entanglement" yet?

I'm going to take a look at it first at the Texas A&M library
hopefully next week.

> What is Cecil's wavelength and can I get on it?

Want me to grid dip myself?
--
73, Cecil http://www.qsl.net/w5dxp

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4603. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:10:48 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50ea2f_4@corp.newsgroups.com>
Source record: 109247
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

G.Balinski wrote:
> I have done side by side comparison of a 102" whip tuned by an AH-4
> equivalent vs. a resonant style antenna such as the Hustler series. On
> 40m, There was a repeatable 1 "S"unit difference in rx signal and tx signal
> strength. I did not have the chance to check it on other bands, but the
> difference would probably decrease as you got closer to 10m, and increase as
> you went to 75/80m

As a matter of fact, it was measured on 75m. My 11.5' whip with an SGC-230
tuner was 12dB down from my top-loaded junk box antenna. That's two (or more)
S-units. A 9' whip would be even worse. Why spend all that money on a tuner
that dissipates 94% more power than a tuned 75m mobile antenna that costs
less than the tuner?
--
73, Cecil http://www.qsl.net/w5dxp

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4604. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:15:43 UTC
From: kd1@sympatico.ca
Message-ID: <3F50E9CF.65F36FE@sympatico.ca>
Source record: 109249

W5DXP wrote:
>
> http://www.gmi.edu/~drussell/Demos/superposition/superposition.html#standing

Another web page which correctly uses superposition only for amplitude;
not power.

> > In an ideal line terminated by Zo, ...
>
> That configuration is not covered by my statement above which
> applies only to standing waves on lossless unterminated lines.

True. I had moved on to a different configuration, the one originally
being discussed.

...Keith

4605. Purchasing Ferrite Cores for Balums

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:17:11 UTC
From: yea right <spam@spam.spam>
Message-ID: <pan.2003.08.30.18.17.06.172693@spam.spam>
Source record: 109248

I'm trying to find a place (in the US) to purchase ferrite donuts so I can wind my own balum. Any recommendations?

Also, when looking at manufacturer's websites, there seems to be a selection of chemistry to their cores. Is there one formulation that I'm looking for in particulate?

4606. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:24:58 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50ed80$1_4@corp.newsgroups.com>
Source record: 109250

W5DXP wrote:
> The forward wave is carrying Vfwd^2*Z0 watts associated with the
> forward Poynting vector and the reflected wave is carrying Vref^2*Z0
> watts associated with the reflected Poynting vector.

These, of course, should be Vfwd^2/Z0 and Vref^2/Z0.
--
73, Cecil http://www.qsl.net/w5dxp

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4607. Re: Purchasing Ferrite Cores for Balums

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:31:13 UTC
From: W5DXP <Cecil.A.Moore@ieee.org>
Message-ID: <3f50eef7_4@corp.newsgroups.com>
Source record: 109252

yea right wrote:
> I'm trying to find a place (in the US) to purchase ferrite donuts so I can
> wind my own balum. Any recommendations?
>
> Also, when looking at manufacturer's websites, there seems to be a
> selection of chemistry to their cores. Is there one formulation that I'm
> looking for in particulate?

http://www.amidoncorp.com/ Amidon has an AB240 Balun Kit for about $10.
--
73, Cecil http://www.qsl.net/w5dxp

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4608. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:32:25 UTC
From: "H. Adam Stevens" <solo@totalaccess.net>
Message-ID: <vl1rjigumhddea@corp.supernews.com>
Source record: 109251
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

Hey Cecil
I have both the AT180 and the AH4.
They're on a shelf.
In a closet.
I use a resonant Hustler with a toroidal matching transformer.
I want a screwdriver-type antenna.
73
H.
NQ5H

OB 706 comment: Good radio. Great audio.
Have one in the truck.

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f50ea2f_4@corp.newsgroups.com...
> G.Balinski wrote:
> > I have done side by side comparison of a 102" whip tuned by an AH-4
> > equivalent vs. a resonant style antenna such as the Hustler series. On
> > 40m, There was a repeatable 1 "S"unit difference in rx signal and tx
signal
> > strength. I did not have the chance to check it on other bands, but the
> > difference would probably decrease as you got closer to 10m, and
increase as
> > you went to 75/80m
>
> As a matter of fact, it was measured on 75m. My 11.5' whip with an SGC-230
> tuner was 12dB down from my top-loaded junk box antenna. That's two (or
more)
> S-units. A 9' whip would be even worse. Why spend all that money on a
tuner
> that dissipates 94% more power than a tuned 75m mobile antenna that costs
> less than the tuner?
> --
> 73, Cecil http://www.qsl.net/w5dxp
>
>
>
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4609. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:39:15 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f50f0da_4@corp.newsgroups.com>
Source record: 109253

kd1@sympatico.ca wrote:

> W5DXP wrote:
>
>>http://www.gmi.edu/~drussell/Demos/superposition/superposition.html#standing
>
> Another web page which correctly uses superposition only for amplitude;
> not power.

Nobody is using superposition for power. Do you deny the fact that
two 100W light bulbs put out more irradiance (power) than one?

You argue that there must be reflections at a voltage node. The
above web page indicates such doesn't exist. Those forward and
reflected waves flow smoothly right through each other. Take
another look.
--
73, Cecil http://www.qsl.net/w5dxp

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4610. Re: IC-706MKIIG Comments ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:44:13 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f50f204$1_4@corp.newsgroups.com>
Source record: 109254
Cross-posted to: rec.radio.amateur.equipment,rec.radio.amateur.misc,rec.radio.amateur.antenna

H. Adam Stevens wrote:

> Hey Cecil
> I have both the AT180 and the AH4.
> They're on a shelf.
> In a closet.

To be fair, if all anyone wants to cover mobile is 20m-10m,
an 11.5' whip and an SGC-230 did a remarkable job for me.
--
73, Cecil http://www.qsl.net/w5dxp

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4611. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 18:57:01 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <RVOuaEB9NPU$EAHb@ifwtech.co.uk>
Source record: 109255

W5DXP wrote:
>Ian White, G3SEK wrote:
[Re-inserting my quote from Cecil]
>>>1. The source is generating 100 watts and 20 watts of the 50 watts of
>>>incident reflected power is being re-reflected in phase from the
>>>source.
>>>The forward power meter reads 120 watts. The reflected power meter
>>>reads 50 watts.
>>>
>>>The conventional rule-of-thumb has the source generating (100-30)=
>>>70 watts since it is dissipating 30 watts of reflected power.
>>>
>>>2. The source is generating 110 watts and 10 watts of the 50 watts of
>>>incident reflected power is being re-reflected in phase from the
>>>source.
>>>The forward power meter reads 120 watts. The reflected power meter
>>>reads 50 watts.
>>>
>>>The conventional rule-of-thumb has the source generating (110-40)=
>>>70 watts since it is dissipating 40 watts of reflected power.
>>>
>How can you possibly distinguish between the above two identical
>>>conditions caused by different source impedances?

>> I believe you have specified more numbers than you can actually know.
>
>That's the whole point, Ian. Exactly how are those things knowable
>if they give identical readings? I could argue that either of those
>conditions exist and you cannot prove otherwise. There are probably
>an infinite number of configurations that will yield identical
>measurements. What I don't understand is how any of them can be
>knowable.

Sorry, I didn't make myself clear. I believe you have specified more
numbers than you can know, in *each* example.

Therefore trying to distinguish between them is double-doomed :-))

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4612. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 19:22:51 UTC
From: kd1@sympatico.ca
Message-ID: <3F50F98B.5106CE96@sympatico.ca>
Source record: 109257

W5DXP wrote:
>
> kd1@sympatico.ca wrote:
> > We have a choice of two rho for this situation:
>
> Correction: We have a choice of two reflection coefficients
> each with its own unique definition.
>
> > black box - 0, computed from the surge impedance of the line and
> > the steady state impedance of the load
>
> Actually, Sqrt(Pref/Pfwd), the definition of rho.

This definition seems incomplete. There is a choice of sign. How
do you pick?

> > open box - 0.5, computed from the surge impedance of the line and
> > the surge impedance of the load
>
> Actually, (150-50)/(150+50), the definition of s11.
>
> > In any case, what we have in this experiment is a case where there
> > IS an impedance discontinuity and yet there is no reflection (if
> > you use the "black box" rho, as is often done).
>
> This is technically not true.

None-the-less, no one seems to have difficulty treating it as if it is.

> The NET reflections are zero. There
> are two non-zero component reflections as seen from the s-parameter
> equation:
>
> b1 = s11*a1 + s12*a2
>
> These three terms are all reflections. b1 is the NET reflections
> toward the source. Since b1 = zero, s11*a1 = -s12*a2, i.e. the two
> component reflections are of equal magnitude and opposite phase and
> therefore cancel. This is explained in the last three paragraphs on
> the Melles-Griot web page.

Yes, but only if the box is open. How do you analyze the black box
when you are only permitted to know the impedance at the inteface
looking
towards the load? rho is just computed from the only information
available. No one complains that the problem can't be solved.

> > So, if we are allowed to say in the first experiment that rho is 0
> > despite an impedance discontinuity, we are equally allowed to say
> > for the second that rho is -1 despite the absence of a discontinuity.
>
> There is NOT an absence of a discontinuity.

There is no discontinuity at the interface in question.

> There is NO physical discontinuity at the black box.

Exactly, and people argue that it is inappropriate to claim that a
reflection occurs at this interface.

And yet, in the symmetrical case where there IS a discontinuity,
many are quite comfortable talking about the lack of reflections
at the inteface.

So, if you don't wish to permit reflections at interfaces without
an impedance discontinuity, please never speak of an absence
of reflections at an interface with a discontinuity.

If it's good for the goose, it should be good for the gander.

...Keith

4613. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 19:24:53 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <r8t1lv4mp3cj70nqif3ii6cr3r4021t2ea@4ax.com>
Source record: 109256

On Sat, 30 Aug 2003 11:58:55 -0500, W5DXP <Cecil.A.Moore@ieee.org>
wrote:

>Richard Clark wrote:
>> Simply going to the
>> bench would be adequate for amateurs, guessing would eclipse the
>> efforts of everyone else. ;-)
>
>I'm ready to go to the bench but I don't know how to separate the
>incident reflected power that is re-reflected from the source from
>the generated power. That's what I am asking. How does one separate
>those two coherent superposed forward waves?
>
>> It should seem obvious that the power reflected at the source
>> interface is governed by the standard mechanics no one wishes to
>> impart to the source.
>
>I agree that the source obeys the wave reflection model rules. The
>fly in the ointment is the unknowable source impedance encountered
>by the incident reflected waves.

Worry about it if the example of the challenge presents more than 3+
dB loss. If not, there's hardly any point is there? We can work out
the differences then, but only if you care about accuracy and the lack
of confirming this exotic characteristic. I can appreciate that this
is not everyone's interest.

>
>> In other words the power returning to the
>> source will be reflected through the same mechanics it met at the
>> mismatched load, with the "exact" value varying only by the reflection
>> coefficient of the source mismatch and the power incident upon it. As
>> the line presents a media of 50 Ohms, and the source presents a 100
>> Ohm discontinuity, ...
>
>I must have missed how you know the source presents a 100 ohm impedance
>to incident reflected waves. Do you have a 100 ohm pad between the
>transmitter output and the transmission line?

Hi Cecil,

I didn't say I did the example, it is drawn from a reference. We've
already been through the mechanics of how to do it employing a
variable transmission line. Consult our correspondence for specific
details, you already offered that your equipment could tolerate that
mismatch, however THAT discussion is separate and distinct from the

example of the challenge. The challenge merely offers another approach. You can add a 50 Ohm Dummy Load in series to the output of your rig (this, of course presumes it presents 50 Ohms characteristic, but as many declaim that specification perhaps they could offer another value - eh, unlikely).

Another issue of adding a series resistor is one of shielding and common mode issues. You asked me in that earlier correspondence if I considered this, and yes I did. That is why I used massive parallel loads that insured an entirely shielded system. This is one of those methods that one correspondent pondered:
>>There is no institutionalized ignorance, just a
>>lot of skepticism regarding the reliability of the
>>analysis methods and the measurement methods.
which is understandable from those not trained in the art of designing measurement scenarios. I am trained but those still caught in the quandary are immobilized by rejecting every method (institutionalized ignorance). The measure of RF power is not simple by any means so it is best left to those who are serious about accuracy - hardly an amateur pursuit, and it hardly matters anyway as it is not a problem with modern equipment.

I offered that you already had the tools to perform a simple first pass approximation, you really need to consult that thread of correspondence again. None of this with forced mismatches is all that hard in the first place. The greater the mismatch at each end, the more compelling the evidence. The simple fact of the matter is that most rigs conform to 50 Ohm source Z and do not exhibit this issue. If those who held to their cherished fantasy of source Z being other than 50 Ohms, then they should be able to ace this test from the beginning (the lack of their correspondence reveals the invalidity of their claims).

I'm working on two repeater systems today (10M and GMRS), so enjoy.

73's
Richard Clark, KB7QHC

4614. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 19:41:49 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <HV6dndSqVvGfY82iXTWJjA@comcast.com>
Source record: 109258

"W5DXP" <Cecil.A.Moore@ieee.org> wrote in message
news:3f50e7eb_4@corp.newsgroups.com...
> Tarmo Tammaru wrote:
> > There was no actual power generated by the source.
>
> How do you know? Was it 100% efficient and consumed no
> power?
> --
> 73, Cecil http://www.qsl.net/w5dxp

The output rose to the open circuit value. Actually, I had thought of building a very efficient class C amplifier and calibrating the output power in terms of DC collector current, but think it is a waste of time.

Tam/WB2TT
>
>
>
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4615. 50-300Ohm balun

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 20:18:41 UTC
From: petrus bitbyter <p.kralt@reducespamforchello.nl>
Message-ID: <BE74b.9567$273.4572430@amsnews02.chello.com>
Source record: 109259

hello to everyone,

I have a car antenne with 50 Ohm coax that I want to connect to an old radio with a 300 Ohm balanced input so I need a balun and impedance converter. Any info about how to build one will be welcome. (Being an amateur I don't want to buy one.)

pieter

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.511 / Virus Database: 308 - Release Date: 18-8-2003

4616. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 21:24:34 UTC
From: kd1@sympatico.ca
Message-ID: <3F511612.73B4BFEF@sympatico.ca>
Source record: 109260

Cecil Moore wrote:
>
> kd1@sympatico.ca wrote:
>
> > W5DXP wrote:
> >
> >>http://www.gmi.edu/~drussell/Demos/superposition/superposition.html#standing
> >
> > Another web page which correctly uses superposition only for amplitude;
> > not power.
>
> Nobody is using superposition for power.

It may have been my misinterpretation, but I understood you were
claiming that the net power distribution on the line should be
computed by summing Pf and Pr. If you weren't saying this,
then the other way to compute power is to use p(t) = v(t) * i(t) (NET)
which leads to no energy crossing the voltage and current zeroes.

> Do you deny the fact that two 100W light bulbs put out more
> irradiance (power) than one?

It is my policy never to deny facts. I leave that for others.

> You argue that there must be reflections at a voltage node.

No. Merely that if there were, the picture would be no different.

> The above web page indicates such doesn't exist.

Visualize the picture if there were reflections at the minima
and maxima. The plots would look exactly the same.
Curiousity -- why are you so sure there aren't? The picture
would be the same!

> Those forward and reflected waves flow smoothly right through
> each other.

Another way of viewing the picture and as long as you stick to
voltages and currents; no problem.

It is only with the claim that energy flows past a point with
a constant voltage of 0 that I have a problem.

> Take another look.

In the simulation they show voltage waves. No problem.

...Keith

4617. Re: 40M HF antenna suggestions

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 22:05:58 UTC
From: Mark Sheffield <sheffield@earthlink.net>
Message-ID: <4t72lvkj4mafsersc4nkbihra2ctujlkco@4ax.com>
Source record: 109261

On Sat, 30 Aug 2003 15:44:16 GMT, Irv Finkleman <finkirv@shaw.ca>
wrote:

>
>Hope this is clearer than mud :-)
>
>Irv

Yup & thanks - Mark

4618. Re: Calculus not needed (was: Reflection Coefficient Smoke Clears a Bit)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 22:08:31 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl2838oqptaec7@corp.supernews.com>
Source record: 109262

Thanks for the rundown on "light ion" plasmas, plasma propagation, and moving-wall waveguides. I only have one remaining question.

Do the "vibrations" of electromagnetic waves you referred to in your previous post have another name?

Roy Lewallen, W7EL

Peter O. Brackett wrote:
> Roy:
>
> [snip]
> "Roy Lewallen" <w7el@eznec.com> wrote in message
> news:vl04c0knab338b@corp.supernews.com...
>
>>Thanks for the most interesting discussion of slinkys, "ether", and
>>seismology. But I'm a little vague on what you mean by "vibrations".
>>You're describing a field whose orientation isn't necessarily at a right
>>angle (transverse) to the direction of propagation (as in a TE or TM
>>mode wave), yet whose "vibrations" are nevertheless at a right angle to
>>the direction of propagation. So the "vibrations" are in a different
>>direction than the field. I'd like to learn more about this phenomenon,
>>but I can't find "vibrations" in the indexes of any of my
>>electromagnetics texts. Do they have another name?
>>
>>Roy Lewallen, W7EL
>
> [snip]
>
> Vibrations = oscillations
>
> An instance where compressional-dilative waves might occur in
> electromagnetic propagation and where those compressional vibrations terms
> could be added to the Maxwell-Heaviside equations might be that of
> electromagnetic propagation through "light ion" plasmas [ionized gases]
> where the ions could physically respond essentially instantaeously to the
> passing waves and the distance between ions and hence the media properties
> becomes a function of the electromagnetic fields. The effective mu and
> epsilon of the media changing instantaneously in response to the propagating
> fields, in turn changing the waves, etc... just as for compression acoustic
> wave propagating in a compressible gas. This effect is probably
> infinitesimal for "heavy ion" plasmas and might be perceptable for "light
> ion" plasmas. I wonder if any readers of this NG have any experience with
> propagation in plasmas and can share with us if they use
> compression-dilutive terms to augment the Maxwell-Heaviside equations in the

> analysis.
>
> I presume that the NEC code that you use in EZNEC to integrate the
> Maxwellian equations does not support plasma propagation analysis. Perhaps
> someone knows of a version of NEC that does. I'd guess that folks at
> Lawrence Livermore and at NASA are interested in such problems. I'd be
> curious to know if they use augmented versions of Maxwell-Heaviside
> equations.
>
> Another, arcane, far fetched, and impractical example of
> compressional-dillutive vibrations in em waves that I can think of could be
> imagined as a system wherein em waves travel in a waveguide system where the
> dimensions of the system [walls of the waveguide] are such that they can
> move in and out instantaneously in response to the passing waves thus
> alternately confining and expanding the dimensions of the guide relative to
> the wavelength of the passing waves, it might be imagined that such action
> could induce a wave shortening and lengthening effect on the passing waves
> which is what compression-dillution waves are.
>
> Thoughts, comments?
>
> --
> Peter K1PO
> Indialantic By-the-Sea, FL.
>
>
>

4619. Re: 50-300Ohm balun

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 22:27:33 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bir8cl$8sj$1@titan.btinternet.com>
Source record: 109263

> I have a car antenne with 50 Ohm coax that I want to
connect to an old radio
> with a 300 Ohm balanced input so I need a balun and
impedance converter. Any
> info about how to build one will be welcome. (Being
an amateur I don't want
> to buy one.)
==========

Dear Pieter, pleased to meet you.

The first thing to say is that the impedance of the short length of coax line between antenna and receiver has very little to do with the unbalanced-to-balanced transformer between coax and receiver input. The coax is just a short length of wire between antenna and receiver with a relatively small capacitance between the the wire and ground.

To design a transformer more information is needed. But whatever it is it will be a very easy to make. All you will need is a small ferrite ring and a length of thin enamelled copper wire.

What range of frequencies would you like your receiver to cover? Long-waves, medium-waves, short-waves or VHF FM

What sort of antenna are you using? Is it a simple vertical whip connected directly to the coax.?

Is anything connected betwen the antenna and coax? How high is the whip. Is the height of the whip adjustable.

Please provide more information and the number of turns of wire on what size ring can then be decided.

Reg, G4FGQ

4620. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 22:27:53 UTC
From: Drink <drink@gnt.net>
Message-ID: <vl3tfqnul80jf4@corp.supernews.com>
Source record: 109210

I second the notion for a Radio Shack discone antenna. It's just what you're asking for unless you want directivity & gain to focus on areas. In that case, I recommend a log-periodic dipole for VHF/UHF.
In the latter case, it depends on your geographic position and interests. If you're in the burbs and interests lay in the town 10 miles away, then you'd turn the LPD array toward town at it'd be better. Just food for thought.
Maybe if you're very serious, you could eventually put both in the attic. An antenna switch and a rotator... Bam! The best of both worlds.
o_o_o_o
Best Regards, /| ,[_____],
Jim, WP3JQ |���L --O|||||||O-
()_)�()_) ������)_)
EM60qk 30.447439N 086.628959W

4621. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 22:41:25 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f51299d_6@corp.newsgroups.com>
Source record: 109264

Ian White, G3SEK wrote:
> Sorry, I didn't make myself clear. I believe you have specified more
> numbers than you can know, in *each* example.
>
> Therefore trying to distinguish between them is double-doomed :-))

That was my whole point, Ian. Richard seems to believe those thing
are specifiable. I assumed his belief for the purpose of seeing
where it leads. Even if one can somehow know those things, they
still cannot be proven by measurements, or so it seems to me.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4622. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 22:58:23 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f512d97_6@corp.newsgroups.com>
Source record: 109266

kd1@sympatico.ca wrote:

> W5DXP wrote:
>>Actually, Sqrt(Pref/Pfwd), the definition of rho.
>
> This definition seems incomplete. There is a choice of sign. How
> do you pick?

Should have said |rho|. |rho| is often used without its Gamma angle.

> Yes, but only if the box is open. How do you analyze the black box
> when you are only permitted to know the impedance at the inteface
> looking towards the load?

Why would you choose to handicap your knowledge by not looking inside
the black box? Are you playing silly games or searching for knowledge?
Who is prohibiting you from looking inside the box and thus contributing
to the ignorance in the world?

>>There is NO physical discontinuity at the black box.
>
> Exactly, and people argue that it is inappropriate to claim that a
> reflection occurs at this interface.

Yes, it is inappropriate. There is nothing to stop the forward wave
from flowing into the black box and nothing to stop the reflected
wave from flowing out of it unless there's a physical impedance
discontinuity at the black box.

> And yet, in the symmetrical case where there IS a discontinuity,
> many are quite comfortable talking about the lack of reflections
> at the inteface.

It's not rocket science. I have an exact amount of money in my pocket.
If I don't know what that amount is, then I am ignorant. But all I have
to do to alleviate my ignorance is to count my money.

If you don't know whether there is a physical impedance discontinuity
or not, then you cannot know whether there are reflections or not.
Alleviate your ignorance by ascertaining whether there is a physical
impedance discontinuity or not. Or do as you have apparently done,
choose to remain ignorant. Either one is fine with me. Just realize
what you are doing.

If reflections exist, there's a physical impedance discontinuity somewhere.
Stop being lazy, locate it, and point to it. That's where the
reflections originate. All this stuff is knowable, but some choose to

remain ignorant or play silly mental masturbation games.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4623. Re: IMAGINARY POWER

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 23:01:13 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <birabpcbg1@titan.btinternet.com>
Source record: 109265

> "Reg Edwards" wrote
> > Dr Slick asked -
> > > How could you get more power reflected
> > > than what you put in?
> >
> > ======================
> >
> > Quite simple! It's "Imaginary power".
> >
> > As an experienced electrical engineer you should by
now be familiar with
> > imaginary quantities. There's no need for
confusion.
> >
> > Mathematics can't be wrong. Only people
> > can be wrong. Just carry on with the
> > calculations. If you asked a real sensible
> > question then eventually you will
> > obtain a real sensible answer.
> > ----
> > Reg, G4FGQ
>
> ============================
>
> And conversely, if you can't get a real answer
> which can be confirmed by measurements, or
> by other independent calculations, then you
> didn't ask a real sensible question in the first
> place.
>
> Of what uses do RC and SWR have anyway?
>
> What do you do with these quantities, real or
imaginary or complex,
> when you think you know what they are?

> Please do not dash for cover up to microwaves where
> values can change places with their conjugates as
mysteriously as the
> imaginary ghost of Shrodinger's Cat can switch
between really dead and
> really alive states.
>
============================

As several days have elapsed without response from the warring parties to the foregoing "Road Map" it can now be assumed peace reigns supreme.

Reg, G4FGQ

4624. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 23:03:23 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f512ec2$1_6@corp.newsgroups.com>
Source record: 109267

Tarmo Tammaru wrote:
> The output rose to the open circuit value.

Assuming you are talking about voltage, for a Norton equivalent,
that's a very lossy situation. What was your source?
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4625. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 23:12:37 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f5130ed_6@corp.newsgroups.com>
Source record: 109268

kd1@sympatico.ca wrote:
> Visualize the picture if there were reflections at the minima
> and maxima. The plots would look exactly the same.
> Curiousity -- why are you so sure there aren't? The picture
> would be the same!

Because the energy in bright ring interference patterns is NOT
trapped between the dark rings. That you choose to remain ignorant
of that centuries-old fact of physics is not my problem.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4626. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 23:29:50 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <zA-dnVkf_LbsrsyiXTWJkw@comcast.com>
Source record: 109169

"Cecil Moore" <Cecil.A.Moore@ieee.org> wrote in message
news:3f512ec2$1_6@corp.newsgroups.com...
> Tarmo Tammaru wrote:
> > The output rose to the open circuit value.
>
> Assuming you are talking about voltage, for a Norton equivalent,
> that's a very lossy situation. What was your source?
> --
> 73, Cecil http://www.qsl.net/w5dxp
The source was an MFJ269, and as I mentioned, the external series resistor was 75 Ohms. I should try it with something like 1K. Coax was ~100 feet of 9913. My scope is only good to 100 MHz; so, I have to keep the frequency down.

BTW, I have met Ed Norton.

Tam/WB2TT

4627. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 23:40:00 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308301540.1cb76cdd@posting.google.com>
Source record: 109170
Body handling: HTML body converted to readable text

"Tarmo Tammaru" wrote in message news:...
> > > you settled on (Zl - Z0*)/(Zl + Zo). For Zl = 0 this comes to -Z0*/Z0,
> > > which, for Zo having phase angle b equates to -1 at angle(-2b).
> >
> > Agreed. This doesn't prove anything, does it?
>
> How does this allow for the sum of V+ and V- to be 0? That is what you have
> across a short.
>

This is the correct answer, you just interpret it incorrectly.

The reflection coefficient is defined as the reflected voltage
divided by the incident voltage. Sure, the voltage is zero right at
the short, but there is a reflected voltage wave that moves back
towards the generator.

When you have a short, the phase is flipped 180 degrees, which is
exactly what the -1 means. Notice if you had a Zl=infinity, that the
RC would be +1, which would be full reflections INPHASE with the
generator, or in phase with the incident voltage wave.

It's very simple stuff, but many people don't understand this.

> .....
> > >
= (1/2)Go|V+|^2e**(-2az)[1 - |CM|^2 +2(Bo/Go)Im(CM)]
> > >
> > > Remember, z is distance from the load.
> > >
> > > Tam/WB2TT
> > >
> >
> >
> > ok, you've done a nice job of copying the text you sent me.
>
> As I recall, you said you were not familiar with these diagrams and did not
> understand them. What do you want me to do? derive it in a different way?
>

I want you to tell me the significance of the fact that the
normalized load impedance Zn=Zr/Zo does NOT have the same angle as Zr
because Zo is complex in the general case. And how this may make this
example incorrect for this discussion.

Slick

4628. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-30 23:49:57 UTC
From: Charles Wittnam <wittnam@bresnan.net>
Message-ID: <FKa4b.234678$Oz4.63566@rwcrnsc54>
Source record: 109171

Danny,

I will keep a look out for RF Gremlins. I don't plan to run more than
100 watts. My rig will be the first to let me know since it is a Ten Tec
Jupiter, which I suspect would not like a lot of RF in the shack. You know
if you start randomly switching on the touch lights in all the bedrooms in
your neighborhood while transmitting with your OCF dipole in the evenings
you would probably would give a while new meaning to "interfering with
vertical polarization." You would also become very popular. <g >

73,
Charlie
KD7HU

"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
news:s2o1lv4er41a8opjpbqg4u6en05n327o71@4ax.com...
> Charles,
>
> Looks like you've got a good handle on things. I have used an OFC, fed
> with ladder line. Nothing particularly outstanding in its performance.
> However, as to common mode current: running around 100 watts I
> experienced no problems, but when I bumped up the power to about
> 600-watts all hell broke loose. My computer, the TV, stereo, touch
> lights and just about any thing else electronic went wild. And I use a
> pretty good single point RF ground system here. So be prepared that
> some "strange things" may happen. <g>
>
> Good luck, nice talking with you.
> 73,
> Danny, K6MHE
>
>
> On Sat, 30 Aug 2003 16:20:10 GMT, "Charles Wittnam"
> <wittnam@bresnan.net> wrote:
>
> > Danny:
> > I think the you have raised a valid concern about
the
> >balun. This is something I did not fully appreciate before I made my
> >decision to try this. Cebik makes the same point and suggests if you
use
> >this antenna you might be better off using a parallel feed line with a
> >tuner, and no balun. I will make the cuts and scale this antenna down
> >preserving the same ratio of offset. Before I hang this permanently I

will
> >need to get a better feel for its performance and limitations. I may do
a
> >head to head test with another antenna set up and see. I was intrigued
by
> >W5DXP's "completed inverted L", which is a full wave loop variant.
> >The major benefit of this whole experience for me has been the amount of
> >research it has instigated. I also have a better understanding of
antenna
> >options. I have come to the following conclusions about commercial
> >"windoms".(which really are folded OCF dipole antennas).
> >
> >1. The claims about performance are probably overblown due to:
> > a. Faulty assumptions about the degree the "vertical
> >radiation" of the feedline plays in modifying performance.
> > b. These incorrect assumptions being placed into antenna
> >simulation programs and printed as truth.
> > c. Placebo effect: I suspect some of the testimonials
> >are due to expecting better performance. On some occassions the
> >improvement may actually be due to hanging these antennas at "recommended
> >heights". Of course your dipole would do better up there too.
> >2. The unbalanced feedline makes RF in the shack a common problem since
> >your "vertical radiator" can be coming into your shack, depending upon
> >whether you have taken the necessary precautions to prevent this.
> >3. You are almost always better off making your own antenna.
> >4. I do NOT recommend dealing with any amateur supply company that
> >routinely will not return inquiry calls.
> >5. Read up on OCF dipoles as much as possible before building or buying
> >one.
> >
> > I will keep you informed of my
> >progress. I have truly appreciated the input. I hope this discussion
helps
> >some other hams who are contemplating purchasing commercially made
> >"Windoms."
> >
> >Charlie KD7HU
> >
> >
> >"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
> >news:5f20lvs86vagudgv7f7r27p059gf71uoi9@4ax.com...
> >> One thing that as always bothered me is that antenna is not balanced
> >> with that lop-sided feed. Further-the-more that assumed 300-Ohm
> >> impedance has a pretty hefty reactive component. As baluns like
> >> resistive loads I would question just how well the balun works under
> >> that condition?
> >>
> >> I too have modeled the antenna and agree that the claims made
> >> regarding feedline's radiation contributing to a strong vertical

> >> component is over stated to say the least.
> >>
> >> Good luck with your cut and try.
> >>
> >> 73
> >> Danny, K6MHE
> >>
> >>
> >>
> >> On Sat, 30 Aug 2003 02:02:46 GMT, "Charles Wittnam"
> >> <wittnam@bresnan.net> wrote:
> >>
> >> >
> >> > That is probably what I am going to do. I became a
> >> >little more anxious after I read L.B. Cebik's articles on OCF dipole
> >> >antennas, "From the Ground Up." Things are a little bit more
> >complicated
> >> >than I thought. Most baluns used in OCFs are 4/1. I have have
included a
> >> >graph from his article .First of all, the calculations used to design
> >OCFs
> >> >are supposed to estimate the 300 ohm impedance point. These are
always
> >a
> >> >rough estimate since as you get further from the center of the
antenna
> >it
> >> >goes up exponentially. When you factor in nearby objects, your
radiating
> >> >feedline, and antenna height the calculated 300 ohm point can be
in a
> >> >different area altogther. A 50% error in impedance result with a
5%
> >> >shift in the 300 ohm point, which on a 40 meter OCF would be about
three
> >> >feet. More recently some of the 40meter OCF builders (I think the
40
> >> >meter "Carolina Windom" would be an example), have tried to hit the
> >> >flatter part of the curve by using a different offset calculation.
> >Instead
> >> >of D3/L=.167 for the 300 ohm point they used D1/L=.38 and D2/L=
.62
> >for
> >> >a 100ohm point. They are using a 2:1 balun. In the inclosed info that
> >came
> >> >with the antenna it says it is using a 1:1 balun which I sincerely
doubt.
> >> >So I measured my antenna and the offset is closer to the second
formula,

> >> >than the first so I was confused.. If I cut it up and it did not work
> >well
> >> >and I knew what the balun was I would know which part of the curve (
> >and
> >> >the antenna) to head for! . So you can understand my intial
reluctance
> >to
> >> >act. Perhaps this is being overly cautious. You get that way when you
are
> >> >given a "1:1" balun placed in the position where you would put 2:1
in
> >an
> >> >antenna that usually uses a 4:1 AND the company does not answer
> >questions
> >> >about their product.
> >> >
> >> > I would highly recommend Cebik's article series on OCF antennas,
in
> >> >which he debunks a lot of their claims, especially the "vertical
> >radiator"
> >> >aspect of the feedline and the "yagi" performance. He basically
argues
> >> >that these claims are being backed up by overly simplified assumptions
> >about
> >> >the antenna being plugged into antenna modeling programs. He believes
> >they
> >> >are no different than dipoles really. For my purposes I wanted an
> >antenna
> >> >system with an offset feed because I can hide the feedline coax
easier
> >> >given my available tree locations. (and keep the XYL happier...) This
> >> >antenna has a black balun and black insulated flexible wire which
really
> >> >blends in well on my heavily wooded lot. Right now I am trying to
> >salvage
> >> >the situation. This is the first time I have run into an amateur
supply
> >> >company that has behaved so poorly. It was a rude awakening. I may
just
> >do
> >> >what you suggested. I hope I have the 4 to balun since I have other
uses
> >> >for it. If the down sizing doesn't work then I will either just swap
> >out
> >> >baluns or try a different approach, such as using a parallel feedline
> >and
> >> >not using the balun. We will see.
> >> >
> >> >

> >> >
> >> >
> >> >
> >> >"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
> >> >news:8plvkv4tqdhja7t1faok0s33curesbe3b4@4ax.com...
> >> >> On Fri, 29 Aug 2003 21:37:00 GMT, "Charles Wittnam"
> >> >> <wittnam@bresnan.net> wrote:
> >> >>
> >> >> > I am trying to salvage the situation before
> >going
> >> >to
> >> >> >war with Antennas and More with my credit card company. They
shipped
> >the
> >> >> >wrong antenna to me and have NOT answered numerous calls or emails.
> >I
> >> >was
> >> >> >looking for a 40 meter OCF dipole and they sent me a 80 meter OCF,
> >which
> >> >> >was not what I ordered because of space limitations.
> >> >> >If I could cut the thing down to use on 40 meters then I can save
the
> >> >> >inevitable hassle of dealing with this outfit and going to war with
> >them
> >> >via
> >> >> >my credit card company.. However, my understanding is that a lot
of
> >the
> >> >> >commercial builders of the OCF dipoles use a 2/1 balun for their 40
> >meter
> >> >> >antennas since they are trying to match a different impedance spot
on
> >the
> >> >> >shorter antenna., hence it is not necessarily the case that you can
> >just
> >> >cut
> >> >> >them down. Any thoughts?
> >> >> >
> >> >> >
> >> >> >KD7HU
> >> >> >
> >> >> >
> >> >> Why not just scale the antenna? That's is to say, in your case,
reduce
> >> >> the length of the wires by a factor of &#65533;.
> >> >>
> >> >> Danny, K6MHE
> >> >>
> >> >>

> >> >
> >>
> >
>

4629. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 00:03:40 UTC
From: Bob <bob@agawamnet.com>
Message-ID: <jAudnT3x6ZLDpsyiXTWJjA@comcast.com>
Source record: 109172

The stock indoor seems fine for local VHF but not too good on the 800 mhz
trunked system. How does the dicone work on the 800 mhz band?

"Mark Keith" <nm5k@wt.net> wrote in message
news:25eb70d7.0308261932.7cca26e1@posting.google.com...
> "Bob" <bob@agawamnet.com> wrote in message
news:<zsScnc1c1qzTRtaiU-KYvg@comcast.com>...
> > Any recommendations for an antenna to put in the attic for use with a
> > bc895xlt scanner. Will be for general scanning and not on any particular
> > frequency. Dimensions would be helpful if anyone has this.
> >
> > Bob
>
> Radio shack discone? Fairly broadbanded...A simple ground plane will
> work fairly well for most freq's. Depends on the range you want to
> cover. A GP cut for hi-band VHF will do a passable job on UHF as a
> psuedo 5/8 wave of sorts. Most public service signals are fairly
> strong unless you are in the sticks, so it should't be real critical.
> MK

4630. Re: Another DXCC question ??

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 01:11:15 UTC
From: W4WNT <w4wnt@carolina.rr.com>
Message-ID: <TWb4b.40340$J16.2076238@twister.southeast.rr.com>
Source record: 109173

Hi Carter,

As long as the cards clearly list your call and a signal report as well as the details of the QSO, time date, band, mode, they should be acceptable for DXCC submission. Most folks submit 102 or so cards with the first submission, then if there is a problem with one card, they are still OK.

As for the HA5-350 card, it sounds like an SWL report rather than an amateur call. (As above, does it have QSO details of your QSO with the call listed?) Since you'll probably be having a field checker look them over, he or she can tell you if it is legit card. Another question for the checker is whether the ten year old cards have to go into the ARRL DXCC desk (but ARRL Divisional Hamfests will have League reps who can check them).

Good luck and good DX,

Bill, W4WNT
"carter" <cartw@netart.com> wrote in message
news:3F5022DB.84E55202@netart.com...
> I'm sending in for the regular DXCC and a few things are unclear
> to me:
>
> 1) Would a CY9AA (St. Paul Island) from 1997 on 160 meters
> count?
> Thought I read somewhere that 160 meters doesn't count on
> the regular DXCC.
>
> 2) I have a 3E1DX from Panama. But on the list it doesn't
> have 3E1 for Panama listed. Only HO-HP#* is listed for
> Panama. It was a CQWW contest in 1997. Am I out of luck?
>
> 3) Have a 4N7DW from Yugoslavia from 1993. Once again
> this prefix isn't listed on the ARRL list for Yugo (YT prefix is)
> Out of luck??
>
> 4) I have a Pitcairn Island VR6BB from 1993. VP6 is now
> listed as being Pircairn Island. VR is now Hong Kong.
> What gives with this one??
>
> 5) I have a HA5-350 from Hungary from 1996. Not allowed?
>
>

4631. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 01:17:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <5I6dnaDcSpE60cyiXTWJig@comcast.com>
Source record: 109174
Body handling: HTML body converted to readable text

"Dr. Slick" wrote in message
news:1d15af91.0308301540.1cb76cdd@posting.google.com...
> "Tarmo Tammaru" wrote in message
news:...
> > > > you settled on (Zl - Z0*)/(Zl + Zo). For Zl = 0 this comes
to -Z0*/Z0,
> > > > which, for Zo having phase angle b equates to -1 at angle(-2b).
> > >
> > > Agreed. This doesn't prove anything, does it?
> >
> > How does this allow for the sum of V+ and V- to be 0? That is what you
have
> > across a short.
> >
>
> This is the correct answer, you just interpret it incorrectly.
>
> The reflection coefficient is defined as the reflected voltage
> divided by the incident voltage. Sure, the voltage is zero right at
> the short, but there is a reflected voltage wave that moves back
> towards the generator.
>
> When you have a short, the phase is flipped 180 degrees, which is
> exactly what the -1 means. Notice if you had a Zl=infinity, that the
> RC would be +1, which would be full reflections INPHASE with the
> generator, or in phase with the incident voltage wave.
>
> It's very simple stuff, but many people don't understand this.

That's the whole point. By the conjugate formula RC is *not* -1. It is -1
with a phase angle. I agree it works for an open circuit, since you can
divide both sides by Zl, and anything divided by infinity is 0
>
>
>
> > .....
> > > >
= (1/2)Go|V+|^2e**(-2az)[1 - |CM|^2 +2(Bo/Go)Im(CM)]
> > > >
> > > > Remember, z is distance from the load.
> > > >
> > > > Tam/WB2TT
> > > >

> > >
> > >
> > > ok, you've done a nice job of copying the text you sent me.
> >
> > As I recall, you said you were not familiar with these diagrams and did
not
> > understand them. What do you want me to do? derive it in a different
way?
> >
>
> I want you to tell me the significance of the fact that the
> normalized load impedance Zn=Zr/Zo does NOT have the same angle as Zr

Obviously true

> because Zo is complex in the general case. And how this may make this
> example incorrect for this discussion.

> Slick

I am not sure which example you mean, but A*/A does not have 0 phase angle,
unless the phase angle of A is 0.

PS I scanned in the other stuff. Compressed TIF

Tam

4632. Re: Purchasing Ferrite Cores for Balums

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 01:24:05 UTC
From: Doug <DeliverSpam@Landfill.Com>
Message-ID: <1LidnUj8IZHp08yiU-KYgw@gbronline.com>
Source record: 109175

Last time I ordered (5 years ago) they had a great little book that called out the appropriate mixes for each range of frequencies. The book was only a few dollars if I remember correctly. They have other books available that are invaluable as well.
73 Doug

4633. Re: How do I know my Antenna is doing well???

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 01:32:25 UTC
From: Doug <DeliverSpam@Landfill.Com>
Message-ID: <geWcnQuoodKhzcyiXTWJiQ@gbronline.com>
Source record: 109176

If you have a $30 preselector/amplifier between the antenna and radio that
will make a HUGE difference in signal strength and if you do there's not
much you can do to significantly improve reception by modifying the antenna.
The exception is, the higher the better.
73 Doug

"Walter" <junkmail@altonillinois.com> wrote in message
news:70729ae5.0308261847.71df2eae@posting.google.com...
> On the surface, this sounds like a stupid question, but how do I know
> my shortwave wire dipole antenna is picking up all it can?
>
> If I live in the St. Louis Missouri Area, is there a list of stations
> X, Y, and Z that I should be able to pick up? (thinking shortwave
> here, not local stations)
>
> And if so, If I can pick up station A from Egypt, station B from
> Japan, and station C from Moscow, then I'm doing really good?
>
> Just wondering.
>
> Thanks..

4634. Complex line Z0: A numerical example

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 01:44:54 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl2kp2cdlork04@corp.supernews.com>
Source record: 109177
Body handling: HTML body converted to readable text

Here's a numerical example of a transmission line having a complex Z0, terminated with a load impedance causing the magnitude of the reflection coefficient to be greater than 1.

For a transmission line, I chose an approximate model of RG-58. I say approximate, because the conductor loss doesn't include the shield loss, something I haven't yet accurately included in my calculations. But the calculated loss and Z0 are at least in the ballpark of what you'd see with a real transmission line. At a frequency of 10 kHz, my "pseudo-RG-58" shows a Z0 of 68 - j39 ohms (78.39 at an angle of -29.84 degrees), and velocity factor of 0.492. I chose to analyze a system with one wavelength of the cable for convenience in doing the calculations. One wavelength of the cable is 14753 meters, and the matched loss of that length is 31.60 dB. Other characteristics are:

Loss constant alpha * length = 3.637
Propagation constant beta * length = 6.283

For a load, I chose 10 + j50 ohms (50.99 at an angle of 78.69 degrees). This produces a voltage reflection coefficient of 1.349 at an angle of 115.1 degrees.

Again for calculational convenience, I chose a forward voltage at the input end of the cable of 1000 + j0 volts. All the results can be scaled if wished for any other value.

The following uses the notation in _Reference Data for Radio Engineers_:

fE1 = Forward voltage at input end of the line
rE1 = Reverse voltage at input end of the line
E1 = Total voltage at the input end of the line
delta = angle of Z0
psi = half the angle of the reflection coefficient
rho = magnitude of the voltage or current reflection coefficient

And, I'll use Gv for the complex voltage reflection coefficient = -Gi, where Gi is the current reflection coefficient. Positive reflected current rI is toward the load. Positive average "reverse power" is toward the source. "<>" denotes an average value.

ax = alpha * length
bx = beta * length

For current, I is substituted for E, and for the load end, 2 replaces 1. All voltages, currents, and impedances are complex phasors unless enclosed in absolute value signs (| |). Values so enclosed are

magnitudes only. All currents and voltages will be RMS. Steady state is assumed.

Because I've chosen an even wavelength, and calculations are done only for the ends of the line, the complex propagation constant gamma is replaced by its real part alpha in all equations below. If other line lengths are used, or calculations done for intermediate points along the line, beta will have to be included.

When written in polar notation, A /_ B means "A at an angle of B degrees".

Calculated values are:

fE1 = 1000 /_ 0
fE2 = fE1 * exp(-ax) = 26.34 /_ 0
rE2 = fE2 * Gv = 35.53 /_ 115.1
rE1 = rE2 * exp(-ax) = 0.9361 /_ 115.1
fI1 = fE1/Z0 = 12.76 /_29.84
fI2 = fI1 * exp(-ax) = 0.3360 /_ 29.84
rI2 = fI2 * -Gv = 0.4533 /_ -35.06
rI1 = rI2 * exp(-ax) = 0.01194 /_ -35.06

These values allow us to calculate all the voltages, currents, impedances, and powers at the ends of the line.

E1 = fE1 + rE1 = 999.6 /_ 0.0486
I1 = fI1 + rI1 = 12.77 /_ 29.78
E2 = fE2 + rE2 = 34.11 /_ 70.65
I2 = fI2 + rI2 = 0.6689 /_ -8.033

A quick check shows that the impedance looking into the input end of the line = E1/I1 = 78.28 /_ -29.73, very nearly the line's characteristic impedance. This should be expected, considering the line loss. At the output end, E2/I2 = 50.99 /_ 78.68, which is the load impedance as it should be.

The average power into the line = E1 * I1 * cos(theta), where theta = the angle of E1 - the angle of I1 =>

= 11080 watts

The average power out of the line at the load end =

= 4.477 watts

So the line loss is 10 * log(11080/4.477) = 33.94 dB. This is a little greater than the matched loss of 31.60 dB because the line isn't matched.

You must have noticed that the reflected voltage rE2 is greater in magnitude than the incident voltage fE2 at the load. This doesn't violate any law of conservation of energy, however -- examples abound of passive circuits that effect a voltage step-up. But, likewise, the reflected current exceeds the forward current.

Some posters on this newsgroup are very fond of looking at average powers calculated from various waves, so let's do those calculations:

= fE1 * fI1 * cos(delta) = 11070 watts
= rE1 * rI1 * cos(delta) = 0.009695 watts

Not surprisingly, ~ , so we can't tell much from these. At the load end,

= 7.677 watts
= 13.97 watts

Aha! you say, we've created power!

Well, no we haven't. If you'll recall from the earlier calculation of and , we've lost power, not created it. But the "forward power" minus the "reverse power" is a negative number! Yes, it is. But if you bother to go through the math, you'll find that the actual, net power equals the difference between "forward" and "reverse" power only if Z0 is completely real (or one other special case). The general formula for total power in terms of "forward" and "reverse" power is:

= - + rho * exp(-2ax) * 2 * sin(2bx - 2 * psi) * sin(delta)

delta is the angle of Z0, so the extra term on the right becomes zero only when Z0 is completely real. Of course, a purely imaginary Z0 (angle of +/- 180 degrees) would have the same effect, but that can't occur in a real cable. Interestingly, the right hand term also goes to zero when 2bx - 2 * psi = n * 180, where n is any integer including zero. That means that, even when Z0 is complex, the average total power will be the difference between fP and rP at particular points along the line, or at the input end of particular line lengths.

One of the very important things this example illustrates is the danger of drawing conclusions from the average powers in the individual forward and reverse voltage and current wave components. Somewhere, somehow, you've also got to account for the power in that extra term -- a power that comes and goes along the cable! I challenge anyone who's fond of this kind of analysis to explain the component powers on this line.

This analysis has produced a self-consistent set of voltages, currents, impedances, and (net) power. No physical laws were violated. If anyone thinks this analysis or its conclusion are in error, I invite you to do a comparable analysis, starting only with the same assumed transmission line and load.

I've also run a similar analysis of a hypothetical lossless cable with the same Z0. Such a cable, as far as I know, can't be constructed. But if there's enough interest I'll be glad to post that also.

As always, corrections are solicited and welcome.

Roy Lewallen, W7EL

4635. Question about attenuators ...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 01:54:24 UTC
From: Doug McLaren <dougmc@frenzy.com>
Message-ID: <kzc4b.21898$_B.1192660@twister.austin.rr.com>
Source record: 109178

I'm pretty new to all of this, so if this is a silly question forgive me :)

I thought I'd go ahead and make a 2m Yagi antenna so I can give transmitter hunting a try. (The plan I'm using is made of PVC pipe and 1" tape measures ... simple enough.)

The other thing you usually need is an attenuator, to cut the power when you get close. I've got instructions for one of these too, and it's pretty simple -- just a bunch of resistors and double throw switches to activate each stage, all in a shielded box.

The values of the resistor are given without explanation, but I'm sure those values were chosen to 1) attenuate the signal by the desired amount and 2) maintain the antenna/radio's impedance of 50 ohms. (I guess I could verify this with a little math if I felt the need ...) With about 5 stages, the total cost of parts is $30-$40 at Radio Shack.

Since you're not going to be transmitting through this attenuator anyways (it would just release the magic smoke) then why is it important to keep a good SWR ratio? Couldn't you just take a variable resistor (with an audio/logarithmic taper) and put it in series or parallel (which exactly depends on it's value) with the antenna input, and then adjust as needed until you have a sutiable signal level again?

Or would the messed up SWR ratios actually make the antenna not directional anymore or something like that?

(http://members.aol.com/homingin/index.html has lots of stuff on transmitter hunting, but no answers to this question. The offset attenuator seems good, however :)

--
Doug McLaren, dougmc@frenzy.com
"Can of worms? The can is open... the worms are everywhere."

4636. Re: Question about attenuators ...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 02:49:29 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl2oi66clptc42@corp.supernews.com>
Source record: 109179

If you do the attenuation in a single line to your receiver, rather than in feedlines for individual elements of an array, it won't have any effect on the antenna's pattern or other properties.

There are quite a few good reasons for having an attenuator maintain a match -- it makes it possible to have a predictable and repeatable amount of attenuation, it won't disturb other cascaded objects like filters or amplifiers, etc. But for your purpose, a variable resistor should be fine. The only problem you might have is that the amount of attenuation you can get will be limited by the capacitive coupling across the resistor. You could use two pots, or a ganged pot (with one section connected so its resistance increases when the other decreases), with one in series and the other across the line on the receiver side, to increase the attenuation range.

Roy Lewallen, W7EL

Doug McLaren wrote:
> I'm pretty new to all of this, so if this is a silly question forgive
> me :)
>
> I thought I'd go ahead and make a 2m Yagi antenna so I can give
> transmitter hunting a try. (The plan I'm using is made of PVC pipe
> and 1" tape measures ... simple enough.)
>
> The other thing you usually need is an attenuator, to cut the power
> when you get close. I've got instructions for one of these too, and
> it's pretty simple -- just a bunch of resistors and double throw
> switches to activate each stage, all in a shielded box.
>
> The values of the resistor are given without explanation, but I'm sure
> those values were chosen to 1) attenuate the signal by the desired
> amount and 2) maintain the antenna/radio's impedance of 50 ohms. (I
> guess I could verify this with a little math if I felt the need ...)
> With about 5 stages, the total cost of parts is $30-$40 at Radio
> Shack.
>
> Since you're not going to be transmitting through this attenuator
> anyways (it would just release the magic smoke) then why is it
> important to keep a good SWR ratio? Couldn't you just take a variable
> resistor (with an audio/logarithmic taper) and put it in series or
> parallel (which exactly depends on it's value) with the antenna input,
> and then adjust as needed until you have a sutiable signal level
> again?
>

> Or would the messed up SWR ratios actually make the antenna not
> directional anymore or something like that?
>
> (http://members.aol.com/homingin/index.html has lots of stuff on
> transmitter hunting, but no answers to this question. The offset
> attenuator seems good, however :)
>

4637. Re: Purchasing Ferrite Cores for Balums

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 02:54:19 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl2or7t41b3f09@corp.supernews.com>
Source record: 109180

Fair-Rite material type 43 is good for most baluns. It's available in a large number of core sizes. With other manufacturers, look for material with initial permeability of around 750. If you're not running more than a couple of hundred watts or so, you can get more impedance for fewer turns with one of the 70-series ferrites. This ferrite can get too hot, though, if you run a lot of power. If type 43 overheats, one of the 60 series like 61 will have less loss. It also has considerably lower impedance, though, so you might have trouble getting an adequate amount for the balun to be effective.

Amidon Associates has long been a source for small quantities of ferrite cores. I'm sure there are a number of others, which a web search should reveal.

Roy Lewallen, W7EL

yea right wrote:
> I'm trying to find a place (in the US) to purchase ferrite donuts so I can
> wind my own balum. Any recommendations?
>
> Also, when looking at manufacturer's websites, there seems to be a
> selection of chemistry to their cores. Is there one formulation that I'm
> looking for in particulate?

4638. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 02:56:07 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <tpo2lv0p6st43vg60bghlmmnpoguqklrqk@4ax.com>
Source record: 109181

On Sun, 24 Aug 2003 08:24:12 -0400, "Adam T. Cately"
<atcately@bright.net> wrote:

><SNIP>
>
> I haven't read the rest of the thread, but here's something glaringly
>obvious...
>
>> Grounding will be easy when I get around to it - I have
>> baseboard hot water radiators that I can ground to.
>
> NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
>as it goes directly to the earth outside the building. The hot water
>pipes are routed through the hot water heater(s) and are NOT a direct
>path to ground.

Not in my house. The water main coming in is plastic. Yet the
electrical code requires me to ground to the meter fitting which is
the only metal in the system. It has plastic going out both sides.

I have to ground to the gas main which is plastic coated and doesn't
reach ground potential until it reaches the main on the other side of
the road. Of course all this ties to the electrical system ground
which is several 8' ground rods. about 8' apart.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)

4639. Re: Off Center Fed Dipole: Windom HSQ

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 02:56:34 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl2ovgltp57k64@corp.supernews.com>
Source record: 109182

Jack Belrose, VE2CV did considerable research and experimenting with OCF dipoles some years ago. Some of his work was published in QST. One of the conclusions he reached was that it's awfully hard to keep the common mode RF off the feedline to the shack.

Roy Lewallen, W7EL

Charles Wittnam wrote:
> Danny,
>
> I will keep a look out for RF Gremlins. I don't plan to run more than
> 100 watts. My rig will be the first to let me know since it is a Ten Tec
> Jupiter, which I suspect would not like a lot of RF in the shack. You know
> if you start randomly switching on the touch lights in all the bedrooms in
> your neighborhood while transmitting with your OCF dipole in the evenings
> you would probably would give a while new meaning to "interfering with
> vertical polarization." You would also become very popular. <g >
>
> 73,
> Charlie
> KD7HU
>
>
>
> "Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
> news:s2o1lv4er41a8opjpbqg4u6en05n327o71@4ax.com...
>
>>Charles,
>>
>>Looks like you've got a good handle on things. I have used an OFC, fed
>>with ladder line. Nothing particularly outstanding in its performance.
>>However, as to common mode current: running around 100 watts I
>>experienced no problems, but when I bumped up the power to about
>>600-watts all hell broke loose. My computer, the TV, stereo, touch
>>lights and just about any thing else electronic went wild. And I use a
>>pretty good single point RF ground system here. So be prepared that
>>some "strange things" may happen. <g>
>>
>>Good luck, nice talking with you.
>>73,
>>Danny, K6MHE
>>
>>
>>On Sat, 30 Aug 2003 16:20:10 GMT, "Charles Wittnam"
>><wittnam@bresnan.net> wrote:

>>
>>
>>> Danny:
>>> I think the you have raised a valid concern about
>
> the
>
>>>balun. This is something I did not fully appreciate before I made my
>>>decision to try this. Cebik makes the same point and suggests if you
>
> use
>
>>>this antenna you might be better off using a parallel feed line with a
>>>tuner, and no balun. I will make the cuts and scale this antenna down
>>>preserving the same ratio of offset. Before I hang this permanently I
>
> will
>
>>>need to get a better feel for its performance and limitations. I may do
>
> a
>
>>>head to head test with another antenna set up and see. I was intrigued
>
> by
>
>>>W5DXP's "completed inverted L", which is a full wave loop variant.
>>>The major benefit of this whole experience for me has been the amount of
>>>research it has instigated. I also have a better understanding of
>
> antenna
>
>>>options. I have come to the following conclusions about commercial
>>>"windoms".(which really are folded OCF dipole antennas).
>>>
>>>1. The claims about performance are probably overblown due to:
>>> a. Faulty assumptions about the degree the "vertical
>>>radiation" of the feedline plays in modifying performance.
>>> b. These incorrect assumptions being placed into antenna
>>>simulation programs and printed as truth.
>>> c. Placebo effect: I suspect some of the testimonials
>>>are due to expecting better performance. On some occassions the
>>>improvement may actually be due to hanging these antennas at "recommended
>>>heights". Of course your dipole would do better up there too.
>>>2. The unbalanced feedline makes RF in the shack a common problem since
>>>your "vertical radiator" can be coming into your shack, depending upon
>>>whether you have taken the necessary precautions to prevent this.
>>>3. You are almost always better off making your own antenna.
>>>4. I do NOT recommend dealing with any amateur supply company that
>>>routinely will not return inquiry calls.

>>>5. Read up on OCF dipoles as much as possible before building or buying
>>>one.
>>>
>>> I will keep you informed of my
>>>progress. I have truly appreciated the input. I hope this discussion
>
> helps
>
>>>some other hams who are contemplating purchasing commercially made
>>>"Windoms."
>>>
>>>Charlie KD7HU
>>>
>>>
>>>"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
>>>news:5f20lvs86vagudgv7f7r27p059gf71uoi9@4ax.com...
>>>
>>>>One thing that as always bothered me is that antenna is not balanced
>>>>with that lop-sided feed. Further-the-more that assumed 300-Ohm
>>>>impedance has a pretty hefty reactive component. As baluns like
>>>>resistive loads I would question just how well the balun works under
>>>>that condition?
>>>>
>>>>I too have modeled the antenna and agree that the claims made
>>>>regarding feedline's radiation contributing to a strong vertical
>>>>component is over stated to say the least.
>>>>
>>>>Good luck with your cut and try.
>>>>
>>>>73
>>>>Danny, K6MHE
>>>>
>>>>
>>>>
>>>>On Sat, 30 Aug 2003 02:02:46 GMT, "Charles Wittnam"
>>>><wittnam@bresnan.net> wrote:
>>>>
>>>>
>>>>> That is probably what I am going to do. I became a
>>>>>little more anxious after I read L.B. Cebik's articles on OCF dipole
>>>>>antennas, "From the Ground Up." Things are a little bit more
>>>
>>>complicated
>>>
>>>>>than I thought. Most baluns used in OCFs are 4/1. I have have
>
> included a
>
>>>>>graph from his article .First of all, the calculations used to design
>>>

>>>OCFs
>>>
>>>>>are supposed to estimate the 300 ohm impedance point. These are
>
> always
>
>>>a
>>>
>>>>>rough estimate since as you get further from the center of the
>
> antenna
>
>>>it
>>>
>>>>>goes up exponentially. When you factor in nearby objects, your
>
> radiating
>
>>>>>feedline, and antenna height the calculated 300 ohm point can be
>
> in a
>
>>>>>different area altogther. A 50% error in impedance result with a
>
> 5%
>
>>>>>shift in the 300 ohm point, which on a 40 meter OCF would be about
>
> three
>
>>>>>feet. More recently some of the 40meter OCF builders (I think the
>
> 40
>
>>>>>meter "Carolina Windom" would be an example), have tried to hit the
>>>>>flatter part of the curve by using a different offset calculation.
>>>
>>>Instead
>>>
>>>>>of D3/L=.167 for the 300 ohm point they used D1/L=.38 and D2/L=
>
> .62
>
>>>for
>>>
>>>>>a 100ohm point. They are using a 2:1 balun. In the inclosed info that
>>>
>>>came
>>>
>>>>>with the antenna it says it is using a 1:1 balun which I sincerely

>
> doubt.
>
>>>>>So I measured my antenna and the offset is closer to the second
>
> formula,
>
>>>>>than the first so I was confused.. If I cut it up and it did not work
>>>
>>>well
>>>
>>>>>and I knew what the balun was I would know which part of the curve (
>>>
>>>and
>>>
>>>>>the antenna) to head for! . So you can understand my intial
>
> reluctance
>
>>>to
>>>
>>>>>act. Perhaps this is being overly cautious. You get that way when you
>
> are
>
>>>>>given a "1:1" balun placed in the position where you would put 2:1
>
> in
>
>>>an
>>>
>>>>>antenna that usually uses a 4:1 AND the company does not answer
>>>
>>>questions
>>>
>>>>>about their product.
>>>>>
>>>>> I would highly recommend Cebik's article series on OCF antennas,
>
> in
>
>>>>>which he debunks a lot of their claims, especially the "vertical
>>>
>>>radiator"
>>>
>>>>>aspect of the feedline and the "yagi" performance. He basically
>
> argues
>
>>>>>that these claims are being backed up by overly simplified assumptions

>>>
>>>about
>>>
>>>>>the antenna being plugged into antenna modeling programs. He believes
>>>
>>>they
>>>
>>>>>are no different than dipoles really. For my purposes I wanted an
>>>
>>>antenna
>>>
>>>>>system with an offset feed because I can hide the feedline coax
>
> easier
>
>>>>>given my available tree locations. (and keep the XYL happier...) This
>>>>>antenna has a black balun and black insulated flexible wire which
>
> really
>
>>>>>blends in well on my heavily wooded lot. Right now I am trying to
>>>
>>>salvage
>>>
>>>>>the situation. This is the first time I have run into an amateur
>
> supply
>
>>>>>company that has behaved so poorly. It was a rude awakening. I may
>
> just
>
>>>do
>>>
>>>>>what you suggested. I hope I have the 4 to balun since I have other
>
> uses
>
>>>>>for it. If the down sizing doesn't work then I will either just swap
>>>
>>>out
>>>
>>>>>baluns or try a different approach, such as using a parallel feedline
>>>
>>>and
>>>
>>>>>not using the balun. We will see.
>>>>>
>>>>>
>>>>>

>>>>>
>>>>>
>>>>>"Dan Richardson" <ChangeThisToCallSign@mendolink.com> wrote in message
>>>>>news:8plvkv4tqdhja7t1faok0s33curesbe3b4@4ax.com...
>>>>>
>>>>>>On Fri, 29 Aug 2003 21:37:00 GMT, "Charles Wittnam"
>>>>>>><wittnam@bresnan.net> wrote:
>>>>>>
>>>>>>
>>>>>>> I am trying to salvage the situation before
>>>
>>>going
>>>
>>>>>to
>>>>>
>>>>>>>war with Antennas and More with my credit card company. They
>
> shipped
>
>>>the
>>>
>>>>>>>wrong antenna to me and have NOT answered numerous calls or emails.
>>>
>>>I
>>>
>>>>>was
>>>>>
>>>>>>>looking for a 40 meter OCF dipole and they sent me a 80 meter OCF,
>>>
>>>which
>>>
>>>>>>>was not what I ordered because of space limitations.
>>>>>>>If I could cut the thing down to use on 40 meters then I can save
>
> the
>
>>>>>>>inevitable hassle of dealing with this outfit and going to war with
>>>
>>>them
>>>
>>>>>via
>>>>>
>>>>>>>my credit card company.. However, my understanding is that a lot
>
> of
>
>>>the
>>>
>>>>>>>commercial builders of the OCF dipoles use a 2/1 balun for their 40
>>>

>>>meter
>>>
>>>>>>>antennas since they are trying to match a different impedance spot
>
> on
>
>>>the
>>>
>>>>>>>shorter antenna., hence it is not necessarily the case that you can
>>>
>>>just
>>>
>>>>>cut
>>>>>
>>>>>>>them down. Any thoughts?
>>>>>>>
>>>>>>>
>>>>>>>KD7HU
>>>>>>>
>>>>>>>
>>>>>>
>>>>>>Why not just scale the antenna? That's is to say, in your case,
>
> reduce
>
>>>>>>the length of the wires by a factor of ï¿½.
>>>>>>
>>>>>>Danny, K6MHE
>>>>>>
>>>>>>
>>>>>
>
>

4640. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 03:00:50 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl2p7f8pijhp12@corp.supernews.com>
Source record: 109183

It's often noted in texts that SWR is really a meaningless measure when applied to lossy lines. So I wouldn't unduly worry about strange SWR numbers for very lossy lines. Take a look at the analysis I just posted on another thread, which gives voltages, currents, impedances, and powers for an example case, and see if you can find anything wrong with it. The calculation used for reflection coefficient is based on its definition, namely reflected voltage divided by forward voltage. That agrees with all the transmission line and electromagnetics texts I have, which is getting to be quite a number now.

Roy Lewallen, W7EL

William E. Sabin wrote:
>
> In simulation programs, transmission lines are solved for their two-port
> parameters, and are then treated as lumped circuits in the actual
> simulation, just like any lumped-element circuit. Which is a good way
> to do it.
>
> I notice that in the ARRL Antenna Book, 19th edition , on page 24-7, it
> is stated with definite finality that the reflection coefficient formula
> uses the complex conjugate of Zo in the numerator.
> I also understand that this has been established by a "well-trusted
> authority".
>
> I have used Mathcad to calculate rho and VSWR for Reg's example, for
> many values of X0 (imaginary part of Z0) from -0 to -250 ohms.
>
> The data follows:
>
> Note: |rho1*| is conjugated rho1, SWR1 is for |rho1*|, |rho2| is not
> conjugated and SWR2 applies to |rho2|
>
> X0.......|rho1*|..SWR1.....|rho2|..SWR2
> -250..... 0.935...30.0.....1.865...-3.30
> -200..... 0.937...30.8.....1.705...-3.80
> -150..... 0.942...33.3.....1.517...-4.87
> -100..... 0.948...37.5.....1.320...-7.25
> -050..... 0.955...43.3.....1.131...-16.3
> -020..... 0.959...47.6.....1.030...-76.5
> -015..... 0.960...48.4.....1.010...-204
> -012..... 0.960...48.9.....0.997....+/- infinity
> -010..... 0.960...49.2.....0.990....+305
> -004..... 0.961...76.3.....0.974....+76.3
> 0000..... 0.961...50.9.....0.961....+50.9

>
> The numbers for not-conjugate rho are all over the place and lead to
> ridiculous numbers for SWR. It is also obvious that for a low-loss line
> it doesn't matter much. But values of rho greater than 1.0, on a Smith
> chart correspond to negative values of resistance (see the data).
>
> Something is wrong here that we are overlooking.
>
> The use of conjugate rho is so much better behaved that I have some real
> doubts about some of our conclusions on this matter.
>
> What about it folks? How can we get to the bottom of this?
>
> Bill W0IYH
>

4641. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 03:05:25 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308301905.7464add7@posting.google.com>
Source record: 109184

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<FTSdncrHXLkEdtKiXTWJiA@comcast.com>...
>
> I can't scan the whole chapter, and part of the next. You should be able to
> get your library to borrow the book for you. Or, look at some other college
> textbook under lossy lines. 5.2B is straightforward enough:
>
> Zo=(1/Yo)=SQRT[(R+jwL)/(G+jwC)]=Ro+jXo
>
> Tam/WB2TT

I've looked at the 9 pages you sent me, and I'm not certain what to
tell you.

They say, "the fact that the rho may exceed unity on a dissipative
line does not violate a condition of power conservation (as it would
on a lossless structure)."

On the one hand, I give them creedence for addressing the
concept...it's what i've been saying all along.
However, they don't explain why a lossy line can INCREASE the
reflected power! The lossless line would not attenuate the reflected
wave at all!

They also mention that the normalized load impedance Zn=Zr/Zo does
NOT have the same angle as Zr because Zo is complex in the general
case. This may or may not make their example moot.

And i don't trust their Smith Chart extended out to 1+sqrt(2) for
a dissipative line. Maybe for an active network, but not a passive
one.

Also, they go from equation 5.12 to 5.13 without showing us how
they got there. Perhaps they just copied it out of another book and
used the formula incorrectly.

Certainly text books can disagree, just as the "experts" often do.

Maybe this book is hard to find because it's out of print because
nobody trusted it.

Slick

4642. Re: Question about attenuators ...

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 03:20:20 UTC
From: Crazy George <munschNO@attglobal.net.SPAM>
Message-ID: <3f516a81_2@news1.prserv.net>
Source record: 109185

Doug:

To add to what Roy says, I have been able to only get 20 to 25 dB total attenuation at VHF with a single pot. And, the effect he overlooked is that unless you use the exact same electrical length cables, the attenuation will be different for every other configuration. So, if you develop a feel for knob position vs distance while hunting, it will change if you don't use exactly the same cables each time.

Haunt the swapfests and evilbay for attenuators. I have seen HP units go pretty cheap. Be careful of Kay brand, as they are known to have bad switches when they get old. If you want to learn the innards, that is a good way, rebuilding a Kay.

I think there was an old HP spectrum analyzer main frame with a model number like 853 which you can't give away these days. But, it has a nice rotary attenuator in it, if you find one. Then you just have to dispose of the rest of the box.

--
Crazy George
Remove NO and SPAM from return address

4643. Re: 50-300Ohm balun

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 04:19:01 UTC
From: gmz79@aol.comnospam
Message-ID: <20030831001901.03304.00000130@mb-m11.aol.com>
Source record: 109186

>> I have a car antenne with 50 Ohm coax that I want to
>connect to an old radio
>> with a 300 Ohm balanced input so I need a balun and
>impedance converter. Any info about how to build one will be welcome. (Being
>an amateur I don't want
>> to buy one.)
==========
You probably got one laying around.
you know that thing betweence the vcr and tv or cable box and tv?
75^ to 300^ close enough
73

Greg Z
to thine own sound be true

4644. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 04:32:47 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <Gt-dneWZG6UC58yiU-KYgw@comcast.com>
Source record: 109187

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308301905.7464add7@posting.google.com...
> However, they don't explain why a lossy line can INCREASE the
> reflected power! The lossless line would not attenuate the reflected
> wave at all!

They make a pont of the fact that they are *not* violating the concept of
conservation of energy
>
> They also mention that the normalized load impedance Zn=Zr/Zo does
> NOT have the same angle as Zr because Zo is complex in the general
> case. This may or may not make their example moot.

I don't see the problem. 100 /_30 degrees divided by 2/_5 degrees is 50/_15
degrees. Different phase angle. By general case they mean not the lossless
case.
>
> And i don't trust their Smith Chart extended out to 1+sqrt(2) for
> a dissipative line. Maybe for an active network, but not a passive
> one.

No idea. Never had to extend a Smith chart
>
> Also, they go from equation 5.12 to 5.13 without showing us how
> they got there.

They use the identity e**jx = cos x + jsin x

Perhaps they just copied it out of another book and
> used the formula incorrectly.

I don't think a technical textbook is supposed to introduce new concepts
unless they are labeled as such
>
> Certainly text books can disagree, just as the "experts" often do.
>
> Maybe this book is hard to find because it's out of print because
> nobody trusted it.

> Slick

As I said out front. The book is copyrighted 1960. There is a certain life
to these things.

Tam

4645. Should I run a Sky-wire loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 05:18:42 UTC
From: junkmail@altonillinois.com
Message-ID: <70729ae5.0308302118.56ac8c66@posting.google.com>
Source record: 109188

Should I run a Sky-wire loop?

I currently have a dipole hung by two trees about 30 feet off the ground.

I would replace the dipole and run the Skywire loop off the same trees, along with two more trees at the same height as the current dipole.

This antenna would only be used for receiving, and never for transmitting, the same for the dipole.

My question is, does anybody think it will make enough of a difference over the dipole to warrant running it?

I would also like to know what your views are on "grounding" either my current dipole, or the Sky-wire.

Currently, I have the coax center wire soldered onto one end of the dipole, and the braid soldered onto the other end. I was told that I should also ground the braid before it comes into the house and into the radio.

I do have a ground wire attached to GND screw on the back of the radio, going outside to a piece of copper pipe pounded into the ground. Is this enough, or do I need to also ground the braid, and if so, how? Will grounding help my reception, or decrease the noise on the line?

Thanks.

4646. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 05:19:23 UTC
From: nm5k@wt.net
Message-ID: <25eb70d7.0308302119.50a1da0@posting.google.com>
Source record: 109189

"Bob" <bob@agawamnet.com> wrote in message news:<jAudnT3x6ZLDpsyiXTWJjA@comcast.com>...
> The stock indoor seems fine for local VHF but not too good on the 800 mhz
> trunked system. How does the dicone work on the 800 mhz band?

Dunno. Never tried one. If it's outdoors or in the attic, it should be
better than a whip on a radio. It's kind of hard to get real good
performance from a vertical through that large a frequency range. You
might want to get a separate 800 mhz antenna. I've been trying
different antennas to try to improve cell phone signals. I made a
little 3 el yagi for cell phones out of 1/4 inch copper tubing.
"silver soldered plumbers delight" I bent the copper boom into an L,
so it can be held and pointed. I may try other antennas like corner
reflectors, bowties, etc, turned vertical for cell phone use. If you
are listening to trunked systems , you may need a fairly omni antenna.
Maybe a collinear vertical or something. You could make one from coax
sections and stick it in a tube of thin PVC. MK

4647. Re: Grounding question - this is wierd.....

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 05:42:53 UTC
From: Roger Halstead <newsgroups@rogerhalstead.com>
Message-ID: <4923lv07fdrj0fejj3gao1jli2gt95ohae@4ax.com>
Source record: 109190

On Sun, 24 Aug 2003 13:23:59 -0000, "David Robbins" <k1ttt@arrl.net>
wrote:

>
>"Adam T. Cately" <atcately@bright.net> wrote in message
>news:3F48AE6C.C00BA6B4@bright.net...
>> <SNIP>
>>
>> I haven't read the rest of the thread, but here's something glaringly
>> obvious...
>>
>> > Grounding will be easy when I get around to it - I have
>> > baseboard hot water radiators that I can ground to.
>>
>> NEVER ground to hot water pipes - ALWAYS use the cold water pipe,
>> as it goes directly to the earth outside the building. The hot water
>> pipes are routed through the hot water heater(s) and are NOT a direct
>> path to ground.
>>
>
>first a couple of truisms:
>NEVER say NEVER.
>NEVER believe anyone who asserts an ALWAYS.
>In the end an easy job is rarely as easy as you first thought.
>
>That being said, NEVER rely on pipes of any kind for safety (either AC or
>lightning) grounding of equipment, ALWAYS run your own wire to the proper
>ground rod or electrical service connection as required by electrical codes.
>
>RF "grounds" are another problem. The problem here is to remember that any

You reminded me of the sometimes tremendous difference between RF
ground and electrical ground.

Many years ago I had my station temporarily down in the basement when
I still lived with my folks. (bout 43 years ago) There was a storm
headed our way and I decided to disconnect the antenna and goround out
the station.

Well, when I grounded the transmitter (HT-37) by tying the coax to the
hot water heating system the signals on 20 actually got louder...I
didn't have much of an antenna to begine with. I thought I might as
well give it a try and actually worked a couple of South American
stations with the transmitter output tied to that 1" copper water
pipe. The ground terminal had a copper braid tied to it, but that had

to run out a window and tie to an 8' ground rod that was pretty much
in dry sand.

Good thing no one used the ahhh facilities while I was transmitting as
everything in the water system was hot.

Roger Halstead (K8RI EN73 & ARRL Life Member)
www.rogerhalstead.com
N833R World's oldest Debonair? (S# CD-2)
>conductor more than a small fraction of a wavelength will have currents
>induced in it and thus have a different voltage at one end than the other
>when exposed to an HF RF field. The real aim here is two fold: First, to
>provide a low resistance path for 'ground' currents back to the antenna end
>of the feedline so the currents in the feedline can be properly balanced.
>Second, to keep all equipment and personel in the antenna field near the
>same potential to prevent injury and reduce interference.
>

4648. EZ Way tower sheared hinge pin conclusion(?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 05:50:19 UTC
From: ddl@danlan.*com
Message-ID: <1156198@news1.IPSWITCHS.CMM>
Source record: 109191

For those who were interested in how it turned out (not that I'm sure the story is over):

I had some help from a contractor friend. He ground off the welds at the ends of the hinge plate and we were able to nudge the tower back into place; however, the pieces of the pin would not move after much hammering. We unbolted the hinge plate (which was remarkably easy considering the age of the bolts--why doesn't modern galvanized hardware hold up like that?) and took it back to his shop where he heated it with a big oxy/acetylene torch. The two pieces of pin eventually yielded to the heat and more hammering. Unfortunately, the pin appears to be a non-standard size between 5/8" and 3/4" (maybe a little more than 11/16"). A machine shop was able to turn down some 3/4" stainless rod, but it may be a bit too small and it isn't clear what stress it can take.

We brought the torch back to the tower, but after hours of heating, hammering, and oiling the piece of the pin in the central tube would not move. My friend was going to get a welder to cut off the tube and attach a new one but (and I wasn't actually there when this happened) he instead had the idea to slice off the ends of the tube and pin. This allowed the pin to come out. I cleaned out the carbonized lubricant as best I could, applied liberal grease, and put everything back together with the new pin. But now I'm a little worried about trying to tilt the tower:

-The central tube took a *lot* of abuse from the repeated heating and hammering. There are little beads of metal all over it which I assume is re-melted zinc galvanization. It is probably bent a bit as well.

-Because the central tube is now about 3/8" shorter than it was, a lot of the pin is exposed and the forces are no longer as close to shear.

-Because the pin isn't quite as big as the old one and the tower isn't perfectly balanced one side of the hinge plate is down about 1/8" making the tower a bit off plumb. The bottom of the tower is pressing against one side of the bottom bracket where it used to be centered.

-I have no idea how strong the new pin is.

So, everything is fine for now as the stress on the hinge is minimal when the tower is up. But I'd like to get somebody to look at it before I try to tilt and expose the hinge to a few thousand pounds of force...

Dan Lanciani
ddl@danlan.*com

4649. Extend range of wireless motion sensor

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 06:22:12 UTC
From: Ivan H <ivan_hendricks@hotmail.com>
Message-ID: <4r43lvk976h0ijde4481g06e94gnqn84sr@4ax.com>
Source record: 109192

I just bought a 400 ft wireless motion sensor and cannot get the distance I want (big suprise :)). Anyway, I have read a lot about directional antenas as well as cantenna's on newsgroups and websites when I was researching options for my home wireless network.

What I would like is a directional (beam) type antenna to see if I can go the full 400+ feet I really need to go. Could a cantenna or something of simular design work? I'm not an expert at radio or electronics, but I can follow directions. Any other suggestions would also be appreciated.

I have one of those 1000ft driveway sensors and could not get the range. Hooking up the receiver to my old television antenna, which I don't use anymore due to DISH, worked like a charm. I tried the same idea and it seemed to work at first with a dipole antenna connected to the transmitter and receiver connected to the tv antenna, but then stopped and never worked again at that range. Not sure why. It still works at closer ranges.

Thanks in advance.

Ivan

4650. Extending range of wireless motion sensor

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 06:28:54 UTC
From: Ivan H <ivan_hendricks@hotmail.com>
Message-ID: <bb53lvospg7ef19gnc4i1tol9l2uki51mi@4ax.com>
Source record: 109193

I just bought a 400 ft wireless motion sensor and cannot get the distance I want (big suprise :)). Anyway, I have read a lot about directional antenas as well as cantenna's on newsgroups and websites when I was researching options for my home wireless network.

What I would like is a directional (beam) type antenna to see if I can go the full 400+ feet I really need to go. Could a cantenna or something of simular design work? I'm not an expert at radio or electronics, but I can follow directions. Any other suggestions would also be appreciated.

I have one of those 1000ft driveway sensors and could not get the range. Hooking up the receiver to my old television antenna, which I don't use anymore due to DISH, worked like a charm. I tried the same idea and it seemed to work at first with a dipole antenna conntected to the transmitter, but then stopped and never worked again. Not sure why. It still works at shorter ranges.

Thanks in advance.

Ivan

4651. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 07:12:11 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <pjDAHvBLZUEAj1@ifwtech.co.uk>
Source record: 109194

Cecil Moore wrote:
>Ian White, G3SEK wrote:
>> Sorry, I didn't make myself clear. I believe you have specified more
>>numbers than you can know, in *each* example.
>> Therefore trying to distinguish between them is double-doomed :-))
>
>That was my whole point, Ian. Richard seems to believe those thing
>are specifiable. I assumed his belief for the purpose of seeing
>where it leads.

Ah, you lost me there.

>Even if one can somehow know those things, they
>still cannot be proven by measurements, or so it seems to me.

I don't believe transmitter output impedance is fundamentally
un-knowable... only that it is extremely difficult to measure in
practice. All the measurement techniques I've heard of seem to be
subject to either theoretical weaknesses or problems of practical
accuracy.

Fortunately, it's something we hardly ever *need* to know, so we can
work around it.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4652. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 07:30:18 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <swTxDHDKQaU$EAy3@ifwtech.co.uk>
Source record: 109195

Cecil Moore wrote:
>Why would you choose to handicap your knowledge by not looking inside
>the black box? Are you playing silly games or searching for knowledge?

Don't deride so-called "black boxes" - they are a very important tool
for finding new knowledge.

If a problem can be solved without knowing what's in the box, you have
found a very powerful solution that will work for *anything* inside
there.

Such general solutions don't always exist; but if you make a habit of
opening "black boxes" when it isn't necessary, you never will find a
general solution - and that's guar-an-teed.

>Who is prohibiting you from looking inside the box and thus
>contributing
>to the ignorance in the world?

I don't believe that's quite what you meant to say, but unwittingly it's
true! Rejecting the "black box" as a useful thinking tool is indeed
"contributing to the ignorance of the world."

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4653. Re: 50-300Ohm balun

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 07:38:06 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <dxGtTeEeXaU$EAUq@ifwtech.co.uk>
Source record: 109196

greg z wrote:
>>> I have a car antenne with 50 Ohm coax that I want to
>>connect to an old radio
>>> with a 300 Ohm balanced input so I need a balun and
>>impedance converter. Any info about how to build one will be welcome. (Being
>>an amateur I don't want
>>> to buy one.)
>==========
>You probably got one laying around.
>you know that thing betweence the vcr and tv or cable box and tv?
>75^ to 300^ close enough

Not in Europe - we use all-coaxial systems for TV over here (and are thankful for it).

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4654. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 10:40:32 UTC
From: kd1@sympatico.ca
Message-ID: <3F51D0A0.D83ED4F2@sympatico.ca>
Source record: 109198

Cecil Moore wrote:
>
> kd1@sympatico.ca wrote:
>
> > W5DXP wrote:
> >>Actually, Sqrt(Pref/Pfwd), the definition of rho.
> >
> > This definition seems incomplete. There is a choice of sign. How
> > do you pick?
>
> Should have said |rho|. |rho| is often used without its Gamma angle.

It still remains incomplete. The sign is needed to know Vr.

And, of course, the sign information was lost as soon as Vf and Vr
were converted to power. Leaving power out of the picture would
preserve this information. That you always convert to power and
discard this information seems inconsistent in light of your
comments below on always wanting the most information.

> > Yes, but only if the box is open. How do you analyze the black box
> > when you are only permitted to know the impedance at the inteface
> > looking towards the load?
>
> Why would you choose to handicap your knowledge by not looking inside
> the black box?

In practice, because one often does not know the implementation details
of the load or transmitter or ...

> Are you playing silly games or searching for knowledge?

Thinking of black boxes is an excellent tool to assist in the search
for knowledge. As a tool, it can help identify which information is
critical to a solution and which is not.

> Who is prohibiting you from looking inside the box and thus contributing
> to the ignorance in the world?

As a person searching for knowledge through thought experiments you
decide when to open the black box. Thinking of different content inside
the box which produce the same situations outside the box will help
you discover what is important and what is not.

Do consider adding this thinking tool to your toolbox. It is quite
powerful.

> >>There is NO physical discontinuity at the black box.
> >
> > Exactly, and people argue that it is inappropriate to claim that a
> > reflection occurs at this interface.
>
> Yes, it is inappropriate. There is nothing to stop the forward wave
> from flowing into the black box and nothing to stop the reflected
> wave from flowing out of it unless there's a physical impedance
> discontinuity at the black box.

And yet you feel quite free to state that sometimes there is NO
reflection when there IS an impedance discontinuity. All I want
is some consistency.

If you wish to claim that there are no NET reflections at some
impedance discontinuities, then, for consistency, we should also
be able to claim that there are NET reflections when there is
no impedance discontinuity.

Goose and gander.

...Keith

4655. Complex Z0

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 10:51:36 UTC
From: pez <pez7sv@hotmail.com>
Message-ID: <bisjvs$d1a$1@nic.grnet.gr>
Source record: 109197

Complex Z0
-
Maybe it has already been noticed,
but anyway,
it seems that,
given a uniform transmission line with
complex characteristic impedance,
the magnitude of the reflection coefficient
for any passive terminal load
is lower or equal than
-
Sqrt([1+Cos(t0)]/[1-Cos(t0)]),
-
where t0 is the argument of Z0.
-
Sincerely,
-
pez,SV7BAX
&
yin,SV7DMC

4656. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 10:52:32 UTC
From: kd1@sympatico.ca
Message-ID: <3F51D370.DC8E3C2F@sympatico.ca>
Source record: 109199

Cecil Moore wrote:
>
> kd1@sympatico.ca wrote:
> > Visualize the picture if there were reflections at the minima
> > and maxima. The plots would look exactly the same.
> > Curiousity -- why are you so sure there aren't? The picture
> > would be the same!
>
> Because the energy in bright ring interference patterns is NOT
> trapped between the dark rings. That you choose to remain ignorant
> of that centuries-old fact of physics is not my problem.

Seems to me there must be power in the light rings and none in
the dark rings. I am not sure where you get this notion of 'trapped',
but if there is no power in the dark rings, then the power from
the light rings is certainly not in the dark rings.

...Keith

4657. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:15:40 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308310315.3e699186@posting.google.com>
Source record: 109200

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<5I6dnaDcSpE60cyiXTWJig@comcast.com>...
> > >
> > > How does this allow for the sum of V+ and V- to be 0? That is what you
> have
> > > across a short.
> > >
> >
> > This is the correct answer, you just interpret it incorrectly.
> >
> > The reflection coefficient is defined as the reflected voltage
> > divided by the incident voltage. Sure, the voltage is zero right at
> > the short, but there is a reflected voltage wave that moves back
> > towards the generator.
> >
> > When you have a short, the phase is flipped 180 degrees, which is
> > exactly what the -1 means. Notice if you had a Zl=infinity, that the
> > RC would be +1, which would be full reflections INPHASE with the
> > generator, or in phase with the incident voltage wave.
> >
> > It's very simple stuff, but many people don't understand this.
>
> That's the whole point. By the conjugate formula RC is *not* -1. It is -1
> with a phase angle. I agree it works for an open circuit, since you can
> divide both sides by Zl, and anything divided by infinity is 0

It was clear that you misunderstood what the -1 meant.

Ok, -1 with a phase angle. I believe it, if the Zo is complex.
The point is that the ratio of the reflected to incident voltage is
one, and has nothing to with the DC voltage measured at the short
itself.

-1 with a phase angle would simply be 180 degrees phase shift,
plus or minus and additional angle.

I want you to tell me the significance of the fact that the
normalized load impedance Zn=Zr/Zo does NOT have the same angle as Zr
because Zo is complex in the general case. And how the example you
sent me may make be incorrect for this discussion.

Slick

4658. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:26:36 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308310326.27ef66eb@posting.google.com>
Source record: 109201

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<Gt-dneWZG6UC58yiU-KYgw@comcast.com>...
> "Dr. Slick" <radio913@aol.com> wrote in message
> news:1d15af91.0308301905.7464add7@posting.google.com...
> > However, they don't explain why a lossy line can INCREASE the
> > reflected power! The lossless line would not attenuate the reflected
> > wave at all!
>
> They make a pont of the fact that they are *not* violating the concept of
> conservation of energy

But they never explain WHY a lossy line can INCREASE the
reflected power! The lossless line would not attenuate the reflected
wave at all!

I don't trust their claims on this.

If you get more power reflected than you send into a passive
network, you are getting energy from nowhere, and are thus violating
conservation of energy.

> >
> > They also mention that the normalized load impedance Zn=Zr/Zo does
> > NOT have the same angle as Zr because Zo is complex in the general
> > case. This may or may not make their example moot.
>
> I don't see the problem. 100 /_30 degrees divided by 2/_5 degrees is 50/_15
> degrees. Different phase angle. By general case they mean not the lossless
> case.

I believe you mean 50 @ 25 degrees.

> >
> > And i don't trust their Smith Chart extended out to 1+sqrt(2) for
> > a dissipative line. Maybe for an active network, but not a passive
> > one.
>
> No idea. Never had to extend a Smith chart

Do some research, and you will never see an "extended Smith
Chart" for a passive network. Oh, certainly for a active device, for
stability circles and such, but passive networks can never have a rho
greater than 1.

> >
> > Also, they go from equation 5.12 to 5.13 without showing us how
> > they got there.

>
> They use the identity e**jx = cos x + jsin x
>

Yes? And? How did they get the Zo=(Zn-1)/(Zn+1) from this?

>
> As I said out front. The book is copyrighted 1960. There is a certain life
> to these things.
>
> Tam

But it seems to be out of print, perhaps with good reason...

Slick

4659. Complex Z0 [Corrected]

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:27:49 UTC
From: pez <pez7sv@hotmail.com>
Message-ID: <bism3qeti1@nic.grnet.gr>
Source record: 109202

Complex Z0 [Corrected]
-
Maybe it has already been noticed,
but anyway,
it seems [this time] that,
given a uniform transmission line with
complex characteristic impedance,
the magnitude of the reflection coefficient
for any passive terminal load
is lower or equal than
-
Sqrt([1 + Sin(Abs[t0])]/[1 - Sin(Abs[t0])]),
-
where t0 is the argument of Z0.
-
Sincerely,
-
pez,SV7BAX
&
yin,SV7DMC

4660. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:29:14 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308310329.5d7acf98@posting.google.com>
Source record: 109203

Opps!

I meant, how did they derive Reflection Coefficient=(Zn-1)/Zn+1)?

They certainly don't show us! This would be key to answering our questions.

Slick

4661. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:43:01 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bisn05$987$1@hercules.btinternet.com>
Source record: 109204

"Roy Lewallen" wrote

> It's often noted in texts that SWR is really a
meaningless measure when
> applied to lossy lines.
==========

In amateur SWR meter applications even the line is just
a figment of the imagination.

But that problem is easily solved - change the name
of the meter!

Reg

4662. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:48:36 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308310348.1d661038@posting.google.com>
Source record: 109205

"William E. Sabin" <sabinw@mwci-news> wrote in message
news:<vksu64dr33sec3@corp.supernews.com>...
>
> In simulation programs, transmission lines are
> solved for their two-port
> parameters, and are then treated as lumped
> circuits in the actual
> simulation, just like any lumped-element circuit.
> Which is a good way
> to do it.
>
> I notice that in the ARRL Antenna Book, 19th
> edition , on page 24-7, it is stated with definite
> finality that the reflection coefficient formula
> uses the complex conjugate of Zo in the numerator.
> I also understand that this has been established
> by a "well-trusted authority".
>

Also the same conjugate formula in Les Besser's
RF Fundamentals I, and Kurokawa, and the 1992 ARRL
general Handbook, which has NO term for Zo reactance, so
it assumes a purely real Zo.

This page also has the correct general formula:

http://www.zzmatch.com/lcn.html

> I have used Mathcad to calculate rho and VSWR for
> Reg's example, for many values of X0 (imaginary
> part of Z0) from -0 to -250 ohms.
>
> The data follows:
>
> Note: |rho1*| is conjugated rho1, SWR1 is for
> |rho1*|, |rho2| is not conjugated and SWR2 applies
> to |rho2|
>
> X0.......|rho1*|..SWR1.....|rho2|..SWR2
> -250..... 0.935...30.0.....1.865...-3.30
> -200..... 0.937...30.8.....1.705...-3.80
> -150..... 0.942...33.3.....1.517...-4.87
> -100..... 0.948...37.5.....1.320...-7.25
> -050..... 0.955...43.3.....1.131...-16.3
> -020..... 0.959...47.6.....1.030...-76.5

> -015..... 0.960...48.4.....1.010...-204
> -012..... 0.960...48.9.....0.997....+/- infinity
> -010..... 0.960...49.2.....0.990....+305
> -004..... 0.961...76.3.....0.974....+76.3
> 0000..... 0.961...50.9.....0.961....+50.9
>
> The numbers for not-conjugate rho are all over the
> place and lead to ridiculous numbers for SWR. It
> is also obvious that for a low-loss line it
> doesn't matter much. But values of rho greater
> than 1.0, on a Smith chart correspond to negative
> values of resistance (see the data).
>

Excellent work William. You are also showing how
a rho>1 leads to ridiculous numbers for the equation:

SWR = (1 + rho)/(1 - rho)

The non-conjugate equation simply cannot handle
complex Zo.

> Something is wrong here that we are overlooking.
>
> The use of conjugate rho is so much better behaved
> that I have some real doubts about some of our
> conclusions on this matter.
>
> What about it folks? How can we get to the bottom
> of this?
>
> Bill W0IYH

If you believe that there are theoretically no
reflections in a conjugate match, then with

Zl=50+j10 and Zo=50-j10,

the conjugate equation correctly cancels the reactances
giving no reflections, while the non-conjugate still
incorrectly gives a magitude (non zero) for rho.

Slick

4663. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:51:18 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308310351.2694d79e@posting.google.com>
Source record: 109206

>
> The equation in the ARRL Antenna Book is identical
> to the equation for rho that is in the Power Wave
> literature (see Gonzalez and also see Kurokawa).
> Also, numerous literature sources describe how an
> open-circuit generator with internal impedance Z0,
> connected directly to load ZL, is actually a power
> wave setup that leads to a rho formula that is
> identical to the formula in the ARRL Antenna Book.
> When calculating rho, it is not necessary to fool
> around with the wave equations, because frequency
> is constant and everything is steady-state.
>
> Bill W0IYH

Also the same conjugate formula in Les Besser's
RF Fundamentals I, and Kurokawa, and the 1992 ARRL
general Handbook, which has NO term for Zo reactance, so
it assumes a purely real Zo.

This page also has the correct general formula:

http://www.zzmatch.com/lcn.html

Slick

4664. Re: 50-300Ohm balun

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 11:52:58 UTC
From: petrus bitbyter <p.kralt@reducespamforchello.nl>
Message-ID: <ukl4b.21013$273.7137970@amsnews02.chello.com>
Source record: 109207

"Reg Edwards" <g4fgq.regp@btinternet.com> schreef in bericht
news:bir8cl$8sj$1@titan.btinternet.com...
> > I have a car antenne with 50 Ohm coax that I want to
> connect to an old radio
> > with a 300 Ohm balanced input so I need a balun and
> impedance converter. Any
> > info about how to build one will be welcome. (Being
> an amateur I don't want
> > to buy one.)
> ================================
>
> Dear Pieter, pleased to meet you.
>
> The first thing to say is that the impedance of the
> short length of coax line between antenna and receiver
> has very little to do with the unbalanced-to-balanced
> transformer between coax and receiver input. The coax
> is just a short length of wire between antenna and
> receiver with a relatively small capacitance between
> the the wire and ground.
>
> To design a transformer more information is needed. But
> whatever it is it will be a very easy to make. All you
> will need is a small ferrite ring and a length of thin
> enamelled copper wire.
>
> What range of frequencies would you like your receiver
> to cover? Long-waves, medium-waves, short-waves or VHF
> FM
>
> What sort of antenna are you using? Is it a simple
> vertical whip connected directly to the coax.?
>
> Is anything connected betwen the antenna and coax? How
> high is the whip. Is the height of the whip
> adjustable.
>
> Please provide more information and the number of turns
> of wire on what size ring can then be decided.
> ----
> Reg, G4FGQ
>
>
Reg,

Thanks for your reply. It is a "normal" car antenne meant to receive general AM/FM broadcasting. So as for the FM it will be somewhere between 80- and 110MHz. The antenne is about 1m long and has a kind of coil or spring near the bottom. It has 5.5 turns, 23mm diameter and a length of about 45mm. I guess this has to do with matching the antenna to the coax. A car radio just works fine but I also want to use it with an old (tube) radio. Not in a car but on the attic. You will understand that it is for experimental purposes. If only I want to receive general broadcasting, I just use a modern (transistorised) radio. I have a handfull of pink colored ferrite cores but I doubt they will be usefull around 100MHz. Nevertheless I hope I can get the core I need in the local electronics shop. You cannot be sure these days. They do not sell the 300 Ohm flat cable anymore. We're all cabled with 75 Ohm coax.

pieter

Outgoing mail is certified Virus Free.
Checked by AVG anti-virus system (http://www.grisoft.com).
Version: 6.0.511 / Virus Database: 308 - Release Date: 18-8-2003

4665. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 12:41:37 UTC
From: Tim <tim.mcc@tesco.net>
Message-ID: <3f51ecd4$1_2@mk-nntp-2.news.uk.tiscali.com>
Source record: 109208
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Airy R Bean" <SPAM@trap> wrote in message
news:3f0a7c6a$1_3@mk-nntp-1.news.uk.worldonline.com...
> Oops - must have been a lazy acceptance of the spelling chequer's
> suggestion...
> The original post definitely referred to control of your
> transceiver.
>
> Airy R Bean <SPAM@trap> wrote in message news:...
> > The original post definitely climaxed to control your
> > transceiver.
> > Hank Oredson <horedson@att.net> wrote in message
> > news:6EjOa.43125$0v4.2962203@bgtnsc04-news.ops.worldnet.att.net...
> > > > If the DX is going to be identified and
> > > > tracked for you, with your rig being tuned for you, as was implied,
> > > Seems like you have no clue what you are talking about.
>
>
>
as a detested 'CBER' who has been looking at joining the HAM ranks now for
quite a few years but never had the cash I must say I am tempted to say on
the Muppet band where at least everyone behaves with some sense of
understanding of live & let live if this conversation is a showing of the
true HAM colours then I think perhaps the roles a reversing. This has
certainly made me think three or four times weather to bother taking the
exams and taking up a HAM callsign.

4666. Re: Should I run a Sky-wire loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 13:09:30 UTC
From: Joe O <jenjoeo@zianet.com>
Message-ID: <3f51f490@news.zianet.com>
Source record: 109209

A Horizontal Loop will pickup less vertically polarized atmospheric noise. I am very satisfied with my 480 ft loop that is up 35 ft. For receive only, an ATU would not be necessary, but it will improve the signal strength at some frequencies.

My feedline is open line from the corner of the loop to the earth where there is a 1:1 current type balun. I connect the shield of the coax to a 8 ft ground rod. If your area is prone to lightning, I would install a polyphazer. The coax runs underground to the shack. The coax is only connected to the rig when I am actually using the antenna.

This reconfiguration is relatively inexpensive. Go for it and compare the results.

Joe O, KI5FJ

"Walter" <junkmail@altonillinois.com> wrote in message
news:70729ae5.0308302118.56ac8c66@posting.google.com...
> Should I run a Sky-wire loop?
>
>
> I currently have a dipole hung by two trees about 30 feet off the
> ground.
>
>
> I would replace the dipole and run the Skywire loop off the same
> trees, along with two more trees at the same height as the current
> dipole.
>
> This antenna would only be used for receiving, and never for
> transmitting, the same for the dipole.
>
> My question is, does anybody think it will make enough of a difference
> over the dipole to warrant running it?
>
> I would also like to know what your views are on "grounding" either
> my current dipole, or the Sky-wire.
>
> Currently, I have the coax center wire soldered onto one end of the
> dipole, and the braid soldered onto the other end. I was told that I
> should also ground the braid before it comes into the house and into
> the radio.
>
> I do have a ground wire attached to GND screw on the back of the
> radio, going outside to a piece of copper pipe pounded into the

> ground. Is this enough, or do I need to also ground the braid, and if
> so, how? Will grounding help my reception, or decrease the noise on
> the line?
>
> Thanks.

4667. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 13:29:05 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bist71$ke7$1@hercules.btinternet.com>
Source record: 109211

Ian wrote -
> I don't believe transmitter output impedance is
fundamentally
> un-knowable... only that it is extremely difficult to
measure in
> practice. All the measurement techniques I've heard
of seem to be
> subject to either theoretical weaknesses or problems
of practical
> accuracy.
>
==========

You lot will drive me to despair.

What's the problem?

You have just designed the PA.

You are familiar with its very simple internal
circuitry.

You have its component values, including the active
ones.

Hasn't it yet occurred to you engineering Ph.D's all
you have to do is calculate it.

Sewer kids in Rio have better arithmetical aptitudes.

Reg

4668. FS: Cushcraft MA5V Ham Radio Vertical antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 13:33:59 UTC
From: David Hawkins <dthawk@verizon.net.NOSPAM>
Message-ID: <bPm4b.18745$CC6.3246@nwrddc01.gnilink.net>
Source record: 109212
Cross-posted to: rec.radio.amateur.antenna,rec.radio.amateur.equipment

http://www.cushcraft.com/amateur/details.asp?catid=92

FS: Cushcraft MA5V Ham Radio Vertical antenna

Price: $75 to the first one to show up. Antenna was put up last year, and works great. Excellent condition. Getting ready to move and need to take down antenna. MSRP $199. Will not ship, must assist in taking down antenna.

Plano Texas

email: dthawk @ verizon . net

KB5WK

4669. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 13:41:54 UTC
From: Drink <drink@gnt.net>
Message-ID: <vl421l9dnu6f12@corp.supernews.com>
Source record: 109215

Of course, that's for use with a cell phone. Since, eavesdropping on cell phones is very illegal, right?
o_o_o_o
Best Regards, /| ,[_____],
Jim, WP3JQ |���L --O|||||||O-
()_)�()_) ������)_)
EM60qk 30.447439N 086.628959W

4670. Re: Complex Z0 [Corrected]

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 14:26:53 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bit0jdrhh1@hercules.btinternet.com>
Source record: 109213

> Complex Z0 [Corrected]
> -
> Maybe it has already been noticed,
> but anyway,
> it seems [this time] that,
> given a uniform transmission line with
> complex characteristic impedance,
> the magnitude of the reflection coefficient
> for any passive terminal load
> is lower or equal than
> -
> Sqrt([1 + Sin(Abs[t0])]/[1 - Sin(Abs[t0])]),
> -
> where t0 is the argument of Z0.
> -
==========

It is true the formula gives the greatest possible
magnitude of the reflection corfficient, Rho, for
any given value of the angle of Zo.

As t0 approaches -45 degrees, Rho approaches
1+Sqrt(2) = 2.414

As you must know, the formula is obtained by
differentiating Rho with respect to the angle of
Zo and then equating to zero.

It provides proof that values of Rho greater than
unity do exist. But a worship of mathematical logic
is not part of any religion on this newsgroup.

Reg, G4FGQ

4671. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 14:35:21 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <zbucna08gvQzms-iU-KYgg@comcast.com>
Source record: 109214

"Dr. Slick" <radio913@aol.com> wrote in message
news:1d15af91.0308310326.27ef66eb@posting.google.com...
> "Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<Gt-dneWZG6UC58yiU-KYgw@comcast.com>...
> > "Dr. Slick" <radio913@aol.com> wrote in message
> > news:1d15af91.0308301905.7464add7@posting.google.com...

> But they never explain WHY a lossy line can INCREASE the
> reflected power! The lossless line would not attenuate the reflected
> wave at all!
>
> I don't trust their claims on this.
>
> If you get more power reflected than you send into a passive
> network, you are getting energy from nowhere, and are thus violating
> conservation of energy.
>
>
But the reflection coefficient is for Voltage. I think the clew lies in "The
main point of interest lies in the fact that we cannot, in general,
superpose the average powers carried by incident and reflected waves on a
dissipative line, although we could do so on a lossless line" A/C/F
>.
> >
> > I don't see the problem. 100 /_30 degrees divided by 2/_5 degrees is
50/_15
> > degrees. Different phase angle. By general case they mean not the
lossless
> > case.
>
>
> I believe you mean 50 @ 25 degrees.
>
>
Yeah, I started typing this line before I had decided what numbers to use.
>
> > >
>
> > > Also, they go from equation 5.12 to 5.13 without showing us how
> > > they got there.
> >
> > They use the identity e**jx = cos x + jsin x
> >
>

>
> Yes? And? How did they get the Zo=(Zn-1)/(Zn+1) from this?
>
>
I think the math is the same as for a lossless line
> >
> > As I said out front. The book is copyrighted 1960. There is a certain
life
> > to these things.
> >
> > Tam
>
>
> But it seems to be out of print, perhaps with good reason...
>
>
> Slick
The "print file" for a book used to be stored on hundreds of tin or lead
plates. Two N pages per plate. After printing some number of books, these
plates would have been recycled. I don't know that there was not a newer
edition.

Tam/WB2TT

4672. Re: 50-300Ohm balun

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 15:00:14 UTC
From: gmz79@aol.comnospam
Message-ID: <20030831110014.13238.00000350@mb-m15.aol.com>
Source record: 109216

>You probably got one laying around.
>>you know that thing betweence the vcr and tv or cable box and tv?
>>75^ to 300^ close enough
>
>Not in Europe - we use all-coaxial systems for TV over here (and are
>thankful for it).
>
>
>--
>73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
> Editor, 'The VHF/UHF DX Book'
>http://www.ifwtech.co.uk/g3sek
>====================================
Too bad, I have a hard time walking around the block without seeing
at least 1 of these laying around on the ground.
Sell at the store sometimes > .69USD
Love your website Ian,bookmarked it a while back,good info.
73
KC8VIF
Greg Z
to thine own sound be true

4673. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 15:06:33 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <ltGcnV0RDp1jk8-iU-KYgg@comcast.com>
Source record: 109217

Let's start all over on this.

1. You have a transmission line of Zo= 1 - j1
2. Zo* = 1 + j1
3 Short the end of the line
4. By the classic formula RC= (0 - (1 - j1))/(0 + (1 - j1))
= -(1 - j1)/(1 - j1) = -1
5. By Besser's formula RC = (0 - (1 + j1))/(0 + (1 - j1))
which is (-1 -j1)/(1 - j1)
6. The above is SQRT(2)/_-135 / SQRT(2) /_-45 = 1/_-90
7. Note that RC has angle -90, not 180.
8. Reflected voltage is now (V+) x (1/_-90). This is in quadrature with V+,
not in opposition with.
9. This won't meet the boundary condition that (V+) + (V-) = 0
10. You can use a different phase angle for Zo if you like, but the only Zo
phase angle that will give you RC = 1/_180 is 0.

Tam/WB2TT

4674. Re: EZ Way tower sheared hinge pin conclusion(?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 15:35:50 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F5215D6.4E87FA6D@cwis.net>
Source record: 109218

Dan,
Getting someone who knows what he's doing to look at it is
a very good idea. Probably the simplest solution is to have
another base plate made (not cheapest, simplest). With all the
heating/cooling/pounding/etc., I don't think I'd trust the
present base plate and hinge much...
'Doc

4675. Re: Should I run a Sky-wire loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 15:43:30 UTC
From: 'Doc <w5lz@cwis.net>
Message-ID: <3F5217A2.B651D231@cwis.net>
Source record: 109069

Walter,
It depends a lot on what type of feed line you use. If
you use coax to feed the loop, performance will probably
be about the same or worse than the dipole. If you use an
open wire or ladder line feed line through a tuner, you will
probably see ~some~ difference between the two antennas. How
much is anyone's guess. I like large loop antennas. I've
found that using ladder line and a tuner will make them usable
on more than one band and usually performs better than a dipole
used the same way (I don't have the best place to put up an
antenna to start with). Every installation is different so
what works great for me, here, may not work very well at your
location. Having said that, try the loop. If you don't like
how it performs, change back.
'Doc

4676. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 16:13:17 UTC
From: Hugh <hugh@frontiernet.net>
Message-ID: <x8p4b.2691$Fm2.417@news01.roc.ny>
Source record: 109070
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Tim wrote:
> "Airy R Bean" <SPAM@trap> wrote in message
> news:3f0a7c6a$1_3@mk-nntp-1.news.uk.worldonline.com...
>
>>Oops - must have been a lazy acceptance of the spelling chequer's
>>suggestion...
>>The original post definitely referred to control of your
>>transceiver.
>>
>>Airy R Bean <SPAM@trap> wrote in message news:...
>>
>>>The original post definitely climaxed to control your
>>>transceiver.
>>>Hank Oredson <horedson@att.net> wrote in message
>>>news:6EjOa.43125$0v4.2962203@bgtnsc04-news.ops.worldnet.att.net...
>>>
>>>>If the DX is going to be identified and
>>>>tracked for you, with your rig being tuned for you, as was implied,
>>>>
>>>Seems like you have no clue what you are talking about.
>>
>>
>>
> as a detested 'CBER' who has been looking at joining the HAM ranks now for
> quite a few years but never had the cash I must say I am tempted to say on
> the Muppet band where at least everyone behaves with some sense of
> understanding of live & let live if this conversation is a showing of the
> true HAM colours then I think perhaps the roles a reversing. This has
> certainly made me think three or four times weather to bother taking the
> exams and taking up a HAM callsign.
>
>

Tim,
What do you care if they dont like CB? Who cares what anyone thinks?
Get the handbooks from ARRL. You will see they are not the driving force
they think they are. And good luck with your tests

Hugh

4677. Re: EZ Way tower sheared hinge pin conclusion(?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 16:16:41 UTC
From: n2ion@aol.com
Message-ID: <20030831121641.17996.00000165@mb-m01.aol.com>
Source record: 109071

HI,
I HAD A 60' EASY WAY A FEW YEARS AGO, AND HAD A VERY SIMILAR PROBLEM. AFTER I GOT THE OLD PIN OUT, I ALSO WANT TO A MACHINE SHOP. HE MADE ME A STAINLESS STEEL PIN, EXACTLY THE SAME AS THE OLD ONE. IT WORK FOR ME FOR ABOUT 5 YEARS, AT WHICH TIME A SOLD THE TOWER(WISH I STILL HAD IT).

73,
JEFF

4678. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 16:18:35 UTC
From: Richard Clark <kb7qhc@comcast.net>
Message-ID: <6u74lv0t88f0q2pg785qh79d62r8h1spbg@4ax.com>
Source record: 109072

On Sun, 31 Aug 2003 13:29:05 +0000 (UTC), "Reg Edwards"
<g4fgq.regp@btinternet.com> wrote:

>Sewer kids in Rio have better arithmetical aptitudes.

And more confidence.

4679. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 16:47:43 UTC
From: Dave VanHorn <dvanhorn@cedar.net>
Message-ID: <7bGcnQeYaL4tu8-iXTWJkA@comcast.com>
Source record: 109073
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

> Tim,
> What do you care if they dont like CB? Who cares what anyone thinks?
> Get the handbooks from ARRL. You will see they are not the driving force
> they think they are. And good luck with your tests

Come on in, the water's fine. Ignore the toads with "shark" tee shirts.

4680. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 16:48:47 UTC
From: fmmck@aol.com
Message-ID: <20030831124847.06003.00000240@mb-m07.aol.com>
Source record: 109074

<<
Try http://w1.859.telia.com/~u85920178/use/gdo.htm

BR from Ivan

"Tom Coates" <tecoates@comcast.net> wrote in message
news:<rQCdnfXCtI-Y9daiXTWJgA@comcast.com>...
>
> How do I couple the meter to the antenna?
>
> Tom, N3 >>

Ivan & Tom-

I've had a couple of old Heath GDOs over the years. I was never able to find a dip by coupling into the antenna's co-ax. I see that Ivan's article above contains the "secret" method I finally found that works - you have to short-circuit the feedpoint of the antenna and couple directly to the element.

The article above suggests that you can form a loop in the antenna wire to couple more tightly to the GDO. However, that would tend to introduce inductance which would interfere with the measurement. What I do is lay the coil next to the antenna element so the antenna wire is parallel with the GDO coil wire tangent.

For example, take a one meter wire or un-bent coat hanger. A GDO coupled to it should have a dip at 150 MHz. I expect there will also be a dip around 450 MHz, et cetera (odd harmonics).

73, Fred, K4DII

4681. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 16:55:16 UTC
From: "Airy R. Bean" <me@privacy.net>
Message-ID: <3f522a1c_1@mk-nntp-1.news.uk.worldonline.com>
Source record: 109076
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Yes. Stay in CB where you belong.

Unless you have an interest in technical matters, which
will to a large extent remove any need to spend a lot of money,
then you don't have the makings of a Radio Ham anyway.

Tim <tim.mcc@tesco.net> wrote in message
news:3f51ecd4$1_2@mk-nntp-2.news.uk.tiscali.com...
> as a detested 'CBER' who has been looking at joining the HAM ranks now for
> quite a few years but never had the cash I must say I am tempted to say on
> the Muppet band where at least everyone behaves with some sense of
> understanding of live & let live if this conversation is a showing of the
> true HAM colours then I think perhaps the roles a reversing. This has
> certainly made me think three or four times weather to bother taking the
> exams and taking up a HAM callsign.

4682. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 16:59:36 UTC
From: fmmck@aol.com
Message-ID: <20030831125936.06003.00000241@mb-m07.aol.com>
Source record: 109075

<<
The stock indoor seems fine for local VHF but not too good on the 800 mhz trunked system. How does the dicone work on the 800 mhz band? >>

Bob-

A basic discone has about a ten to one frequency range. The latest version of Radio Shack's discone has a vertical element added so it can be used to transmit on the Six Meter Ham Band. The earlier version without the vertical element, was good from about 100 MHz to 1000 MHz.

The discone is intended for use with scanners. Even with the Six Meter element, it is probably the best choice readily available to cover all frequencies up to the 900 MHz Ham Band. You may be able to remove the element and see if it makes any difference at the higher frequency.

73, Fred, K4DII

4683. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 17:09:47 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f522d65_7@corp.newsgroups.com>
Source record: 109077

Ian White, G3SEK wrote:
> If a problem can be solved without knowing what's in the box, you have
> found a very powerful solution that will work for *anything* inside there.
>
> Such general solutions don't always exist; but if you make a habit of
> opening "black boxes" when it isn't necessary, you never will find a
> general solution - and that's guar-an-teed.

The other side of the coin is that a black box can be used to obscure the truth. It's easy to use a TDR to find out if the apparent steady-state short at the black box terminals is physical or not. But such an experimental act is prohibited by the steady-state religion. A large percentage of the black box examples on this newsgroup are designed to obscure, not enlighten. If obscuring is the goal, let's perform our black box experiments in total darkness to make it even more challenging for truth-seekers.
--
73, Cecil http://www.qsl.net/w5dxp

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4684. Re: 50-300Ohm balun

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 17:11:58 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f522de7_7@corp.newsgroups.com>
Source record: 109078

greg z wrote:
> You probably got one laying around.
> you know that thing betweence the vcr and tv or cable box and tv?
> 75^ to 300^ close enough
> 73

Is the old radio an AM, FM, or both? I'm not sure the 75/300 TV
balun is rated for 1 MHz operation.
--
73, Cecil http://www.qsl.net/w5dxp

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4685. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 17:54:55 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <bFqdneTDV_zuq8-iU-KYvg@comcast.com>
Source record: 109079

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bist71$ke7$1@hercules.btinternet.com...
> What's the problem?
>
> You have just designed the PA.
>
> You are familiar with its very simple internal
> circuitry.
>
> You have its component values, including the active
> ones.
>
> Hasn't it yet occurred to you engineering Ph.D's all
> you have to do is calculate it.

Reg,

I am *not* a PhD, but, I can tell you what the problem is. You don't know what the transistor's Norton equivalent collector (drain) resistance is at DC, let alone RF. It is generally not on data sheets. They will often specify an "output impedance". This is a convenience for people who *think* they are doing conjugate matching. The real component of this has absolutely nothing to do with a particular device, outside of second order effects caused by series lead inductances.

Check out Motorola application notes AN282A, 721, and 1033. The following is a quote from AN1033:

"The output impedance of a microwave power transistor is usually defined as the conjugate of the load impedance required to achieve the desired performance. A typical output equivalent circuit is shown in Fig1. { Shows current source in parallel with Cout and resistor labeled <transformed load impedance>. From these two nodes there are inductor Lc and Lcom going to the output terminals}. The capacitor Cout is nearly equal to the collector - base capacitance Cob specified for the selected transistor. Lc is the inductance of the bond wire used to bridge from the collector metallization area to the package output lead, and Lcom represents the inductive effects of the common element bond wire"

"For correct operation of the transistor, the ultimate load impedance must be transformed to a real impedance across the current generator. This real impedance is determined by

RL = (Vcc - VCEsat)^2/(2Pout)

The load impedance presented to the package terminals will contain the real impedance at the current generator, transformed to a lower value by the low pass section formed by Cout and the parasitic inductances Lc and Lcom. Usually the reactive part of the load impedance is made inductive to tune out the residual capacitance of the device."

One of the other ap notes mentioned collector resistance to the extent that it is "high". This kind of analysis is not limited to transistors. For kicks, I calculated the load for an 813 tube, and got the same value as a book I was reading, which used a roundabout method. The other ap note also made a point of the fact that if you were actually conjugate matched, the efficiency could never be more than 50%.

Tam/WB2TT

4686. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 17:58:55 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f5238e9_7@corp.newsgroups.com>
Source record: 109080

kd1@sympatico.ca wrote:

> Cecil Moore wrote:
>>Should have said |rho|. |rho| is often used without its Gamma angle.
>
> It still remains incomplete. The sign is needed to know Vr.

The point was that Pref=0 and therefore, there is no sign to deal
with for rho=Sqrt(Pref/Pfwd). +0 = -0

> And, of course, the sign information was lost as soon as Vf and Vr
> were converted to power.

In the example case, Pref=0 and therefore rho=0. What difference does
the sign make when rho=0?

> Thinking of black boxes is an excellent tool to assist in the search
> for knowledge. As a tool, it can help identify which information is
> critical to a solution and which is not.

That's true, but refusing to open the black box when it is possible to
do so to gain knowledge is sheer nonsense for truth-seekers. OTOH, it
is a great tool for someone who is seeking to obscure the truth and
promote the steady-state religion at all costs.

> As a person searching for knowledge through thought experiments you
> decide when to open the black box.

Yes, and what is the person, who then objects to the opening,
searching for?

> Do consider adding this thinking tool to your toolbox. It is quite
> powerful.

It is in my toolbox but it does not dictate my attitudes toward
reality. If it is finally possible to open the black box in
order to ascertain the truth, I will certainly open it. Before
that, I will subject it to TDR experiments, something you would
no doubt object to since it is not "steady-state". With a TDR,
it is duck soup to prove that an open-circuit 1/4WL stub is
not shorted at the mouth of the stub.

> And yet you feel quite free to state that sometimes there is NO
> reflection when there IS an impedance discontinuity. All I want
> is some consistency.

I said there is no NET reflection at a Z0-match. I provided the
following s-parameter equation to illustrate that the two

reflections at a Z0-match will superpose and cancel each other.
b1 = s11*a1 + s12*a2 Do you understand the s-parameter equations?
If not, HP's AN 95-1 is available for download from the web.

> If you wish to claim that there are no NET reflections at some
> impedance discontinuities, then, for consistency, we should also
> be able to claim that there are NET reflections when there is
> no impedance discontinuity.
>
> Goose and gander.

I suggest you study and understand the difference between a logically inclusive statement and a logically exclusive statement. The difference lies in the use of the word "some" Vs "all". Above you performed a logical switcharoo when you went from "some" to an implication of "all". That is known in logic as an "argumentum ad absurdum".

Sometimes, there are NET reflections at a physical impedance discontinuity. If a single RF source signal exists, there are always component reflections at a physical impedance discontinuity.

Sometimes, there are no NET reflections at a physical impedance discontinuity because the two component reflections cancel. This is true of Z0-matched systems with reflections.

Sometimes, there are net reflections existing where there is no impedance discontinuity. They are the result of reflections at a physical impedance discontinuity somewhere else. Reflected waves are traveling waves. They travel from their point of origin to other places in the system.

Sometimes, there are no net reflections where there is no impedance discontinuity, e.g. a flat system.
--
73, Cecil http://www.qsl.net/w5dxp

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4687. Re: Re-Normalizing the Smith Chart (Changing the SWR into the

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:05:30 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f523a75_7@corp.newsgroups.com>
Source record: 109081

kd1@sympatico.ca wrote:
> Seems to me there must be power in the light rings and none in
> the dark rings.

Yes

> I am not sure where you get this notion of 'trapped',

:-) Good one :-) You say the power in a transmission line is trapped between the zero power points and cannot cross the boundary. The transmission line is virtually identical to the bright and dark rings in a light interference pattern.

> but if there is no power in the dark rings, then the power from
> the light rings is certainly not in the dark rings.

Point is, the energy in the bright rings is not trapped there. It continues to flow in a straight line. The bright rings and dark rings are the result of interference between two beams of light traveling in straight lines at the speed of light. The voltage-zero and voltage-maximum points on a transmission line are the result of interference between two waves traveling in straight lines at the speed of light. In the absence of a physical impedance discontinuity, there is nothing to change their momentum. Their momentum allows them to "coast" across a voltage-zero point.
--
73, Cecil http://www.qsl.net/w5dxp

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4688. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:10:58 UTC
From: PM <mooney@cytanet.com.cy>
Message-ID: <pan.2003.08.31.18.10.53.131557@cytanet.com.cy>
Source record: 109082
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

On Sun, 31 Aug 2003 13:41:37 +0100, Tim wrote:

>
> "Airy R Bean" <SPAM@trap> wrote in message
> news:3f0a7c6a$1_3@mk-nntp-1.news.uk.worldonline.com...
>> Oops - must have been a lazy acceptance of the spelling chequer's
>> suggestion...
>> The original post definitely referred to control of your
>> transceiver.
>>

Sorry, got to ask - was the mis-spelling of 'chequer' deliberate?

Paul M

4689. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:21:22 UTC
From: Bob <??@comcast.net>
Message-ID: <HNWdnU7qWPE5oc-iXTWJkA@comcast.com>
Source record: 109083

All,
Thanks for the input....I guess I will try out the RS dicone.

Bob

"Fred McKenzie" <fmmck@aol.com> wrote in message
news:20030831125936.06003.00000241@mb-m07.aol.com...
> <<
> The stock indoor seems fine for local VHF but not too good on the 800 mhz
> trunked system. How does the dicone work on the 800 mhz band? >>
>
> Bob-
>
> A basic discone has about a ten to one frequency range. The latest
version of
> Radio Shack's discone has a vertical element added so it can be used to
> transmit on the Six Meter Ham Band. The earlier version without the
vertical
> element, was good from about 100 MHz to 1000 MHz.
>
> The discone is intended for use with scanners. Even with the Six Meter
> element, it is probably the best choice readily available to cover all
> frequencies up to the 900 MHz Ham Band. You may be able to remove the
element
> and see if it makes any difference at the higher frequency.
>
> 73, Fred, K4DII
>

4690. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:39:07 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f524255_7@corp.newsgroups.com>
Source record: 109085

Dr. Slick wrote:
> I meant, how did they derive Reflection Coefficient=(Zn-1)/Zn+1)?
> They certainly don't show us! This would be key to answering our questions.

Not taking sides here, just hopefully contributing something.

The s-parameters normalize voltages to the square root of Z0
such that the square of 'a1' is incident power normalized to
Z0=1.0. The standard Smith Chart is normalized to Z0=1.0. Thus
s-parameter quantities can be plotted directly on a standard
Smith Chart. The above equation looks as if Z0=1.0 for
normalization purposes. If 50 ohms is normalized to 1.0,
then Zn is probably Z1 also normalized to 50 ohms, i.e.
(Z1-Z0)/(Z1+Z0) = [(Z1/Z0)-(Z0/Z0)]/[(Z1/Z0)+(Z0/Z0)] =
(Zn-1)/(Zn+1) = s11. The 'n' in Zn may mean Z1 "normalized".
--
73, Cecil http://www.qsl.net/w5dxp

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4691. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:42:42 UTC
From: "Ian White, G3SEK" <G3SEK@ifwtech.co.uk>
Message-ID: <nOpTsxCiGkU$EARZ@ifwtech.co.uk>
Source record: 109084

Reg Edwards wrote:
>Ian wrote -
>> I don't believe transmitter output impedance is
>fundamentally
>> un-knowable... only that it is extremely difficult to
>measure in
>> practice. All the measurement techniques I've heard
>of seem to be
>> subject to either theoretical weaknesses or problems
>of practical
>> accuracy.
>>
>==========
>
>You lot will drive me to despair.
>
>What's the problem?
>
>You have just designed the PA.
>
>You are familiar with its very simple internal
>circuitry.
>
>You have its component values, including the active
>ones.
>
>Hasn't it yet occurred to you engineering Ph.D's all
>you have to do is calculate it.
>
>Sewer kids in Rio have better arithmetical aptitudes.

Sorry, I don't have an engineering PhD... but if *you* think it's so simple, then lay your money down: show us.

--
73 from Ian G3SEK 'In Practice' columnist for RadCom (RSGB)
Editor, 'The VHF/UHF DX Book'
http://www.ifwtech.co.uk/g3sek

4692. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:43:36 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f524362$1_7@corp.newsgroups.com>
Source record: 109086
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Tim wrote:
> as a detested 'CBER' who has been looking at joining the HAM ranks now for
> quite a few years but never had the cash I must say I am tempted to say on
> the Muppet band where at least everyone behaves with some sense of
> understanding of live & let live if this conversation is a showing of the
> true HAM colours then I think perhaps the roles a reversing. This has
> certainly made me think three or four times weather to bother taking the
> exams and taking up a HAM callsign.

Please don't confuse usenet with ham radio. Except for a few really
bad apples (which also exist in CB) hams on the air are polite and
courteous and generally abide by "The Amateur's Code". That code
obviously doesn't exist on usenet.
--
73, Cecil http://www.qsl.net/w5dxp

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4693. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:46:28 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f52440e_7@corp.newsgroups.com>
Source record: 109087

Reg Edwards wrote:
> Hasn't it yet occurred to you engineering Ph.D's all
> you have to do is calculate it.

Of course, but can you prove that impedance is what is "seen"
by the incident reflected waves? Dr. Bruene attempted it and
AFAIAC, didn't succeed because his ping frequency was different
from the operating frequency.
--
73, Cecil http://www.qsl.net/w5dxp

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4694. Re: Extending range of wireless motion sensor

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:48:41 UTC
From: Ivan H <ivan_hendricks@hotmail.com>
Message-ID: <keg4lvgrf8qhc66c1j5l2c9ahueet33mi0@4ax.com>
Source record: 109090

Well, I did get it working with a different dipole. Now my problem is when the antenna is connected to the motion sensor, it continuously trips the motion sensor. If I unplug it, it only trips when it senses motion. Could some sort of interference/noise received by the dipole be causing the unit to trip all the time? How could I solve this?

I know my questions are not specifically related to amateur radios, but I figured this would be the best place to find an answer as I am dealing with signal transmission and antennas.

Cheers,
Ivan

On Sat, 30 Aug 2003 23:28:54 -0700, Ivan H
<ivan_hendricks@hotmail.com> wrote:

>I just bought a 400 ft wireless motion sensor and cannot get the
>distance I want (big suprise :)). Anyway, I have read a lot about
>directional antenas as well as cantenna's on newsgroups and websites
>when I was researching options for my home wireless network.
>
>What I would like is a directional (beam) type antenna to see if I can
>go the full 400+ feet I really need to go. Could a cantenna or
>something of simular design work? I'm not an expert at radio or
>electronics, but I can follow directions. Any other suggestions would
>also be appreciated.
>
>I have one of those 1000ft driveway sensors and could not get the
>range. Hooking up the receiver to my old television antenna, which I
>don't use anymore due to DISH, worked like a charm. I tried the same
>idea and it seemed to work at first with a dipole antenna conntected
>to the transmitter, but then stopped and never worked again. Not sure
>why. It still works at shorter ranges.
>
>Thanks in advance.
>
>Ivan

4695. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 18:54:47 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl4h3v88t2sd95@corp.supernews.com>
Source record: 109088

Cecil, I'd be really interested in seeing your analysis of the "power flow" in the example I recently posted of a transmission line with complex Z0.

Roy Lewallen, W7EL

4696. Re: How many rho? was: Re-Normalizing the Smith Chart

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:00:13 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f524747_7@corp.newsgroups.com>
Source record: 109091

Roy Lewallen wrote:
> Cecil, I'd be really interested in seeing your analysis of the "power
> flow" in the example I recently posted of a transmission line with
> complex Z0.

Sorry, I don't have the energy right now. Too busy sleeping 16
hours a day. Maybe later.
--
73, Cecil http://www.qsl.net/w5dxp

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http://www.newsfeeds.com - The #1 Newsgroup Service in the World!
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4697. Re: A Subtle Detail of Reflection Coefficients (but important to know)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:04:57 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl4hn1lqe6f502@corp.supernews.com>
Source record: 109089

A few days ago I posted a derviation of the (non-conjugate) formula for voltage reflection coefficient on a transmission line. It required only a few assumptions:

1. That the voltage reflection coefficient is the ratio of reverse to forward voltage.
2. That the voltage at any point along the line, including the ends, is the sum of the forward and reverse voltages, and that the current is the sum of forward and reverse currents.
3. That the ratio of forward voltage to forward current, and the ratio of reverse voltage to reverse current, equal the characteristic impedance of the transmission line.

Given these assumptions, the derivation is a matter of straightforward algebra.

For those promoting some other formula for voltage reflection coefficient: Which of the above assumptions is false? What substitute assumption is true? And what's *your* dervivation? Remember, we're talking about transmission lines here, not a one- or two-port analysis with a "reference impedance" instead of a transmission line, and where there's no restriction that the total voltage and current are simply the sum of the forward and reverse components.

Roy Lewallen, W7EL

4698. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:06:18 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <IdidnS0b84Sw2s-iXTWJjA@comcast.com>
Source record: 109092

"Cecil Moore" <Cecil.A.Moore@ieee.org> wrote in message
news:3f524255_7@corp.newsgroups.com...
The 'n' in Zn may mean Z1 "normalized".
> --
> 73, Cecil http://www.qsl.net/w5dxp
Yes.

Tam

4699. Re: Attic antenna

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:09:26 UTC
From: Bob <??@comcast.net>
Message-ID: <xY2cna8_VOl12s-iXTWJig@comcast.com>
Source record: 109093

Thanks Jim...Just starting in the hobby so I'm sure I will go through some different types of equipment.

"Drink" <drink@gnt.net> wrote in message news:vl3tfqnul80jf4@corp.supernews.com...
> I second the notion for a Radio Shack discone antenna. It's just what
> you're asking for unless you want directivity & gain to focus on areas. In
> that case, I recommend a log-periodic dipole for VHF/UHF.
> In the latter case, it depends on your geographic position and interests.
> If you're in the burbs and interests lay in the town 10 miles away, then
> you'd turn the LPD array toward town at it'd be better. Just food for
> thought.
> Maybe if you're very serious, you could eventually put both in the attic.
> An antenna switch and a rotator... Bam! The best of both worlds.
> o_o_o_o
> Best Regards, /| ,[_____],
> Jim, WP3JQ |���L --O|||||||O-
> ()_)�()_) �����)_)
> EM60qk 30.447439N 086.628959W
>
>

4700. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:16:49 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f524b2b$1_7@corp.newsgroups.com>
Source record: 109095

Roy Lewallen wrote:
> 1. That the voltage reflection coefficient is the ratio of reverse to
> forward voltage.
> For those promoting some other formula for voltage reflection
> coefficient: Which of the above assumptions is false?

Number 1 is not always true for s11, the s-parameter reflection
coefficient.

> What substitute assumption is true?

For an s-parameter analysis, it's that s11 = b1/a1 when a2=0
Your definition above says that rho = b1/a1 no matter what
the value of a2. Some configurations have rho = s11 and some
don't.

There are differences between your transmission line analysis,
an s-parameter analysis, an h-parameter analysis, a y-parameter
analysis, or a z-parameter analysis. If they were all alike,
there would be no need for their separate existences. FYI:

s11=[(h11-1)(h22+1)-h12*h21]/[(h11+1)(h22+1)-h12*h21]

s11=[(1-y11)(1+y22)+y12*y21]/[(1+y11)(1+y22)-y12*y21]

s11=[(z11-1)(z22+1)-z12*z21]/[(z11+1)(z22+1)-z12*z21]

s11=Vref1/Vfwd1 when Vref2=0, i.e. Pref2=0
--
73, Cecil http://www.qsl.net/w5dxp

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4701. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:16:51 UTC
From: Hugh <hugh@frontiernet.net>
Message-ID: <DQr4b.2716$hp2.2061@news01.roc.ny>
Source record: 109094
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Dave VanHorn wrote:
>>Tim,
>>What do you care if they dont like CB? Who cares what anyone thinks?
>>Get the handbooks from ARRL. You will see they are not the driving force
>>they think they are. And good luck with your tests
>
>
> Come on in, the water's fine. Ignore the toads with "shark" tee shirts.
>
>
Toads are dieing out I hear :)

4702. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:22:34 UTC
From: Steve Terry <g4wwk@despammed.com>
Message-ID: <eWr4b.2856$c12.35677@newsfep4-glfd.server.ntli.net>
Source record: 109096
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Hugh" <hugh@frontiernet.net> wrote in message
news:DQr4b.2716$hp2.2061@news01.roc.ny...
>
>
> Dave VanHorn wrote:
> >>Tim,
> >>What do you care if they dont like CB? Who cares what anyone thinks?
> >>Get the handbooks from ARRL. You will see they are not the driving force
> >>they think they are. And good luck with your tests
> > >
> > >
> > > Come on in, the water's fine. Ignore the toads with "shark" tee shirts.
> > >
> > >
> > Toads are dieing out I hear :)
>
OK, who want to pick up on the word "dieing" ?

Too many brain dead, etc, etc, etc....
It's so depressing

Steve Terry

4703. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:24:57 UTC
From: Steve Terry <g4wwk@despammed.com>
Message-ID: <tYr4b.2858$c12.35756@newsfep4-glfd.server.ntli.net>
Source record: 109097
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Cecil Moore" <Cecil.A.Moore@ieee.org> wrote in message
news:3f524362$1_7@corp.newsgroups.com...
> Tim wrote:
> > as a detested 'CBER' who has been looking at joining the HAM ranks now for
> > quite a few years but never had the cash I must say I am tempted to say on
> > the Muppet band where at least everyone behaves with some sense of
> > understanding of live & let live if this conversation is a showing of the
> > true HAM colours then I think perhaps the roles a reversing. This has
> > certainly made me think three or four times weather to bother taking the
> > exams and taking up a HAM callsign.
>
> Please don't confuse usenet with ham radio. Except for a few really
> bad apples (which also exist in CB) hams on the air are polite and
> courteous and generally abide by "The Amateur's Code". That code
> obviously doesn't exist on usenet.
> 73, Cecil http://www.qsl.net/w5dxp
>
What you really mean is not only do you chide fools easily,
you actually welcome them !

Steve Terry

4704. Re: EZ Way tower sheared hinge pin conclusion(?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:46:20 UTC
From: ddl@danlan.*com
Message-ID: <1156226@news1.IPSWITCHS.CMM>
Source record: 109098

In article <3F5215D6.4E87FA6D@cwis.net>, w5lz@cwis.net ('Doc) writes:

| Getting someone who knows what he's doing to look at it is
| a very good idea. Probably the simplest solution is to have
| another base plate made (not cheapest, simplest).

Any idea what kind of service I should be looking for? I could bring the base plate somewhere, but that isn't the part that I'm worried about. The real stress was to the center of the hinge that is welded to the ground post, so someone would have to come to my house to (re)build it. The local machine shop doesn't seem to be into this kind of thing. Maybe I need a millwright (old definition)?

Dan Lanciani
ddl@danlan.*com

4705. Re: Should I run a Sky-wire loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 19:56:09 UTC
From: Dale Parfitt <parinc@gte.net>
Message-ID: <3F525097.EF4AA364@gte.net>
Source record: 109099

Joe O wrote:

> A Horizontal Loop will pickup less vertically polarized atmospheric noise.

Could you give an explaination for why this is?

Dale W4OP

4706. Re: Determining antenna resonance with a grid dip meter

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 20:16:06 UTC
From: Dick <rhughes33@cableone.net>
Message-ID: <uil4lvkm5p4ucf6ogdbollj31i737adufa@4ax.com>
Source record: 109100

What I always did, and I'm sure it was in the manual, was to wind a
few turns of hook-up wire and solder the ends to a coax connector. I
then plugged in the coil at the end of the coax, stuck the GDO coil
through the coil on the connector, and took a reading. I can't recall
that using that method ever mislead me. I think I even have that
little coil on a BNC out in the junkbox.

I sold the Eico GDO that I had for years. In 1999 I acquired a Millen
GDO in mint condition from an estate sale. I sold it on Ebay, but now
wish I had kept it.

Dick - W6CCD

On 31 Aug 2003 16:48:47 GMT, fmmck@aol.com (Fred McKenzie) wrote:

><<
>Try http://w1.859.telia.com/~u85920178/use/gdo.htm
>
>BR from Ivan
>
>"Tom Coates" <tecoates@comcast.net> wrote in message
>news:<rQCdnfXCtI-Y9daiXTWJgA@comcast.com>...
>>
>> How do I couple the meter to the antenna?
>>
>> Tom, N3 >>
>
>Ivan & Tom-
>
>I've had a couple of old Heath GDOs over the years. I was never able to find a
>dip by coupling into the antenna's co-ax. I see that Ivan's article above
>contains the "secret" method I finally found that works - you have to
>short-circuit the feedpoint of the antenna and couple directly to the element.
>
>The article above suggests that you can form a loop in the antenna wire to
>couple more tightly to the GDO. However, that would tend to introduce
>inductance which would interfere with the measurement. What I do is lay the
>coil next to the antenna element so the antenna wire is parallel with the GDO
>coil wire tangent.
>
>For example, take a one meter wire or un-bent coat hanger. A GDO coupled to it
>should have a dip at 150 MHz. I expect there will also be a dip around 450
>MHz, et cetera (odd harmonics).
>
>73, Fred, K4DII

4707. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 20:30:32 UTC
From: Roy Lewallen <w7el@eznec.com>
Message-ID: <vl4mngtl4auh15@corp.supernews.com>
Source record: 109101

I tried really hard to say clearly that I'm speaking of transmission
lines and not one- or two-port analysis. How could I have phrased that
in a way it would be understood?

Roy Lewallen, W7EL

Cecil Moore wrote:
> Roy Lewallen wrote:
>
>> 1. That the voltage reflection coefficient is the ratio of reverse to
>> forward voltage.
>> For those promoting some other formula for voltage reflection
>> coefficient: Which of the above assumptions is false?
>
>
> Number 1 is not always true for s11, the s-parameter reflection
> coefficient.
>
>> What substitute assumption is true?
>
>
> For an s-parameter analysis, it's that s11 = b1/a1 when a2=0
> Your definition above says that rho = b1/a1 no matter what
> the value of a2. Some configurations have rho = s11 and some
> don't.
>
> There are differences between your transmission line analysis,
> an s-parameter analysis, an h-parameter analysis, a y-parameter
> analysis, or a z-parameter analysis. If they were all alike,
> there would be no need for their separate existences. FYI:
>
> s11=[(h11-1)(h22+1)-h12*h21]/[(h11+1)(h22+1)-h12*h21]
>
> s11=[(1-y11)(1+y22)+y12*y21]/[(1+y11)(1+y22)-y12*y21]
>
> s11=[(z11-1)(z22+1)-z12*z21]/[(z11+1)(z22+1)-z12*z21]
>
> s11=Vref1/Vfwd1 when Vref2=0, i.e. Pref2=0

4708. Comet VA30 (base loaded tri-band dipole 40/15/10)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 20:56:44 UTC
From: PA3HHO <billyrocksagain@hotmail.com>
Message-ID: <bitnon$783$1@reader1.tiscali.nl>
Source record: 109102

Hi OM's

Last year during a Dutch Ham fair I bought myself a Comet VA30. This is a shortened base loaded multiband dipole for 7/21/28 MHz. The manual that was included was Japanese. I was able to figure out the correct dimensions (depending on how you setup the antenna e.g. as a horizontal dipole or (3 x) vertical with one (3 x) radial per band.

The instructions about a capacitor that's supposed to be in parallel with the feedpoint is unreadable. I know that (heavily) shortened dipoles need some kind of adaption to get a VSWR of 1:1 @ 50 Ohm. Two caps (small ceramic disc type, probably in 100's of pF range) are included but I'm not sure which one to use. I've used one, the other, both and none, but VSWR is terrible on all three bands.

I know I can't expect micacles from a 2 x 9 ft dipole on 40 meters, but I should do OK on 15 and 10 I guess. Because of it's size it's ideal for on holidays but last one was no success at all. Anyone has any experience with this antenna and/or maybe has an English (German, French or Dutch OK too) manual for the Comet VA30?!

Thanks!

Rgrds, Pleun (PA3HHO)

4709. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 21:20:07 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f526810$1_6@corp.newsgroups.com>
Source record: 109103
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

Steve Terry wrote:
> What you really mean is not only do you chide fools easily,
> you actually welcome them !

As far as I am concerned, even fools are welcome into amateur radio.
When I got my Conditional license at 14 years of age, I was certainly
foolish about a majority of things.
--
73, Cecil http://www.qsl.net/w5dxp

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4710. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 21:26:23 UTC
From: Cecil Moore <Cecil.A.Moore@ieee.org>
Message-ID: <3f526989_6@corp.newsgroups.com>
Source record: 109104

Roy Lewallen wrote:
> I tried really hard to say clearly that I'm speaking of transmission
> lines and not one- or two-port analysis. How could I have phrased that
> in a way it would be understood?

You can speak of anything you want. But a transmission line analysis
including a tuner and reflected waves *IS* a two-port analysis at the
tuner. It *IS* a one-port analysis at the load. There's just no getting
around it. Your transmission line analysis resembles a Z-parameter
analysis of one-port and two-port systems.
--
73, Cecil http://www.qsl.net/w5dxp

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-----== Over 100,000 Newsgroups - 19 Different Servers! =-----

4711. Re: EZ Way tower sheared hinge pin conclusion(?)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 21:59:30 UTC
From: Tarmo Tammaru <t-tammaru@home.com>
Message-ID: <KIudnUtIhN5Y8s-iU-KYuA@comcast.com>
Source record: 109105

Don,
I am glad nobody got hurt, and that you let everybody know how things turned out. More people should do that. I have often wonder what happened to some people who have posted problems here.

Tam/WB2TT

4712. Re: A Subtle Detail of Reflection Coefficients (but important toknow)

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 22:16:46 UTC
From: Reg Edwards <g4fgq.regp@btinternet.com>
Message-ID: <bits4ensc2@hercules.btinternet.com>
Source record: 109106

"Roy Lewallen" wrote
> I tried really hard to say clearly that I'm speaking
of transmission
> lines and not one- or two-port analysis.

==========

There's no difference between the two. If you produce the symetrical S-matrix for a length of transmission line, its 4 parameters contain complex hyperbolic functions like (Ro+jXo)*Cosh(A+jB) . . . . . where A is nepers and B is radians.

Whichever way you go, matrix-algebra or Heaviside, you perform exactly the same set of calculations and, not surpisingly, you end up with the same answers - provided Zo in one place only is not followed with an askerisk just to obtain another answer which is thought to be more preferable.

Reg, G4FGQ

4713. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 22:22:52 UTC
From: tdonaly@aol.com
Message-ID: <20030831182252.22854.00000195@mb-m23.aol.com>
Source record: 109107

Airy R. Bean wrote,
>
>Yes. Stay in CB where you belong.
>
>Unless you have an interest in technical matters, which
>will to a large extent remove any need to spend a lot of money,
>then you don't have the makings of a Radio Ham anyway.
>
>Tim <tim.mcc@tesco.net> wrote in message
>news:3f51ecd4$1_2@mk-nntp-2.news.uk.tiscali.com...
>> as a detested 'CBER' who has been looking at joining the HAM ranks now for
>> quite a few years but never had the cash I must say I am tempted to say on
>> the Muppet band where at least everyone behaves with some sense of
>> understanding of live & let live if this conversation is a showing of the
>> true HAM colours then I think perhaps the roles a reversing. This has
>> certainly made me think three or four times weather to bother taking the
>> exams and taking up a HAM callsign.
>

Quit being a lemonhead, Bean. There are all kinds of things for all kinds
of people in ham radio. Some hams can't live without spending huge amounts
of money, and others do just fine with modest equipment they built from plans
in
ham publications. If sour guys like you were the only people in the hobby,
there wouldn't be any hobby.
73,
Tom Donaly, KA6RUH

4714. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 22:25:57 UTC
From: tdonaly@aol.com
Message-ID: <20030831182557.22854.00000196@mb-m23.aol.com>
Source record: 109108

>
>>
>What you really mean is not only do you chide fools easily,
>you actually welcome them !
>
>Steve Terry

Who you callin' fool, fool?
Tom Donaly, KA6RUH

4715. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 22:35:54 UTC
From: "News.CIS.DFN.DE" <ken.TOPg1itv@ntlworld.com>
Message-ID: <bitt84$cin67$1@ID-197247.news.uni-berlin.de>
Source record: 109109
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

```
"Steve Terry" <g4wwk@despammed.com> wrote in message
news:eWr4b.2856$c12.35677@newsfep4-glfd.server.ntli.net...
>
> OK, who want to pick up on the word "dieing" ?
>
> Too many brain dead, etc, etc, etc....
> It's so depressing

You have already done that!
```

4716. Re: Complex Z0 [Corrected]

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 22:37:17 UTC
From: pez <pez7sv@hotmail.com>
Message-ID: <bittb3msd1@nic.grnet.gr>
Source record: 109110

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:bit0jdrhh1@hercules.btinternet.com...
-
|
| It is true the formula gives
| ...
| As t0 approaches -45 degrees, Rho approaches
| 1+Sqrt(2) = 2.414
| As you must know, the formula is obtained by
| differentiating Rho
| ...
| It provides proof that values of Rho greater than
| unity do exist.
|
| But a worship of mathematical logic
| ...
| on this newsgroup.
| ...
|
====================
-
Dear Mr. Reg Edwards,
-
Thank you for your comment.
-
A.
For the formula:
Actually,
after ten days of revision of the book
"Transmission Lines" by R.A.Chipman, [Shaum's, 1968]
-a great book in general, not only on its subject-
and of the accompanying notes by yin,SV7DMC
-who in the Summer of 1995 checked all the material
and solved all the problems of the book-
I realized, at last, that:
-
The formula at page 137,
for the magnitude of Rho
as a function of its normalized impedance ZT/Z0,
produces as an image, a
[-135,+135] degrees "Packman".
-
Therefore,
every complex Z0 with argument t0

restricts the Packman
to a rotated "Half-moon"
with boundaries at
[-90-t0,-t0+90] degrees.
-
An application
of the condition |ZT/Z0|=1
-which is a result of differentiation indeed-
on each of the two mentioned boundaries,
results immediately to
the biggest of the two respective values:
-
Sqrt([1 + Sin(Abs[t0])]/[1 - Sin(Abs[t0])]).
-
But the last one
is always either equal to or greater than unity.
Thus for
t0=-45 degrees
it gives
1+Sqrt(2), indeed.
-
B.
For the newsgroup:
Yes, perhaps.
But please,
let me tell you that:
The newsgroup being
an insistent mathematical logic challenger,
finally becomes,
in this way,
a valued friend,
at least for us, down here.
-
Sincerely yours,
-
pez
SV7BAX
-

4717. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 23:03:18 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308311503.5859666d@posting.google.com>
Source record: 109111

Cecil Moore <Cecil.A.Moore@ieee.org> wrote in message
news:<3f524255_7@corp.newsgroups.com>...
> Dr. Slick wrote:
> > I meant, how did they derive Reflection Coefficient=(Zn-1)/Zn+1)?
> > They certainly don't show us! This would be key to answering our questions.
>
> Not taking sides here, just hopefully contributing something.
>
> The s-parameters normalize voltages to the square root of Z0
> such that the square of 'a1' is incident power normalized to
> Z0=1.0. The standard Smith Chart is normalized to Z0=1.0. Thus
> s-parameter quantities can be plotted directly on a standard
> Smith Chart. The above equation looks as if Z0=1.0 for
> normalization purposes. If 50 ohms is normalized to 1.0,
> then Zn is probably Z1 also normalized to 50 ohms, i.e.
> (Z1-Z0)/(Z1+Z0) = [(Z1/Z0)-(Z0/Z0)]/[(Z1/Z0)+(Z0/Z0)] =
> (Zn-1)/(Zn+1) = s11. The 'n' in Zn may mean Z1 "normalized".

This is understood.

What is not is how one gets from:

Voltage R. C.= (Vr/Vi)e**(2*y*z)

where y=sqrt((R+j*omega*L)(G+j*omega*C))
and z= distance from load

To:

Voltage RC=(Z1-Z0)/(Z1+Z0)

And i have NO problems with the normalized formula,
AS LONG AS Zo IS PURELY REAL.

If Zo is complex, then Zo*/Zo is certainly NOT equal to
one!

I don't really trust this book too much, maybe that's why
it is out of print.

Slick

4718. Re: Reflection Coefficient Smoke Clears a Bit

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 23:11:26 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308311511.265bef8b@posting.google.com>
Source record: 109112

"Tarmo Tammaru" <t-tammaru@home.com> wrote in message
news:<zbucna08gvQzms-iU-KYgg@comcast.com>...
>
> > But they never explain WHY a lossy line can INCREASE the
> > reflected power! The lossless line would not attenuate the reflected
> > wave at all!
> >
> > I don't trust their claims on this.
> >
> > If you get more power reflected than you send into a passive
> > network, you are getting energy from nowhere, and are thus violating
> > conservation of energy.
> >
> >
> But the reflection coefficient is for Voltage. I think the clew lies in "The
> main point of interest lies in the fact that we cannot, in general,
> superpose the average powers carried by incident and reflected waves on a
> dissipative line, although we could do so on a lossless line" A/C/F

But the square of the MAGNITUDE of the Voltage RC is the power
RC.

They never tell us why, and i don't think a lossy line will
increase your chances of getting rho>1. In fact, i don't believe this
is possible with a passive network.

>
> > > > Also, they go from equation 5.12 to 5.13 without showing us how
> > > > they got there.
> > >
> > > They use the identity e**jx = cos x + jsin x
> > >
> >
> >
> > Yes? And? How did they get the Zo=(Zn-1)/(Zn+1) from this?
> >
> >
> I think the math is the same as for a lossless line

What is not understood is how one gets from:

Voltage R. C.= (Vr/Vi)e**(2*y*z)

where y=sqrt((R+j*omega*L)(G+j*omega*C))
and z= distance from load

To:

Voltage RC=(Z1-Z0)/(Z1+Z0) for purely real Zo
or Voltage RC=(Z1-Z0*)/(Z1+Z0)

And i have NO problems with the normalized formula,
AS LONG AS Zo IS PURELY REAL.

If Zo is complex, then Zo*/Zo is certainly NOT equal to
one!

I don't really trust this book too much, maybe that's why
it is out of print.

> The "print file" for a book used to be stored on hundreds of tin or lead
> plates. Two N pages per plate. After printing some number of books, these
> plates would have been recycled. I don't know that there was not a newer
> edition.
>
> Tam/WB2TT

A book can always be reprinted if there is a demand.
Possibly no one bought the book because it's incorrect?

Slick

4719. Re: nice amateur software!

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 23:22:50 UTC
From: Steve Terry <g4wwk@despammed.com>
Message-ID: <wrv4b.3034$c12.37200@newsfep4-glfd.server.ntli.net>
Source record: 109113
Cross-posted to: alt.ham-radio.vhf-uhf,de.comm.ham,rec.radio.amateur.antenna,rec.radio.amateur.dx,uk.radio.amateur

"Cecil Moore" <Cecil.A.Moore@ieee.org> wrote in message
news:3f526810$1_6@corp.newsgroups.com...
> Steve Terry wrote:
> > What you really mean is not only do you chide fools easily,
> > you actually welcome them !
>
> As far as I am concerned, even fools are welcome into amateur radio.
>
Yep, that figures
>
> When I got my Conditional license at 14 years of age, I was certainly
> foolish about a majority of things.
> 73, Cecil http://www.qsl.net/w5dxp
>
Who's talking about those who may be justifiably foolish ?
Only you

Steve Terry

4720. Re: Swan 250C w/ac supply

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 23:26:02 UTC
From: NN7K@reno.rmci.net
Message-ID: <vkv4b.15$Aa.13@fe01.atl2.webusenet.com>
Source record: 109115

E-Bay has them, but , these rigs are over 30 years old, and from company been out of business about that long, and they were TVI GENERATORS ! ! And there are better rigs (solid state, and much CLEANER !) out there quite reasonable !, Try yaesu (ft-620), also, kenwood made 6 meter ssb rig TS-600, SSB Engineering SB-50, and, then there are transverters for your low band xcvr! (all of these around $300-350) tho, I hate ICOM (never had one didn't self destruct!) but, they made several (biggest problem with these is replacement parts , never made many for them!) but, tubes have about had it (at power levels below 500 watts , IE 4x150-250, 8873-4-5, 3-400/500z, ect, even the 6146 getting hard to find new!) , but, you don't need great power, either-- from the voice of experience! (6 METER Q.R.P. W.A.S. , # 724)
Jim NN7K

"Carl Domanico" <carl.domanico@verizon.net> wrote in message
news:3F4ED88C.8050204@verizon.net...
Hi...I've been looking around for one of the older Swan Transcevers...It is The Model 250C 6 Meter Unit, with if possible the Matching AC Supply...I'm not looking for a basket case, however. the radio does not have to be Mint either ! Also the price has to be reasonable...or else I might as well go out and but one of these new Icom mobile radios with multi-mode VHF-UHF-6 meters-and HF to boot !!...for some $ 725.00
Anyway if someone out there has one of these radios ...please drop me a line and we can go from there...OK

Thanks a Lot
Carl
N2MFW

4721. Re: Complex Z0 [Corrected]

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 23:26:11 UTC
From: radio913@aol.com
Message-ID: <1d15af91.0308311526.6b435199@posting.google.com>
Source record: 109114

"Reg Edwards" <g4fgq.regp@btinternet.com> wrote in message
news:<bit0jdrhh1@hercules.btinternet.com>...
>
> It is true the formula gives the greatest possible
> magnitude of the reflection corfficient, Rho, for
> any given value of the angle of Zo.
>
> As t0 approaches -45 degrees, Rho approaches
> 1+Sqrt(2) = 2.414
>
> As you must know, the formula is obtained by
> differentiating Rho with respect to the angle of
> Zo and then equating to zero.
>
> It provides proof that values of Rho greater than
> unity do exist. But a worship of mathematical logic
> is not part of any religion on this newsgroup.
> ---
> Reg, G4FGQ

It very simple, and no complicated math is needed to understand.
The port impedance does not change from when the incident power
is launched and when the reflected power returns, so the power will be
((Vrms)**2)/Zo). This should still hold if the Zo is complex, because
you will have the same load in both cases. If the RMS voltage
returning
is greater that the voltage you put in, you MUST have an active
device.

If you simply square the MAGNITUDE of the voltage reflection
ratio, you will get the power reflection ratio. So if the voltage RC
is greater than one, so will be the power reflection coefficient.

Understand that me and William E. Sabin didn't invent the
conjugate equation, it has been there all along.
You Reg, were the one who convinced me that the "normal" R. C.
equation
must be wrong for complex Zo.

Please look it up in any basic RF book: For a passive network,
0=<rho=<1. But the R. C. can never be more than one for a passive
network.

I challenge anyone to find a reflectometer calculator that shows
rho > 1.

Slick

4722. Re: Should I run a Sky-wire loop?

Newsgroup: rec.radio.amateur.antenna
Date: 2003-08-31 23:37:49 UTC
From: junkmail@altonillinois.com
Message-ID: <70729ae5.0308311537.6ec40168@posting.google.com>
Source record: 109116

If I use a Polyphaser lightning arrestor, that is grounded to a grounding rod, and hooked to the feed line, and the radio, will that do the same job as grounding the coax feed line braid?

or are we talking about two different grounding steps?

thanks for the help!!!